



## 10<sup>th</sup> NEU-KKU INTERNATIONAL CONFERENCE



## SOCIO-ECONOMIC AND ENVIRONMENTAL ISSUES IN DEVELOPMENT



LABOUR - SOCIAL PUBLISHING HOUSE



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ISSUES IN DEVELOPMENT**

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**10<sup>th</sup> INTERNATIONAL CONFERENCE SOCIO-ECONOMIC  
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**PART 1: ECONOMIC DEVELOPMENT  
AND INTEGRATION**



# THE CAUSE OF THE GLOBAL FINANCIAL CRISIS AND LESSONS FOR VIETNAM

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## **Abstract**

*In the last 10 years, after becoming the official member of WTO in 2007, Vietnam has made commitments to comply with the US-Vietnam Bilateral Trade Agreement and other international economic agreements. Vietnam has also become a member of the AEC and entered into important free trade agreements, notably the Trans Pacific Partnership. The financial integration of Vietnam in the global economy has been increasing rapidly. However, Vietnam also witnesses the unexpected economic fluctuations domestically and internationally. The global financial crisis, especially the US financial crisis, exerts a major impact on Vietnam's economy and its banking system. Accordingly, the real estate market, stock market and banking system in Vietnam have fluctuated remarkably. This article discusses the causes of the US financial crisis and analyses the US government's solutions. The causes of the US financial crisis are distributed to lax lending standards, failures in regulations of derivatives financial instruments, and lack of state control of banking systems. In this respect, recommendations are made for Vietnam's case.*

**Keywords:** *housing loans, derivatives financial instruments, financial crisis.*

## **1. Introduction**

The financial crisis 2007-2008 in the United States is considered as the biggest international economic issue within recent 10 years. It started from the housing subprime mortgage crisis, along with numerous derivative instruments, causing the global economic crisis. In the US, there were waves of selling, spreading across stock markets around the world. In October 2008 alone, more than \$10 trillion investment in securities was evaporated, while a range of global stock markets closed temporarily to stop trading. Oil prices plummeted from a record \$147 per barrel from 11 July 2008, to \$44-46-50 per barrel until the end of November 2008, the lowest one in four years (Pham Minh Chinh & Vuong Quan Hoang, 2009).

The crisis was rooted in the US housing bubble (which occurred in 2005-2006) with high-risk subprime mortgages and interest-bearing mortgages. Before that, with

the combination of the highly rising housing price and easy credit conditions, many people borrowed money from investment banks to speculate in real estates with the hope of gaining money from the differences between transactions.

The global economic crisis has had a great impact on Vietnam when Vietnam is implementing the financial market opening schedule under the WTO commitments and other international commitments. The stock market, real estate market, gold market and foreign currency markets have fluctuated significantly. Commercial banks in Vietnam have been also strongly affected by international factors and the fluctuations of the mentioned markets. The non performance debt rate used to be 17.2%. The banking sectors have been restructuring since 2012 (Nguyen Thi Kim Thanh, 2016).

## **2. Theoretical background and methodology**

There are different views of the financial market and its structures. According to Gitman & Joehnk (1990), a financial market is a mechanism that links financing providers to those who need funds by signing contracts through intermediaries such as stock exchanges. Sachs & Larrains (1993) define a financial market is a field of circulation of financial assets. The European Central Bank defines the financial market structure according to the financial instruments, so that there are debt market, equity market, foreign exchange market, material market, and derivatives market (ECB, 2005). Noticeably, there is a view to divide financial markets into 2 types: bank-based and market-based one (Demirguc-Kunt & Levine, 1999). Financial markets contain money market, stock market, foreign exchange market and commodity market. The real estate markets and the financial markets, as well as their market segments, have a close relationship.

The financial crises can be considered in two aspects: particular cyclical crises and particular crises. A cyclical financial crisis is a part of an economic crisis and manifests itself when the economic cycle reaches its foundations. In this case, the financial crisis is comprehended as a sharp decline in financial assets resulting in the mass bankruptcy of market players (Rudy, 2003). A particular financial crisis is characterized by a turbulence in the functioning of the financial markets that manifests itself in the depreciation of the domestic currency, the depletion of foreign exchange reserves, the failure of financial institutions, the insolvency of nonfinancial entities and public default (Rudy, 2003). We define the world financial crisis of 2007-2008 as a particular crisis.

In this paper, we use dialectical materialist methodology with the view that all the results have its causes. The research uses quantitative methods such as synthesis, analysis, inductive, deductive.

### **3. Research results**

#### ***3.1. The causes of the financial crisis in the US***

##### ***3.1.1. Subprime housing loans***

Subprime loans are loans in which banks lend money not based on traditional principles - real income of borrowers, but, specifically, banks lend money to black people, immigrants, and green card holders to buy houses based on expected increases in housing prices, rather than based on a stable income from salaries and wages.

US Investment banks used securitization to turn housing loans to different securities, including mortgage-backed securities (MBS), collateralized debt obligation (CDO) and credit default swap (CDS).

When the economy declined and housing borrowers failed to pay for their housing loans, credit risks were transferred to securities which have real estate credit portfolios as collaterals. As the crisis intensified, property sales became more and more popular, causing real estate prices to fall down. This means that the collateral value of bonds decreases and the credit risks increase.

The turmoil of the crisis occurred in that way and the stock price fell sharply. Although investment banks did not hold whole risks, they directly or indirectly maintained a number of stock portfolios related to real estate. As a result, a series of investment banks reported their business losses.

##### ***3.1.2. Housing bubble***

There are 3 elements to create a housing bubble. They are as follow:

Firstly, in the US, most house buyers must borrow money from the banks and pay the bank interest and principle for a long period of time. Hence, there is a strong connection between interest rate and the status of real estate market. When the interest rate is low and the credit condition is easy, people tend to buy more houses, pushing housing prices to increase. When the interest rate is high, the housing market is frozen, there are more sellers than buyers, which pushed housing prices to decrease. Since 2001, in order to keep the economy out of stagnation, the Federal Reserve repeatedly lowered interest rates. This caused banks to lower interest rate for housing loans (although interest rates for housing loans are much higher than the base rate of the Fed, but its level always depends on the base rate). In the mid 2000, the base rate was above 6% per year, but it was continuously reduced and reached 1% per year by the mid 2003 (Nguyen Dac Hung, 2012).

Secondly, related to housing owning policy, at that time the US government encouraged and facilitated poor and black people to borrow money to buy houses

from financial institutions under easy credit conditions. Most of these loans were implemented by 2 companies, Fannie Mae and Freddie Mac which were created by government. These 2 companies helped to inject capital into the real estate market by buying back commercial bank loans, turning them into mortgage-backed securities (MBS), and selling them again for Wall Street investors, especially giant investment banks such as Bear Stearns and Merrill Lynch (SEC, 2012).

Thirdly, as mentioned above, since there was a transformation of loans into investment tools, the credit market which served the real estate market was no longer the only playground for commercial banks or real estate mortgage lenders. It has become a new playground for other investors who were able to mobilize capital from all places, including foreign capital. The establishment, sale and insurance of MBS was so complex that it made them out of the normal control of the government. Because of the lack of control, investors became more greedy and riskier. As most of the loans could be resold and turned into MBS, commercial banks became riskier in lending, despite the borrowers' ability to repay.

Therefore, real estate market became very active, many people with low income or no good credit history could still afford to buy a house. In order to borrow money, these people usually pay higher and adjustable interest rates over time (for example, if the deal is borrowed with the interest rate of 6% per year and adjusted after 3 years, the new interest rate will be set right after 3 years). This group belongs to the subprime rate category. In spite of the subprime borrowers' ability to repay their loans, the number of loans extended to this group have increased rapidly. The loan amount rose from \$ 160 billion in 2001 to \$ 540 billion in 2004 and \$ 1,300 billion in 2007 (Trinh Thi Hoa Mai, 2009). Fannie Mae was more aggressive in the acquisition of risky loans due to facing more competition from other companies, such as Lehman Brothers. In addition, demands for MBS acquisition were still high because until before 2006, the real estate market had not shown any signs of a bubble burst. Moreover, investors were also reassured that they could still buy other insurance and investment tools. This led insurance companies to become more aggressive in selling CDS to the market, despite their ability to secure.

Due to easy credit conditions, demands for houses were very high, leading the increase in housing prices. The averages housing price rose by 54% within 4 years from 2001 (when Fed reduced base rate) to 2005. This also led to the speculation and expectation that housing price continuously increases. As the result, many people were willing to buy a house at high prices regardless of its real value and their ability to repay later because they could resell their house to repay their loans with a profit. Therefore, a housing bubble has formed.

### *3.1.3. Use of financial derivatives*

- Establishment and purchase of MBS

Financial derivatives are diverse and complicated. Fannie Mae or Lehman Brothers bought mortgage loans from commercial banks, converted them into different types and then issued MBS to resell to investors. For example, Fannie Mae purchased 1,000 mortgage loans with the same characteristics at the original of \$ 200,000 per loan. As a result, the total value of these loans was \$ 200 million. Then it converted them into 100,000 MBS with the price of \$ 2,000 per MBS. After buying MBS, investors received the loans' principal and interest transferred monthly by borrowers (through an intermediary company) for a certain period of time.

After the loan's duration, investors were expected to receive more than \$20,000 (including the principle and annual interest). The riskier MSB is, the higher profit investors can get. As there is a difference in the risk of MBS type, insurance and risk assessment companies like AIG also joined in selling insurances for MBS investors. These insurances called a credit-default swap (CDS) guaranteed to MBS investors that if borrowers fail to pay back their debt and the MBS depreciates, investors will be compensated. This has created more players joining into the game.

- Credit default swap

Credit default swap (CDS) was created in 1997, by Blythe Sally Jess Masters, an economist and JP Morgan's commodity trading eagle. It accounted for about 50% of the transactions of the International derivative market. Before the subprime mortgage crisis in 2008, CDS was very popular in the United States. The US citizens invested in CDS derivative,s but were not aware of their risks. They only knew that CDS was insured by AIG, so that there was no default. After the collapse of AIG, the fragmented CDS network was damaged and then CDS was considered as the most risky instrument among derivative types.

For example, you invest \$10 billion in HAG bonds. The Housing market is frozen, you are afraid that HAG defaults. What will you do? The simplest way is to sell those bonds. Another way is hedging those bonds by purchasing CDS. Then AIG agrees to sell default insurance of HAG with the rate of 1/100, which means that no default, you lost fee, while you earn insurance premium.

Basically, CDS is like a gamble. For example, there are 2 gambles A and B who bet on the performance of horses at a racecourse. A bets that horse V will die or be injured within the next 3 years. B accepts to bet A with the rate of 1 to 1000. A bets \$5 per week on the horse V being injured or died or not being able to race. If yes, B will pay A \$5000. If not, A will pay again \$5 next week. It is supposed that there is a person not familiar with racehorses but the gamble B. Last year, B accepted to

bet with the rate of 1 to 1000 but this year B only accepts the rate of 1 to 100, which means A has to pay \$50 per month to receive \$5000 if the horse is injured or died. Hence, the betting rate rises from 0,1% to 1%. If each 0.01% point is a basic point, betting rate increases from 10 basic points to 100 basic points. The basic point reflects the odds of betting on the health of the horse. Just knowing the betting rate with B, but the horse, that person will indirectly know the horse's health condition. It yesterday, the horse was sick, certainly today, B would accept the betting rate of 1 to 100 (100 basic points), rather than 1 to 1000 (10 basic points). The basic point price rises. If tomorrow the horse gets better, B will accept the betting rate of 1 to 1000 (10 basic points), the basic point price declines. Therefore, the more CDS price goes down, the better health condition of the betting assets and the lower the probability of a default.

Returning to the example of HAG, people who buy bonds and CDS are called protection buyers. AIG receives premium and pays premium if HAG actually defaults. AIG is called protection seller. If HAG defaults, buyers lose \$10 billion, but thanks to hedging by CDS, buyers receive AIG's compensation to limit the losses (Huy Nam, 2015).

In order to hedge risks of loans and maintain capital adequacy ratios, investment banks and other banks were usually the bigger buyers of CDS market. Banks accounted for 40% of CDS purchases all over the world in 2010. Then it came to security companies, hedge funds (whose purchase proportion was 15%), enterprises and governments (which bought CDS to hedge their corporate bond portfolio). On the seller side, big life and non-life insurance companies like AIG played an essential role in CDS market because they are very CDS sellers. They were the ones who created CDS, calculated the insurance rate of each kind of bonds and fixed it out how and where to invest with the return. Players' strategy and products in CDS market were diverse. For example, an insurance company could buy bonds of 3 good companies and 2 bad ones, securitize them and sell CDS. If one of these five companies was insolvent, one customer would receive \$100 and unfortunately, two others of them were insolvent, those customers would receive \$200.

The US economy encourages the consumption, so many people can borrow money to buy cars and houses. When the economy is stable, business is favorable, borrowers can repay the debt, no one defaults. Therefore, insurance companies like AIG promote the securitization of subprime loans. With one dollar of real estate assets of HAG, for example, there are 31 people pay \$1 to buy its default insurance. If HAG does well, AIG only earns premiums. But if HAG is insolvent with the odds of 1 to 100, AIG must pay  $100 * 31 = 3,100$  USD for \$1 of HAG assets. And for one billion

USD of HAG assets, AIG will not be able to pay, forcing them to sell off assets and bonds to pay indemnities.

#### *3.1.4. Short sale on the financial market*

When speculators forecasted that bonds of corporations involved in subprime lending would plummet, they massively borrowed these bonds and massively sold out them on the stock market, creating a downward pressure on the prices. Once the price fell to a certain level, the speculators will buy the same amount of bonds and return them to the lender plus a small fee, so they will enjoy the difference.

Even some speculators applied the naked short sale method, which means they did not borrow securities anymore but order a "strike down" sale for taking advantage of the three-day gap of a purchase to deliver stock.

#### *3.1.5. A lack of suitable supervision mechanism for banks and financial markets*

With a rich base of financial resources by selling debt portfolios to investment banks, companies easily lent their customers money. Based on different debt portfolios, these investment banks issued bonds to borrow more money. Debt portfolios were divided into low-risk, high-risk one... depending on the rating. Investors could choose any kind of bonds based on their risk appetite. There was a type of bonds that did not have ratings, but did have high profit as well as high risks.

As such, the risk of lending has shifted from a lender is financial company to an investment bank. Investors in the world have poured money into buying these securities, so they have provided huge amounts of capital for the hotly growing US real estate market.

#### *3.1.6. Trust crisis in financial market and banking sector*

According to Joseph Stiglitz's theory, a crisis starts with the collapse of trust. Banks posed a puzzle to each other about their level of lending as well as their assets. Complex transactions were created to eliminate risks and hide the slippage of the real value of the bank's assets. This was a game that when people started to feel the "taste" of loss and look at the financial system, losses would occur. The market went down and all "players" were lost. The financial market revolved around the principle of "reliability" and it has been eroded. Lehman's demise was a sign of low trustworthiness and its resonance will continue.

The key problem at that time was a spread of credit scarcity. It became more serious when investors started selling off venture capital investments in order to preserve capital. This led to a decline in market sentiment and the popularity of herd mentality and behavior, forcing the government to intervene broadly and deeply in order to restore public confidence.

To sum up, the main reasons of the US financial crisis that led to the international financial crisis are followed:

Firstly, as Fed implemented a loose monetary policy for many years, low-interest rates made the expansion of subprime lending. Banks extended lending included loans for low-income people who did not meet credit requirements.

Secondly, the financial market in general and the credit market in specific in the US and Europe became more liberal, but unhealthy, allowing the spread of speculative investment activities and the free openness of new derivative financial instruments with a lack of prudential supervision.

Thirdly, investors' confidence was weakened by the solvency of banks. The decline of the US, European and the world economy has led to the global bond sell-off, the lending restriction of numerous banks. This spread out over the world, making the crisis more serious.

With the concern of inflation, the Fed began increasing the base rate of the USD, leading the real estate market to slow down in early 2006.

From mid-2003 to mid-2006, the base rate of Fed grew from 1% to 5.25% per year (Trinh Thi Hoa Mai, 2009), pushing banks to raise housing lending rates. High lending rate caused a decrease in housing loans. Housing price started declining because supply exceeded demand. Those who bought houses at a high price before they realized that their house's market price was lower than their debt. In addition, in many cases, subprime lending borrowers began being unable to repay because of the new high, adjusted interest rates. They could not sell their houses as the house price was smaller than their debt. Consequently, borrowers were forced to give up their houses to the banks.

The more borrowers were unable to repay their debt monthly, the more MBS's price decreased. As mentioned before, many Wall-street investors bought MBS. A decline of MBS price made their asset value fall down. In addition, MBS insurance companies such as AIG got into troubles as they had to guarantee more and more bad loans. Moreover, banks or mortgage lending companies that still retained most of their loans (instead of selling them to Fannie Mae for example) witnessed their capital flows exhausted when the percentage of the insolvency of subprime borrowers increased.

In short, with many interrelationships between borrowers and many direct and indirect lenders, the downside of the real estate market had a direct impact on the financial markets in general. The extent of the spread and the seriousness of the problem was that the acquisition of derivative financial instruments (MBS and CDS) attracted many domestic and foreign investors into the game while the law of the playground was still missing or unclear.

## **4. Discussion and conclusion**

### ***4.1. Lessons of the implementation of rescue measures to the financial markets of the US***

With the collapse of the real estate market and the instability of the financial market, the US government had to intervene to prevent the economic crisis on a large scale. Steadily, the government rescued 4 giant companies that directly involved in the real estate – financial crisis. Firstly, in order to keep Bear Stearns from being bankrupted due to the over-investment in bad MBS, the Fed guaranteed \$30 billion debt of Bear Stearns, enabling JP Morgan Chase to acquire Bear Stearns. Secondly, the US Treasury Department announced an emergency package of as much as \$200 billion to help Fannie Mae and Freddie Mac (2 biggest companies invested in the real estate) keep working in order to stabilize the market. Thirdly, in order to prevent the crisis on a large scale, the Fed then rescued AIG (the biggest private insurance company in the world) by lending AIG \$85 billion to help AIG not be bankrupted. As mentioned above, as AIG sold too many CDS to MBS investors, when the real estate market was insolvent, AIG had to pay for insurance contracts. Since AIG operated globally (it sold a range of insurances for more than 100 countries), if it went bankrupt, it had influenced widely. Therefore, rescuing AIG seems to be compulsory to stop the spread of the crisis.

The mentioned three rescues showed that the US government influenced strongly and deeply. However, because of the complex and overlap (multi relationship) of the causes of the crisis, it was really difficult to recover the confidence of the markets. In addition, as the US government did not rescue the giant investment bank – Lehman Brothers (bankrupted in mid-September 2008), investors were afraid that their companies would also have the same result. The continuing loss of confidence was demonstrated by the decrease in the stock market index when investors sold out their bonds to get money out of the market to invest in other areas, such as T-bill.

Facing with the high financial market turmoil and its negative impact on the economy, the US government had to announce Emergency Economic Stabilization Act on 03 October 2008. This act allowed the Treasury to spend up to \$700 billion to purchase distressed shares and assets of financial companies and supply cash directly to banks in order to recover the market confidence and prevent the crisis spreading (Nguyen Dac Hung, 2012).

### ***4.2. Lessons of implementing measures to rescue financial markets in the world***

To rescue the financial markets, prevent negative influence of the financial crisis, governments around the world used a comprehensive range of measures.

Firstly, current regulations were revised to protect the rights of depositors, prevent the risk of mass withdrawals from financial intermediaries.

Some governments decided to raise the level of deposit insurance of banks and financial institutions. Governments were committed to ensuring the safety and full payment of individuals' savings at banks and financial institutions. The Australian Government was committed to ensuring the safety of all deposits at banks and credit institutions within three years. They claimed that deposit insurance's indemnity and its periods were unlimited. The US government increased the deposit insurance limit from \$ 100,000 to \$ 250,000. The New Zealand Government did the same. Similarly, Hong Kong also removed the deposit insurance limit of \$ 100,000. The Japanese government also declared unlimited deposit insurance within two years (Nguyen Dac Hung, 2012).

Secondly, use of strong financial resources to support liquidity, directly rescuing banks and financial institutions.

Governments around the world spent tens of billions dollars or even hundreds of billions of dollars to pump into the banking system, financial companies through lending operations to ensure the urgent and immediate liquidity; as well as nationalizing, buying bad debts and dominant shares and taking controls of banks and financial institutions.

Countries that spent the most based on the ratio of the value of stimulus package on GDP were China (21%), the United States (11.6%) and Germany (5.5%). The lowest ones were Russia, the United Kingdom (2.2%), France (1.9%) and Brazil (0.4%) (Nguyen Ngoc Thach & Ly Hoang Anh, 2014, p.69).

Thirdly, loosening monetary policy, cutting interest rates and reducing reserve requirement ratios.

From the end of September to November 2008, central banks simultaneously cut base rates to increase the liquidity of banks and financial organizations and decrease market interest rates. Within more than one month, there were central banks which cut its base rate for 3 times or significantly cut its base rate to one-third or one fourth normal one (Nguyen Duc Hoan, 2008).

Fourthly, implementing solutions to stimulate economic growth and support enterprises

In addition, to cut the base rate and reduce reserve ratio to support the liquidity of banks, some countries also took money to stimulate economic growth.

Fifthly, restructuring domestic banking and financial systems

Governments encouraged and facilitated financial institutions and banks to buy out collapsed or merged banks. The commercial banks and financial institutions tightened their lending activities. Regulations on financial supervision were reviewed and revised by the governments, ministries of Finance and the central banks in order to enhance the effectiveness of supervision.

Sixth, banks had to restructure their own management systems, especially the prudential systems, as well as restructuring credit and investment portfolios.

Banks reduced the number of staff, saved the cost and strengthened internal regulations. Some banks and financial institutions also resold some inefficient parts of their businesses, concentrated in profitable areas and restructured their financial capacity.

Seventh, central banks paid and prepaid interest on required reserves of commercial banks in order to reduce costs for banks.

Eightly, the governments of major economies in the world were aware that international financial markets were directly linked to each other, therefore it is necessary to coordinate with each other.

#### ***4.3. Crisis and Vietnam***

Firstly, the global financial crisis 2008-2009 clearly was rooted from housing credit. Broadly speaking, the financial-monetary crisis in Asia in 1997-1998 also mainly derived from real estate credit. Similarly, the crisis of the Japanese banking system in the 1990s was also rooted from the real estate market. High non-performing loan ratios of commercial banks in China in 2000 was caused by the real estate market.

Vietnam real estate market development in 2007-2011 was the main reason of bad debts and difficulties in Vietnam banking system. Many banks were resold or merged. Some banks which had a very high real estate debt ratio and took many mistakes in the implementation of housing credit were bought by the State Bank of Vietnam with the price of 0 VND. Other commercial banks were not acquired or merged, but had to restructure because of housing credit.

Secondly, over the past two years, the housing market in Hanoi and Ho Chi Minh City; the market of villas, beach resorts in Da Nang, Nha Trang, Phu Quoc... have been developing strongly because of the high investment from remittances, foreign investment, citizens' financial resources and banks' credit. According to the National Financial Supervisory Commission, by the end of August 2016, credit on real estate investment and purchase grew only 5.3% from the end of 2015, accounting for 8.5% of total credit (8.9% by the end of 2015). Meanwhile, consumer credit rose

28.7% from the end of 2015, accounting for 11.3% of total credit (9.7% in 2015). Consumer credit, focused mainly on housing repairs and purchases (49.9%), furniture purchases (26%) and vehicle purchases (10.7%). By the end of August 2016, total credit reached 4.560 trillion VND (National Financial Supervisory Commission, 2016). Real estate credit was 383 trillion VND and total real estate and housing credit was 1.027 trillion VND, accounting for 22.52 percent of total outstanding loans for commercial banks. Outstanding loans to real estate including investment in BOT and BT projects in 2017-2018 accounted for about 19 - 20% outstanding loans of Vietnam banking system to the economy. This rate was quite high and certainly not the correct number. That is the reported number. It is very hard to count exactly how many consumer loans, other purpose loans were invested in real estate.

Thirdly, commercial banks accepted the majority of housing loans using collateral formed in the future, such as apartments, villas bought. In terms of repayment resources, most commercial banks and clients expected an increase in housing prices or housing rental prices, but less based on borrowers' real income. There was a large percentage of demand for housing loans to invest. Investors waited for a rise in market prices to sell them and get the difference or rent them. With the current development of the real estate market and in the future and the current supply and demand relationship, it is difficult to expect the housing price to increase and it is difficult for the rental prices to meet the demands for debt repayment.

Meanwhile, it does not account the market downturn, a decrease in housing and rental prices, less renters, unable to sell houses, an increase in market interest rates. Borrowers could not repay their debts, so commercial banks must recover the borrowers' houses.

Fourth, in principle, commercial banks only lend 70% of the price of apartments or villas, buyers have to pay 30%. However, the investor supports the buyers for the 30% and part of that 30% is the origin that the commercial banks lend investors. Banks let home buyers use other assets as collaterals to pay the investors and the investor to use those monies to repay banks, pay contractors; and the contractors repay the banks... Hence, there are a lot of credit risks.

#### ***4.4. Recommendation***

Vietnam is continuing to integrate broadly into the international economic community in general and the international financial market in particular. It is necessary to understand the causes of the global financial crisis, the nature of new financial instruments, non-traditional policy operating views, measures to prevent systemic risks and transactional risks for banks and clients. We have the following recommendations:

Firstly, the SBV issued Circular No. 06/2016/TT-NHNN amending and supplementing some articles of Circular 36/2014/TT-NHNN on limits, safety ratios in the operation of credit institutions, branches of foreign banks, with an appropriate roadmap. It is a timely and necessary measure to strictly control credit on real estate investment. However, it is essential to increase the quality and the efficiency of banking supervision in order to ensure that housing credit is always within safe limits.

Secondly, the commercial banks themselves have to raise awareness of real estate credit risks in order to set up their own safety measures, and specific credit safety limits; as well as strengthening internal controls, especially the use of customer loans.

Thirdly, it is necessary to enhance research activities, understand and raise the awareness of financial instruments, new financial policy management measures for the staff of banks, including the SBV and its departments. Commercial banks should take advantage of the relationship with correspondent banks and strategic partners to provide training courses on risk-mitigation tools, new derivative instruments and complex financial services in the international financial market.

Fourth, it is necessary to raise public awareness of the role of government and the central bank in the use of non-traditional measures to cope with the extraordinary movements of the financial market, as well as the financial system. For example, three one member limited commercial banks - Oceanbank, GPBank and Construction Bank used to be joint-stock commercial banks. As they were at deep losses, they were bought by the government for 0 VND and were being assigned to Vietcombank, Vietinbank management. However, in the period of the new acquisition, there were many different views on this issue.

Fifthly, banks joining the international financial markets should actively study and analyze the investment tools, investment markets, partners... to avoid risks. On the contrast, in the process of building new partnerships in the Vietnam financial market, banks should be vigilance and multifaceted understanding.

Sixth, government, Ministry of Finance and SBV should flexibly use the policy measures for the financial market and the financial system in case of handling urgent and irregular issues.

Seventh, the Ministry of Finance, the State Securities Commission, and the National Financial Supervisory Commission should enhance the transparency in the Vietnamese stock market, ensuring its stable development.

Eightly, the SBV needs more flexibility in operating monetary policy instruments, especially requirement reserve instruments, refinancing loans, open market operations... in order to handle problems of the banking system as well as the monetary market in the implementation of macroeconomic objectives. It is associated with perfecting legal documents on controlling credit in high-risk areas such as real

estate and securities. At the same time, the SBV needs further studies, surveys and analysis of the nature of the credit lines among real estate clients, including investors, buyers, construction contractors and other contractors in order to give necessary risk management measures.

Ninely, the Government, the Ministry of Construction, the Ministry of Finance and local authorities need to take more specific measures to ensure the healthy and sustainable development of the real estate market.

In summary, the economic globalization, financial markets, real estate markets, banking, financial and monetary activities are closely intertwined in the context that many new and complex financial instruments and products have been introduced and used. Therefore, in the process of international integration and implementation of international commitments, Vietnam should understand their characteristics and impacts to prevent risks to the economy. At the same time, there should be measures to ensure the healthy and sustainable development of the real estate market.

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# SUCCESS IN THE EXCHANGE RATE MANAGEMENT AND ITS MULTIDIMENSIONAL IMPACTS ON THE MACROECONOMY

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## **Abstract**

*Exchange rate is a tool in operating monetary policy implemented by the State Bank of Vietnam. Foreign exchange management is a state management function, a content of macroeconomic management policies chaired by the State Bank of Vietnam. In nearly 10 years in general and in 2018 in particular, the exchange rate management and foreign exchange management of Vietnam have achieved important results, positively impacting many macroeconomic indicators. On the contrary, achieving many macroeconomic indicators also has a positive impact on managing exchange rates and managing external affairs effectively in the process of international economic integration. This study focuses on clarifying that content.*

**Keywords:** *Success, exchange rate management, multidimensional impacts, macroeconomy*

## **1. Introduction**

### ***1.1. Research on theory***

So far there have been many studies from a theoretical perspective both at home and abroad on exchange rates, foreign exchange management; which focuses on the following 9 main contents: i) Operating mechanism of floating or fixed exchange rates, or coordinating between these two mechanisms; ii) Measures to combat dollarization of the economy, exchange rate management and foreign exchange management in relation to the trade balance and current account balance; Free convert currency and foreign currency; iv) Develop the foreign exchange market in relation to the commodity market; v) Currency devaluation and macroeconomic impacts; vi) Operating exchange rates and foreign exchange management of emerging economies; vii) Factors affecting exchange rates and measuring the impact of those factors; viii) Exchange rate intervention measures of the Central Bank; ix) Coordinate the management of exchange rates and other monetary policy instruments.

## ***1.2. Research on practice***

Practical studies around the world focused on the exchange rate management and foreign exchange management of China, of some countries in the Americas, Southeast Asia, the impact of exchange rates and foreign exchange management financial and monetary crisis in Asia in 1998, the ruble crisis in Russia in the 90s; dollarization in Cambodia and some South American countries; foreign exchange reserves and foreign exchange reserves structure of some countries ....

Practical studies in Vietnam also focus on the above specific contents of different stages of the process of innovation and international economic integration in Vietnam under the perspective of doctoral thesis at Thuongmai University, Foreign Trade University, National Economics University, Banking Academy, ...; scientific research topics conducted by the Foreign Exchange Management Department of the State Bank of Ho Chi Minh City,... ; a number of articles published in economic journals, specialized journals and scientific conference proceedings. However, until now, no scientific research has evaluated the impact of foreign exchange management policy on macroeconomic indicators, focusing in recent years when Vietnam's economy is integrating. The current depth is updated until the end of 2018. The article focuses on this research gap.

## ***1.3. Theoretical framework on the relationship between foreign exchange management policy and macroeconomic indicators***

Exchange rate control and foreign exchange management policy are two very difficult issues, very closely related. Operating exchange rates can also be considered as a content in the foreign exchange management policy. In terms of open economy, international integration, all fluctuations in the international financial market have an immediate impact on exchange rate control and foreign exchange management. The control of exchange rates and foreign exchange management in order to achieve macroeconomic objectives in operating the Central Bank's monetary policy: controlling inflation, stabilizing the purchasing power of the domestic currency, against the dollar chemical, promoting economic growth. According to the summary of IMF, there are currently three main exchange rate control mechanisms: floating exchange rate mechanism, fixed exchange rate mechanism and regulated floating exchange rate mechanism. Depending on the development conditions of the economy, capacity and qualifications of the Central Bank, the development of the domestic financial market and the level of international integration, which the Central Bank implements mechanism proper exchange rate.

Similarly, the foreign exchange management mechanism is also based on the above factors and aims to implement monetary policy, Some current economies, such

as China, Vietnam, etc. are implementing mechanisms. control the regulated floating rate. Every day the State Bank of Vietnam announces the central exchange rate, commercial banks set their buying and selling rates with customers on the basis of central exchange rates. In addition, the State Bank combined with foreign currency trading in the market and regulates the amount of money to buy and sell foreign currencies through saving through open market operations tools (OMO). Researching on the mechanism of controlling exchange rates and managing foreign exchange to implement macroeconomic objectives in the current period of international economic integration of Vietnam is very necessary.

#### ***1.4. Discussion results***

Previously published articles and research projects that have their own assessments of the impact of exchange rate management and foreign exchange management all agree that there is a big impact.

Most of the opinions agreed with the stable exchange rate operating mechanism and effective dollarization, positively impacting commercial activities. However, no research has mentioned the impact of exchange rate management and foreign exchange management on a comprehensive basis of macroeconomic indicators and updated until the end of 2018 is the year Vietnam reached Many high achievements in foreign economic relations.

#### ***1.5. Objectives of the study***

It can be affirmed that since Vietnam officially became a WTO member, since the beginning of 2007, Vietnam's economy has been deeply integrated with the regional and international economic community. Because Vietnam prepares and prepares to implement CPTPP, EVFTA, and a series of other international economic commitments. But managing exchange rates and foreign exchange management, Vietnam is also under the greatest pressure by fluctuations in the international financial market, the record level of RMB depreciation against the USD and a variety of currencies Other strong.

The Chinese stock market has experienced the largest decline in the past 10 years, after the global financial crisis in October 2008 and other key stock markets also fluctuated. In this context, the State Bank of Vietnam (SBV) has actively managed flexible and effective exchange rates, closely controlled foreign exchange. USD / VND exchange rate fluctuates in accordance with the target set at the beginning of the year of each year in recent years, the position of Vietnam Dong continues to be strengthened, contributing to achieving other important goals of the economy. sacrifice.

It can be affirmed that, right after the global financial crisis, with the openness, the level of integration of the economy, the banking system, the issue of import and export, along with the trade balance, billion The price is most affected. In that context, the State Bank of Vietnam (SBV) has actively and flexibly managed the exchange rate, adapted to the actual situation, and combined with strict management of foreign currencies, gold management, minimizing the negative impacts, contributing to encouraging exports, realizing the goal of anti-dollarization and goldenization of the economy, contributing to macroeconomic stability.

## **2. Methods**

Through qualitative research methods, based on the sources and data published by the State Bank of Vietnam, MOF, the General Statistics Office, of commercial banks, the article focuses on analyzing and clarifying the above contents in the current period. , focus is on 2018, giving some recommendations.

## **3. Results**

### ***3.1. Overview of Exchange rate movements***

In almost all developed economies, central banks implement a floating exchange rate regime and only intervene when needed to implement the objectives of macroeconomic and monetary policy management. However, for developing economies, exchange rate management is considered as a whole art.

In Vietnam, in spite of various viewpoints in recent years, particularly since 2012 in which many scientists recommended a slight devaluation of VND to stimulate exports, the SBV of Vietnam (hereinafter referred to as the SBV) have been consistent in the management of relatively stable exchange rate to contribute to the successful achievement of many macroeconomic objectives.

While the USD/VND exchange rate observed significant fluctuations during 2008-2010, these fluctuations declined from 2011 onwards and in seven recent years from 2012-2018 as well as in the first months of 2019, the rate became quite stable in all three markets: parallel market, interbank market and exchange rates between commercial banks and customers. The stability of the exchange rate together with the gold market stabilization has strengthened the public confidence in VND.

According to the statistics publicized by the GSO, while in 2008, 2009 and 2010 the USD/VND exchange rate increased by 6,31%; 10,07% and 9,68% respectively, it increased by 2,2% in 2011 and decreased by 0,96% in 2012. It saw a slight increase by 1,09% and 0,59% in 2013; 0,56% in 2014; 0,9% in 2015; 1,1% in 2016; 1,2% in 2017; 1,29% in 2018 and 0.2% in the first 3 months of 2019 respectively. *GSO (2012-2018)*

### ***3.2. Multidimensional impacts on macroeconomic objectives of current foreign currency management policy***

The Forex market is basically stable; the commercial bank system's foreign currency liquidity has improved significantly compared to that in several recent years.

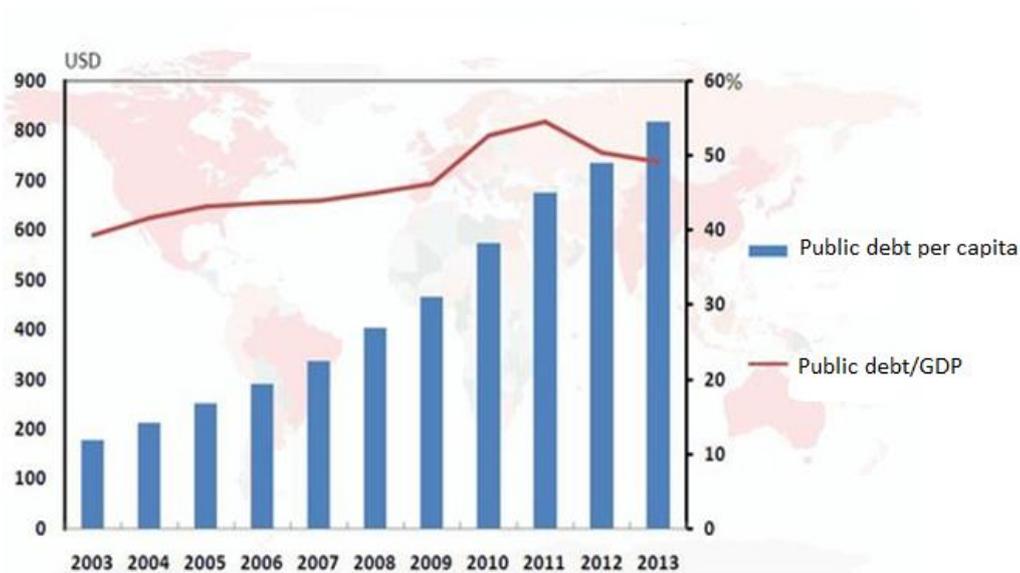
That result should be considered in the context that there are a number of opinions that the stable exchange rate maintained by the SBV means an overvaluation of VND, making the value of VND increase significantly compared to the USD when domestic inflation maintains at high levels for many years and others Asian currencies depreciate sharply against the USD. Many stated that a VND devaluation is needed to encourage exports given high inflation – 18.13% in 2011, 6.81% in 2012; 6.04% in 2013; 4.09% in 2014; 0.65% in 2015; 4.74% in 2016; 3.53% in 2017; 3.54% in 2018 and 0.15% in the first 3 months of 2019 respectively. *GSO (2012-2018)*. However, the exchange rate is almost unchanged resulting in a high VND appreciation, causing difficulties to imports. However, from the perspective of managing monetary policy, it is confirmed that the authorities have had clear viewpoints, clear messages about exchange rate management in the official market, showing a firm management stance against pressure of public opinion.

That lesson should also be considered frankly in the context that at the beginning of 2011, under public pressure and based on some theoretical calculations, the SBV proactively devaluated the VND by 9.3% against the USD. Specifically, from 11 February 2011 the SBV actively increased the interbank exchange rate by 9.3% and also narrowed the exchange rate trading band from  $\pm 3\%$  to  $\pm 1\%$ . *SBV (2012-2018)*. That adjustment had a significantly upward impact on the input costs of imported goods, raw materials, ancillary materials which affect costs and expenses, then selling prices and CPI accordingly. The stimulating impacts on exports, however, was vague when the export performance reflected a minor impacts from exchange rate, as it also depends on the competitiveness of Vietnam's exports compared with others partners, especially in terms of models, design, technology, forms, packaging, marketing and types of items, etc.. However, from the end of 2011 until now, the SBV has actively managed the exchange rate towards stability, which has positively impacted on both exports and imports leading to unwinding trade deficits which lasted for many years, on both the government and enterprises' foreign currency debts, as well as dollarization and other macroeconomic factors.

### ***Impact on Vietnam's public debt***

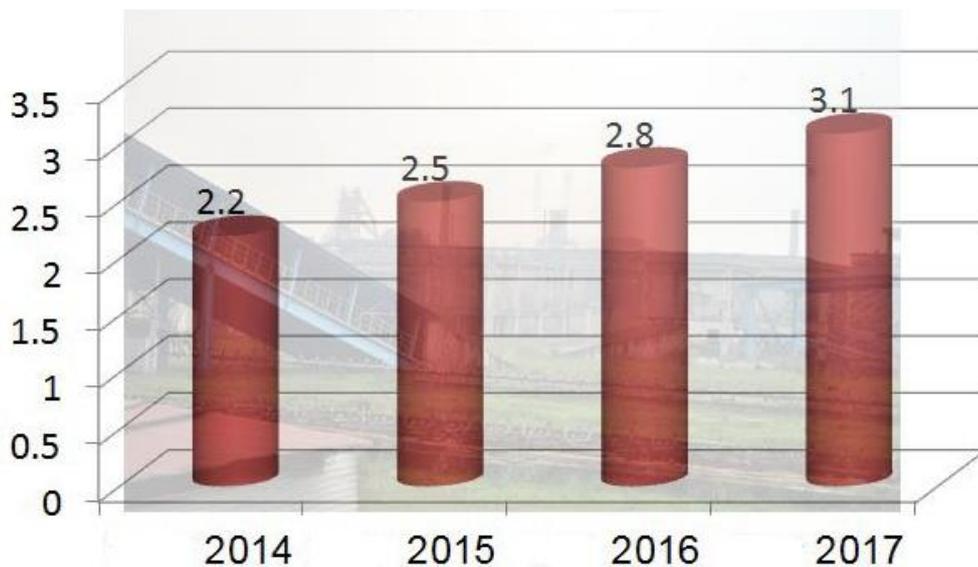
Vietnam's external debts including direct debts of the state budget and foreign currency debt of state owned general corporations and groups, such as: Vietnam Electricity, Vietnam National Oil and Gas Group, Vietnam Airlines, Vietnam Cement Industry Corporation,... will rise at the same rate as the rise of the exchange rate. In other words, a 3-5% exchange rate depreciation will lead to a corresponding increase in external debt .

**Chart 1: Public debt of Vietnam 2003-2013**



*(Source: MOF (2012-2018))*

**Chart 2: Public debt of Vietnam 2014-2017 (million billion VND)**



*(Source: MOF (2012-2018))*

### ***Impact on export and trade balance of Vietnam***

The stable exchange rate leads to a reduction in trade deficit, which has positive impacts on the foreign currency demand and supply as well as the exchange rate. While Vietnam's monetary policy requires a multi-objective implementation, decreasing trade deficit is not a direct target of the monetary policy but it is necessary to acknowledge that the sharp decrease in trade deficit over last 3 years is mainly attributed to exchange rate management, the foreign currency interest and the effective implementation of exchange rate and gold market management measures.

Before 2012, Vietnam's trade deficit was at high levels and increased continuously, especially in 2007, there was a nearly threefold increase compared to that in 2006 and reached \$14bn, rose to \$18bn in 2008 while remained at the level of \$10bn in others years and equivalent to between 12.7% and 29.2% compared to exports. *GSO (2012-2018)*

In 2011, in spite of implementing a lot of synchronized solutions under the direction of the government, Vietnam's trade deficit remained high and exercised high pressure on the exchange rate. In turn, the VND on a depreciation trend led to higher prices of imported goods and services when converted into VND, causing difficulties in achieving the planned target of controlling CPI fluctuations. However, Vietnam experienced a trade surplus of \$780.3 million in 2012, of more than \$900 million in 2013; \$2000 million in 2014. But Trade deficit of \$ 3540 million in 2015; however, continued trade surplus in recent years: \$2,56 in 2016; \$2,67bn in 2017; \$7,21bn in 2018 and \$1,0bn in the first 3 months of 2019. *GSO (2012-2018)*

### ***Accumulating the State International Reserves associated with sterilization of local currency amounts used to purchase US dollar:***

The stable exchange rate and sharply lower trade deficit need to be analyzed in the context of a strong accumulation in international reserves, from \$7bn to approximately \$35bn at present, while the potential international reserves of Vietnam is about \$45bn. Take into consideration the first 4 months of 2014 only, the SBV bought \$10bn, which means that the SBV injected VND 210 trillion into circulation via USD purchases. *SBV (2012-2018)*. The purchase of foreign currency goes along with the supply of the VND into circulation, however, it can lead to monetary inflation. This fact can be rationalized by synchronous coordination of monetary policy instruments centered at open market operations and sterilization of money supply through purchasing foreign currency.

### ***Dedollarization in the economy:***

The stable exchange rate has had a positive impact on the sentiment of the public and financial markets. The public and investors' strengthened confidence in the stability of the VND means that VND is valued. This reduces purchases of foreign currency as a way to hold and store wealth, and contributes to the decline of dollarization in the society.

While in 2006, the total foreign currency deposits over the total deposits of credit institutions was still at above 26%, this number was down to 19.5%, 14.6%, and 12% in 2011, 2012 and 2013 respectively, and was only 11% by the end of April 2014; about 10% since 2015 until now. *SBV (2012-2018)*

By the end of 2013, the ratio of total foreign currency deposits over the total liquidity continued to go down to about 12% compared to that of 15.8% in 2011 and 12.36% in 2012; state international reserves was doubled compared to that number by the end of 2013 and was 2.2 times from April 2014; 11% by the end of 2014. By the beginning of 2019, Vietnam's foreign currency reserve was about USD 63 billion. *SBV (2012-2018)*

Outstanding loans in foreign currency in 2006 was 30% of the credit institutions' credit to the economy while this ratio declined to 20% in 2011 and continued to fall to 17.5% in 2012, 14.2% in 2013 and 13% by the end of 2014; about 11%-12% since 2015 until now. *SBV (2012-2018)*

The above-mentioned exchange rate developments also minimized the foreign currency speculation on accounts of commercial banks in waiting for the increase of exchange rate, narrowed the spread between the parallel and the official exchange rate. A stable exchange rate and the SBV's clear direction facilitate commercial banks to implement their foreign currency trading strategies. But more importantly, it indicates that the clear objective of reducing the dollarization in the economy is being implemented effectively that empowers the position of the VND.

The exchange rate remained stable but exports still increased rather well. The volume of goods exports was \$114.6bn in 2012 and reached to \$132.2bn in 2013, increasing by 18.3% compared to that of 2012. Furthermore, the volume of imports was also circumscribed to \$131.3bn, increasing by 15.4% compared to that of 2012. The total volume of exports and imports of 2014 was nearly \$148 bn, increasing by 12.1%,. *GSO (2012-2018)*

In 2015, the total import-export turnover of the whole country reached US \$ 327.76 billion, up 10% compared to 2014, in which export goods reached 162.5 billion USD. Export turnover in 2016 is estimated at 175.9 billion USD, up 8.6% over

the previous year. In 2017 export turnover of the whole year reached 214.01 billion USD, up 21.2% (corresponding to an increase of over 37.44 billion USD) compared to 2016. In 2018 Export turnover reached 244.7 billion USD, an increase of 13.8% compared to 2017. Total export value in the first 2 months of 2019 reached USD 5.5 billion, down 1.6% compared to the same period in 2018. *GSO (2012-2018)*

The demand for foreign currency of enterprises was still met by the SBV through commercial banks, actively satisfied the necessary demand such as petroleum, medicine, veterinary medicine, plant protection chemicals, defense - security, foreign debt repayment, etc.

***The stable exchange rate helps gain the confidence of foreign investors on monetary stability and exchange rate policy of Vietnam.***

Regarding impacts on attracting the FDI into Vietnam, the registered FDI was \$13bn in 2012 and reached to \$21.6bn in 2013, increasing by 54.5% compared to 2012. The newly registered FDI of 2014 reached to \$20.230bn, \$22,76bn in 2015; \$24,3bn in 2016; \$36bn in 2017; \$35,46 in 2018; \$8,47 in the first 2 months of 2019. The disbursement of FDI is over \$10bn per year that significantly impacts on the demand for and supply of foreign currency in the domestic market and facilitates to stabilize the exchange rate. *GSO (2012-2018)*

The stable exchange rate combined with interest rate operation with a significant spread between the interest rates on deposits in local currency and deposits in foreign currency at commercial banks that contributes significantly to reducing the dollarization and attracting remittances into the country. The remittances are getting higher and higher over the years and sharply increase in recent years. The increased amount of foreign currency is due to the increase of the Vietnamese living and working abroad along with the upward trend of the number of exported labors over the years. Remittances register a sixfold increase during the early stage of market opening from 1990-1995, elevenfold increase in the second period from 1996-2006 and since 2007, remittances have been going up over the years and reached to \$11bn in 2013 and \$12bn of 2014 respectively. Statistics from the World Bank (WB) show that the amount of remittances to Vietnam in 2017 reached 13.81 billion USD, up 1.9 billion USD, equivalent to 16% compared to 2016; 2018 reached 16 billion USD. *SBV (2012-2018)*

The increase of FDI, exports and remittances results in the increase of foreign currency supply in the market that has a positive impact on the relationship between demand for and supply of foreign currency and the stabilization of exchange rate. A part from FDI, exports and remittances, the process of international economic

integration has also created opportunities to rise up the amount of foreign currency circulated in the economy as a result of the following causes:

*Firstly*, the number of foreign visitors to Vietnam has been increasing.

Since the opening of the economy, activities of tourism, trade and investment of Vietnam have developed. The number of foreign visitors to Vietnam, hence, has increased rapidly. Particularly, the number of foreign visitors was nearly double in 2004 from only 1.52 million arrivals in 1998 and reached to 7.572 million arrivals in 2013. In the 2014, the number of foreign visitors to Vietnam rose by 4% to 7.874.300 arrivals compared to that of the same period of 2013... Only in 2018 of Vietnam achieved impressive results, with the number of international visitors to our country reached a record 15.5 million people, up 19.9% compared to 2017. *GSO (2012-2018)*

The source of foreign currency received from the activities of tourism has a positive impact on foreign currency demand and supply and the stabilization of exchange rate. Because, if the average expenditure of each international visitor is \$800, then the total receipts of foreign currency from tourism should be nearly \$6bn per year. *GSO (2012-2018)*

*Secondly*, the capital inflows to Vietnam have increased, clearly shown by the sharply increased foreign indirect investment at \$6.243 M in 2007 that contributes significantly to the supply of foreign currency. However this kind of capital inflows is unstable and can be withdrawn quickly if the international markets fluctuate. This can be shown by the negative figures of this kind of capital inflows in 2008 (-\$578M) and 2009 (-\$71M). Moreover, in 2011, with the signal of the world economy recovery, this capital inflows came back to increase slightly and reached to \$1.06bn in 2011 and increased by 25% in 2012 compared to that of 2011, and was estimated to rise by 20% in 2013 compared to that of 2012 and \$1.0bn in 2014.... Overall, in 2018, total foreign indirect investment in Vietnam remained at a surplus of over USD 2.0 billion. *GSO (2012-2018)*

*Thirdly*, the number of foreigners to Vietnam for working, living and studying has been increasing that leads to high expenditure in foreign currency especially for renting houses and other services circumventing regulations that is difficult to control thoroughly. The number of foreign banks, insurance companies and economic organizations opening offices, branches, companies, and factories in Vietnam has increased more and more that results in the increased number of foreign experts and labors working in Vietnam.

## **4. Discussion and Conclusion**

### ***4.1. Lessons learned***

Success in exchange rate operation in 2012-2018 and in first months of 2019 owns to various factors, among which the most outstanding factor is the consistency in monetary policy operation of the SBV the SBV of Vietnam. Particularly, the SBV has actively operated and delivered the message of stabilizing the exchange rate for the whole year from the beginning of the year to prevent the situation of speculation with expectation of increasing the exchange rate; and been ready to intervene when the market slightly fluctuates due to the sentiment and rumors, for instance the fluctuations at the end of April 2013 and some other times in 2013, 2014 in order to strengthen the confidence for the market; maintained rather large spread between interest rates of deposits in USD and deposits in VND to gain the confidence of investors and people on the VND; determined to closely manage borrowing activities and domestic payments in foreign currency; determined to manage the gold market following the objectives.

### ***4.2. Forecasts for 2019 - 2025***

Pressure on adjusting the exchange rate and slightly depreciating the VND is significantly high from many sides, but it is predicted that the SBV of Vietnam will still maintain its objective of stabilizing the VND/USD exchange rate within a limit. It is also forecasted that the fluctuations of exchange rate (if any) for the whole year of 2019 - 2025 will not exceed 1-2% and this situation will be similar in 2012 - 2018. According to that, tools for monetary policy operation, including interest rates, reserve requirement, open market operations, policies and measures on managing foreign currency market have been also implemented by the SBV following this objective in an active, close but flexible manner to meet requirements of the practice and contribute to the improvement of the position of the VND and the decline of dollarization.

Vietnam is continuing to integrate widely and deeply into the region and the world, the global financial markets and the exchange rates of various currencies contain unexpected fluctuations that have impacts on the domestic foreign currency market. However, it is forecasted that remittances, FDI, volume of exports, and the attraction of international visitors to Vietnam will continue to rise up significantly that creates prerequisites for stabilizing the exchange rate. The National Foreign Reserves Fund continues to be strengthened to ensure the adequate level in accordance with the international practice provided by the IMF.

### ***4.3. Some recommendations***

Firstly, administering the exchange rate should continue to coordinate closely, but proactively and flexibly with other instruments in operating monetary policy, especially interest rates, compulsory reserves and open market operations. ; and other measures of monetary management and banking operations, especially the status of domestic listing and sales in foreign currencies, the status of transferring foreign currency, etc., has a roadmap to move to implement Indirect tools in operating when conditions are ripe.

Secondly, persistently manage the exchange rate stability and manage the gold market according to the set objectives with the synchronous coordination of monetary policy operating tools and state management of monetary and operating activities. bank; There is an earlier roadmap to pull the gold price in the domestic market with a narrower gap than the world gold price gap.

Thirdly, there needs to be close and coordinated coordination between monetary policy and other macroeconomic policies, directly trade policies and fiscal policies (issuing government bonds in foreign currencies, borrowing and repayment of foreign loans, foreign currency demand for strategic objectives, ...) in achieving the goal of stabilizing exchange rates, limiting trade deficit.

Fourthly, continue to have policies to encourage the export of foreign workers, encouraging international visitors to Vietnam; strengthening control of foreign exchange flows, preventing smuggling, tax evasion and transfer pricing of foreign investment projects in Vietnam, VAT refund status.

Fifthly, to strengthen the inspection of private gold and silver goods illegally exchanging foreign currency, transferring money abroad illegally; Foreign currency exchange agents of commercial banks do not report or cheat in foreign currency exchange.

Sixthly, strengthening propaganda and explaining the policy of administering the exchange rate associated with implementing the objectives of monetary policy management, monetary stability, macroeconomic stability. This propagation needs to be diversified in form and method, implemented in depth, strengthening the exchange of both theory and practice in a scientific way.

Seventh, continue to have more coordinated, more proactive and more coherent coordination between the SBV and the Ministry of Finance in regulating monetary policy and financial policy, in relation to handling foreign currency issues of the state budget as well as other related issues.

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# MANAGEMENT OF MONETARY POLICY IMPLEMENTATION MACROECONOMIC GOALS IN VIETNAM NOW

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## **Abstract**

*In recent years and most recently in 2018, operating the monetary policy of the State Bank of Vietnam continues to achieve important successes, realizing the main macroeconomic goals of the economy: promoting high economic growth, controlling inflation at a low level, stabilizing the exchange rate, combating the dollarization of the economy, contributing to the surplus of trade balance, increasing the national foreign exchange reserve fund. Through the secondary data of 2018, the article focuses on analyzing, evaluating and clarifying the results of monetary policy management in the past time, recommending solutions in the coming time.*

**Keywords:** *management, monetary policy, macroeconomic goals*

## **1. Introduction**

Monetary policy is one of the leading macroeconomic policies governed by the Central Bank. Depending on each country, the Central Bank has different names, such as: FED in the US, MAS - Singapore Monetary Authority, PoBC - People's Bank of China, BOJ - Bank of Japan, State Bank - SBV in Vietnam, ...

Monetary policy is operated in close coordination with other policies, especially fiscal policies, investment policies, trade policies, etc. to successfully implement the common goals of the economy. sacrifice. Through the management of monetary policy instruments: interest rates, exchange rates, compulsory reserves, open markets (OMO), refinancing loans, credit lines, etc. The Central Bank does the work. controlling total payment facilities, implementing intermediate goals: controlling money blocks: M1, M2 and M3, ... in circulation, in order to achieve the highest objectives of monetary policy, that is control inflation, boosting economic growth, creating new jobs, contributing to reducing unemployment. The total means of payment, the annual increase in the amount of money in circulation depend on the expected economic growth, the level of inflation, the cash flow, the proportion of non-cash payments in the economy.

Depending on the level of development of the economy, the level of integration of the financial system, which the instruments of monetary policy are directed or indirectly, or combined indirectly and directly. In the process of international economic integration today, especially for emerging economies like Vietnam, the volatility of the world financial market has a great impact on operating monetary policy, especially on exchange rates, ...

Due to the characteristics of the Vietnamese economy and the development level of Vietnam's credit institution system, currently in the management of monetary policy, the State Bank of Vietnam combines both direct management and indirectly operating monetary policy instruments. The State Bank announced various types of operating interest rates, lending interest rate ceiling for priority subjects, announced central exchange rates, announced credit limits, and required reserve ratios. In recent years, practice has recorded great success in operating monetary policy (monetary policy) of the State Bank of Vietnam (SBV), controlling inflation, supporting sustainable economic growth, contribute to solving other social security issues according to the Resolution of the National Assembly and the Government's objectives. The most recent results are 2018, creating a premise for the SBV to draw lessons learned and continue to operate monetary policy successfully in 2019 and subsequent years.

So far there are many research projects both at home and abroad on the theory of monetary policy management of the Central Bank, including the scientific research topic of the State Bank of Vietnam, the research topic. School level and doctoral thesis at Banking Academy, Academy of Finance, National Economics University .... Posts in specialized journals and economic magazines, some monographs. Studies often focus on the following 7 main areas: i) The role of the central bank in operating monetary policy; ii) Operating monetary policy to implement inflation targeting, or inflation targeting; iii) Central Bank directly or indirectly operates monetary policy instruments; iv) In-depth study of a specific monetary policy tool; v) Coordinate operating monetary policy instruments; vi) Coordinate operating monetary policies and fiscal policies; vi) Monetary policy transmission mechanism vii) Experience of operating monetary policies of emerging economies. There are also a number of other studies of IMF experts on operating monetary policy to implement the macroeconomic goals of some card-specific economies and economies in transition.

Within a workshop discussion, the author cannot give a complete and detailed overview of theoretical studies and essays that do not study theory.

The published studies of operating monetary policy in Vietnam have also been focused and focused on the seven areas mentioned above, studying different stages of the process of economic renewal and operational innovation. Bank. However, in

particular, studying and operating monetary policy associated with the international and domestic macroeconomic environment of 2018, the author has not seen any work so far: the article on the Journal of Banks and Magazines Finance, Journal of Currency Finance, Journal of Banking Technology, Journal of Banking Science and Training ... or scientific conferences. It can be affirmed, this is the first study of the author on monetary policy management of the State Bank of Vietnam in 2018.

## **2. Method**

The paper does not use quantitative methods, conduct surveys, investigate, interview, or build mathematical models, determine the impact level of factors such as flavor, functions and variables. Through secondary data sources, official published sources of data, using qualitative research methods and articles focus on analyzing macroeconomic developments at home and abroad, affecting the monetary policy operation. In the current period of extensive international economic integration, the administration of monetary policy instruments to implement macroeconomic objectives, gives a number of recommendations and forecasts.

## **3. Results:**

### ***3.1. Analysis of the environment affects the control of monetary policy management***

#### ***3.1.1. Macroeconomic developments in the world affect monetary policy management***

Modern economic theory has shown that, in the context of current economic integration, operating monetary policy of open economies is greatly affected by macroeconomic developments in the world.

Therefore, when developing monetary policy and in the process of operating monetary policy, it is necessary to analyze, forecast and take the initiative, flexible before the fluctuations of the international financial market. In 2018, operating monetary policy of the State Bank of Vietnam continues to be influenced by macroeconomic changes at home and abroad. The biggest event is the US and Chinese trade war affecting the global financial market. Many large stock market (stock market) declined and fluctuated strongly. The Chinese stock index plunged to the highest level in the last 10 years, the US stock market witnessed 3 sell-offs, the key stock index plunged. The capital withdrawal trend of foreign indirect investors in the stock market of emerging economies is very strong. The exchange rate between the major foreign currencies fluctuated, the Yuan decreased by nearly 8%, the largest level in the last 4 years. Especially Brexit event from preparation, negotiation process to implement Brexit at the end of 2016 up to now. Crude oil prices in the world market were low in 2016 and the first nine months of 2017, slightly increased in the last

months of 2017, rising quite high in the 10 months of 2018. Oil prices in the trading session on May 18 / 2018 increased to over 80 USD / barrel, the highest level since November 2014. *NFSC (2018)*

However, from the beginning of November 2018 to the end of 2018, the price of crude oil fell sharply. The dollar depreciated on the international financial market in 2017, from the beginning of 2018, the price increased strongly. *NFSC (2018)*

Other fluctuations in the world financial market due to the impact of US sanctions on Iran. Movements of trade wars between the US - China and Europe. Multidimensional impacts of US elections from early 2017 to 2018. Relations between the US - South Korea and Korea, as well as US decisions, vary in Qatar's diplomatic relations and a Middle Eastern countries like Israel. Another major impact is that FED raised interest rates twice in 2017 and continued to raise interest rates 4 times in 2018. The first time took place on March 22, 2018, FED raised interest rates from 1.5 to 1.75% / year. The second time took place on 14/6/2018, FED raised the interest rate from 1.75% to 2% / year. The third time took place on September 26, 2018, FED raised the interest rate from 2% to 2.25%. The fourth time, taking place on December 19, 2018, the Fed decided to continue raising the basic lending rate to 2.25 to 2.5% / year. As of the end of December 2018, FED has implemented 9 times of interest rate increase since the end of 2015. These developments have strongly affected many commodities in the commodity market and large stock markets in the world. At the time of FED's interest rate increase in 2018, the US stock market plunged strongly, greatly affecting the Vietnam stock market and the domestic macro-economy, greatly impacting on operating monetary policy and restructuring Vietnamese credit institutions in the past year. *NFSC (2018)*

### *3.1.2. Domestic macroeconomic developments affect the management of monetary policy*

In theory as well as in practice, domestic macroeconomic developments also have a great impact on the management of the Central Bank's monetary policy. The real estate market in 2018 continued to grow but also continued to be controlled by many measures, including the important reason that is in the management of monetary policy, the State Bank restricted credit flowing into the field. this. Vietnam's stock market has the highest growth rate in the region, especially JSCBs shares have a very high increase in the first months of the year. On the morning of April 9, 2018, the VN-Index reached 1,204 points at the end of the session thanks to real estate, banking and securities stocks. After that, the stock market was strongly adjusted, many times at the end of August 2018, still below 900 points, by the end of December 2018, it was reduced to around 880 points. Stock prices of

commercial banks and securities companies were strongly adjusted, down by 20–30% compared to the peak time. *SSC (2018)*

Natural disasters occur in many places and at different times, causing serious damage to agricultural production and people's lives. Prices of many key export agricultural products of Vietnam decreased and consumed erratically. The domestic retail price of petrol and oil increased highly in the first 10 months of 2018 and decreased quite significantly in December 2018. Health service prices are also adjusted to increase. Due to the strong influence of the Yuan devaluation, especially at the beginning of the third quarter and the beginning of the fourth quarter of 2018, put pressure on Vietnam Dong. Due to the impact of the regional stock market and the Vietnamese stock market, the sources of foreign currency capital withdrawn and transferred into our country are also abnormal, affecting the supply and demand of foreign currencies and exchange rates in some countries. time. The plan of divesting and selling bad debts of many Vietnamese commercial banks is affected. *SSC (2018)*

### ***3.2. Analyze the management of monetary policy to implement key macroeconomic objectives***

In the general context of the above mentioned domestic and international economic developments, implementing the Resolution of the National Assembly and the Government on socio-economic development solutions in 2018, the State Bank has implemented synchronous solutions. legal management, continue to actively manage flexible monetary policy. In the process of operating monetary policy, the State Bank has promptly met the liquidity of credit institutions providing credit capital effectively for the economy,

In 2018, the monetary policy was actively and flexibly operated by the State Bank of Vietnam, coordinating well with fiscal policies and other macroeconomic policies, implementing macroeconomic objectives according to the Resolution of National Assembly and Government. Curbed inflation, stable currency, the purchasing power of Vietnam Dong continues to be strengthened, the result of anti-dollarization of the economy is maintained; promote sustainable economic growth at higher levels in recent years, create more new jobs for workers, reduce poverty in multidimensional households, and contribute to solving some other social security issues.

In order to achieve the above results, the SBV governed the monetary policy towards slightly reducing the local currency lending interest rate, with an average decrease of about 0.5% compared to 2017 for priority areas. support businesses to reduce production and business costs, especially those that need encouragement under the direction of the Government, such as agriculture - rural areas, high-tech

agriculture, clean agriculture, and export export, small and medium enterprises, supporting industries, ... *SBV (2018)*

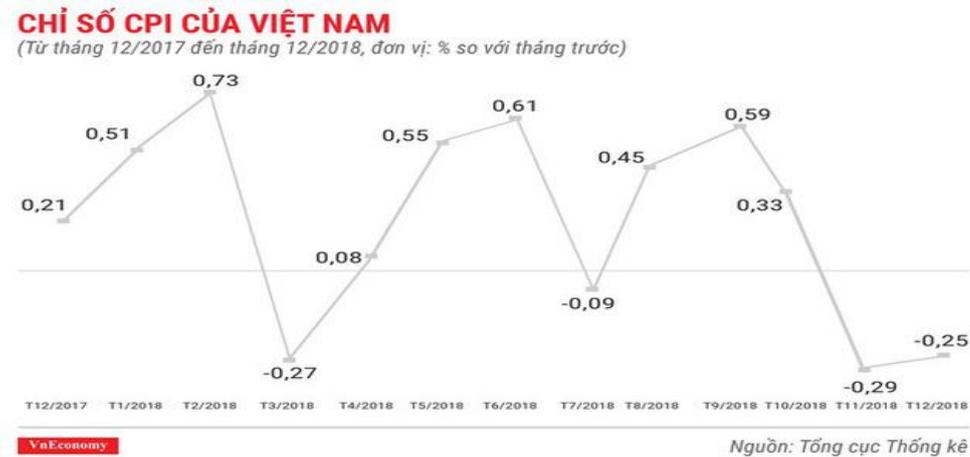
In the context of devaluation of Yuan, USD appreciation, some other major currencies fluctuated, but the State Bank still actively, flexibly operated, stabilized the exchange rate and foreign currency market, in line with the orientation Since the beginning of the year, encouraging exports and restricting imports, contributing to achieving the highest trade surplus, ever. Especially with active and flexible buying and selling foreign currencies, meeting the demand for foreign currency liquidity for the market, the need to withdraw capital and transfer capital into Vietnam of indirect investors, investors The local currency of commercial banks, the State Bank still ensured to maintain the highest foreign currency fund ever. *SBV (2018)*

**3.3. Implement the highest objectives in operating monetary policy**

**3.3.1. Implementing the target of inflation control**

Operating monetary policy, with increasing total payment facilities according to economic development needs, credit growth for customers, ... associated with operating interest rates, exchange rates, open market, ... has a direct impact on inflation. But steadfastly according to the set objectives and closely and effectively coordinating the monetary policy management tools, in 2018, Vietnam's inflation is controlled at a low level. According to the General Statistics Office, the average CPI in 2018 increased by 3.54% compared to the average of 2017, under the target of the National Assembly. CPI in December 2018 increased 2.98% compared to December 2017, the average monthly increase of 0.25%. Basic inflation in December 2018 increased 0.09% over the previous month and increased 1.7% compared to the same period last year. The average basic inflation in 2018 increased by 1.48% compared to the average of 2017. *GSO (2018)*

**Figure 1: Vietnam's CPI 2017-2018 (% per month)**



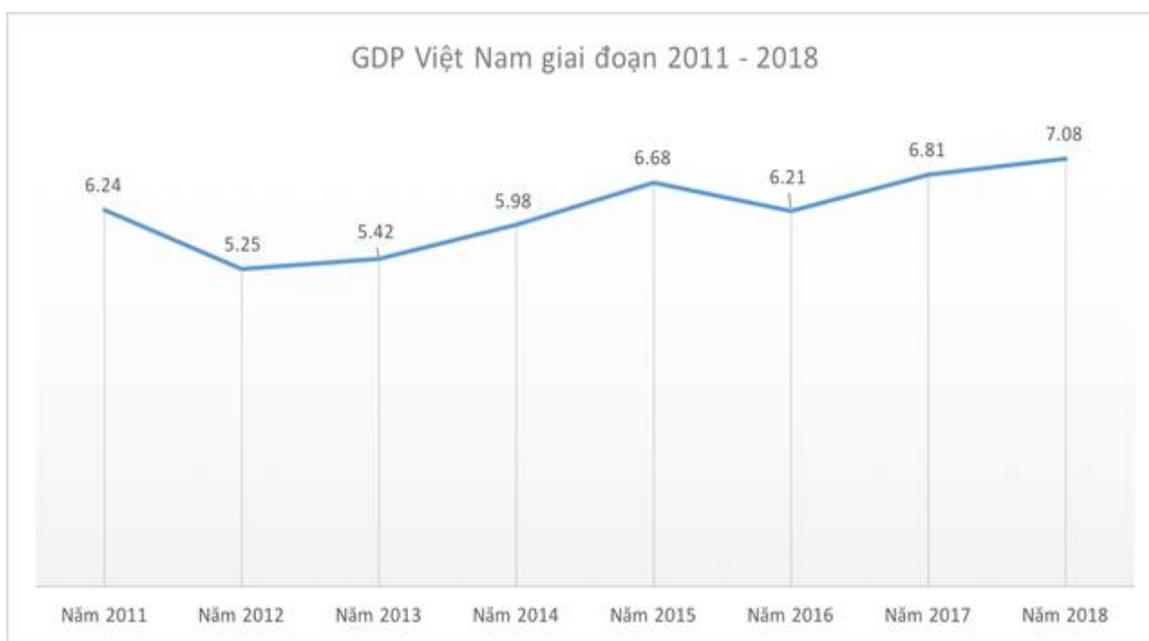
Source: GSO (2018)

Gold price index in December 2018 increased 0.41% compared to the previous month; decreased 0.41% compared to the same period in 2017; the average of 2018 increased by 2.36% compared to 2017. The US dollar price index in December 2018 decreased by 0.07% over the previous month and increased by 2.69% over the same period in 2017; The average of 2018 increased by 1.29% compared to 2017. *GSO (2018)*

### 3.3.2. Implementing the goal of promoting economic growth

Currently in Vietnam, bank credit capital invested for economic development accounts for the largest proportion. In 2018, operating monetary policy of the State Bank supported sustainable economic development, high and relatively comprehensive. In 2018, Vietnam completed all 12 proposed targets, of which the economic growth reached 7.08%, the highest level in nearly a decade, exceeding the 6.7% target set out at the beginning. year. This is the highest increase in the past 8 years, from 2011 onwards and is the year marking economic growth not thanks to credit growth, thanks to the main motivation is manufacturing and processing industry and service industry; and service industry; Agricultural, forestry and aquatic products grew well. *GSO (2018)*

**Figure 2: Vietnam's GDP 2011-2018**



*Source: GSO (2018)*

Specific analysis of the impact of monetary policy operating on the specific development of sectors and regions in the economy can be seen, in the general growth of the whole economy of 2018, the agricultural and forestry sector, seafood increased by 3.76%, contributing 8.7% to the overall growth; industry and construction sector

increased by 8.85%, contributing 48.6%; service sector increased 7.03%, contributing 42.7%. The agriculture, forestry and fishery sector achieved the highest growth rate in the period of 2012-2018, confirming the trend of changing the economic structure of the economy, which has brought into full play. *GSO (2018)*

### *3.3.3. Implementing some other macroeconomic targets*

Successful administration of the monetary policy in 2018 of the State Bank also contributed to the implementation of some other macroeconomic indicators of the country. Many other records have been established, such as foreign exchange reserves, export turnover, trade surplus, international tourist attraction, labor export and overseas remittance, etc. Notably, despite high GDP growth In the context of many unusual developments, Vietnam still maintained macroeconomic stability with the retention of CPI target, reduced budget deficit, stable stock market, tightly controlled public debt. close. *GSO (2018)*

The ratio of public debt to GDP in 2018 decreased and reached 61.4% (2017: 62.6%; 2016: 63.6%) due to positive economic growth. *GSO (2018)*

In addition, the country's foreign debt / GDP increased from 48.9% in 2017 to 49.7% in the year, mainly due to the increase in self-borrowing and self-repayment of enterprises and credit institutions. The percentage of poor households with multi-dimensional approach in 2018 was 6.8%, down 1.1 percentage points compared to 2017. The majority of new jobs for employees were created with improved incomes. *GSO (2018)*

### *3.3.4. Promote a trade balance surplus to reach a record level*

According to the General Statistics Office, the trade balance of 2018 continued to trade surplus of 7.2 billion USD, of which the domestic economic sector saw a trade deficit of 25.6 billion USD; the foreign invested sector (including crude oil) saw a trade surplus of 32.8 billion USD. In 2018, the domestic economic sector changed positively when reaching a higher growth rate of export turnover than the foreign-invested sector with the proportion of total export turnover increased compared to 2017. Personnel The overall balance of payments was at a high level thanks to: (i) the trade balance of trade surplus at a record high; (ii) Financial balance continued to be surplus due to continued disbursement of FDI, indirect investment capital reached approximately USD 2 billion, remittances grew by more than 10%. (iii) The errors and errors are sharply reduced compared to 2017. As a result, the SBV has added foreign exchange reserves to a record high (about 12 weeks of imports). *GSO (2018)*

#### **4. Implement intermediate goals in operating monetary policy**

##### ***4.1. Control interest rates on the currency market and control exchange rates to improve the purchasing power of Vietnam Dong***

Interest rates remain low. The lending interest rate for domestic currency of state-owned commercial banks (commercial banks) for the priority sectors decreased by 0.5% compared to 2017. The State Bank has lowered the interest rate to buy OMO from 5% / year. down to 4.75% / year to contribute to reducing capital costs for credit institutions. The interest rate level of credit institutions in 2018 is basically stable, lending interest rates are about 6-9% / year for short, medium and long terms, about 9-11% / year. The central exchange rate of the central bank increased by 1.4% compared to the beginning of the year, in line with the orientation set at the beginning of the year, stabilizing the foreign currency market and preventing the dollarization of the economy. The exchange rate of commercial banks with customers increased by 2.3% and the free market exchange rate increased by 2.8% compared to the beginning of the year. The main reason for the increase in the domestic exchange rate is: (i) considering the international factor, the USD index increased by about 5% compared to the beginning of the year, up 9% compared to the bottom in February 2018; (ii) Considering the domestic fundamentals, the exchange rate is still under pressure from inflation, but it is positively supported by the balance of supply and demand of foreign currency. *SBV (2018)*

The flexibility of exchange rate management is evident through the decision of the State Bank to sell foreign currency term, but it is allowed to cancel the contract. This move The SBV wants to aim at reducing the risk of exchange rate fluctuations and speculation, while helping the market have a basis to predict exchange rates, interest rates as well as foreign currency supply and demand at the year-end. This is also an anchor for the SBV to plan macro balances, stabilize exchange rates and interest rates on the interbank market. Besides, other factors such as stable macroeconomy, controlled inflation helped investors, businesses, and people believe in VND, which also supported the stability of exchange rates.

##### ***4.2. Take control of monetary and credit goals***

Credit growth of the economy reached 14% (same period last year increased by 16.96%). Commercial bank credit helps solve difficulties for business and production activities of enterprises, especially the private sector. Credit growth of the whole year 2018 was strictly controlled, reaching 14%, lower than the expected 17% from the beginning of the year and lower than the 17.18% of 2017. Of which agricultural credit, forestry and aquatic products increased 8.88%, proportion of

9.56%; industry and construction increased by 12.1%, proportion 31%; trade and service sector increased by 15.9%, proportion of 59.4%. *SBV (2018)*

Credit capital is prioritized to focus on sectors that need to be encouraged according to the Government's policy, such as production, processing and manufacturing, especially in agriculture and rural areas, and high-tech agriculture, clean agricultural production, exports, supporting industries, small and medium enterprises. Credit outstanding in the real estate sector accounts for about 16.6% of the total credit of the whole system. Outstanding loans for life service accounts for 18.8% of total outstanding loans of the credit system. This is a relatively appropriate rate, ensuring the healthy development and liquidity of the real estate market, meeting the demand of buying real houses of people, limiting speculation and limiting capital flows into areas of high risk. *SBV (2018)*

The amount of foreign exchange reserves accumulated was at a record high, reaching over USD 63 billion in 2018, corresponding to about 12 weeks of imports, showing that the confidence of the Government and the SBV has been reinforced and supports other macroeconomic policies in attracting foreign investment, improving their ability to cope with economic shocks. Operational quality of credit institutions continues to be strengthened. *SBV (2018)*

#### ***4.3. Operating monetary policy associated with controlling credit institution restructuring***

Besides maintaining macroeconomic stability, the restructuring of the banking system and handling bad debts have also been actively implemented and effectively supported for the successful management of the monetary policy of the State Bank of Vietnam. In 2018, the whole banking sector drastically implemented the Project No. 1058 / QD-TTg, dated July 19, 2017 of the Prime Minister, decided to approve the scheme "Restructuring the system of groups. credit institutions associated with dealing with bad debts in the period of 2016 - 2020", Resolution 42/2017 / QH14 of the National Assembly on piloting the handling of bad debts of credit institutions. SBV has continued to build and perfect policies, frameworks and mechanisms to help accelerate the process of restructuring and handling bad debts. A series of legal documents, frameworks to improve safety standards in banking operations have been issued, in accordance with international practices, to help improve governance and management, and to manage risk according to criteria. Basle II standard and initially welcomed by the banking system. *SBV (2018)*

In 2018, the system of Vietnamese credit institutions continued to develop to a new height, strengthening the number of advanced quality and prestige in the financial market. Commercial banks become the largest capital mobilization channel

and provide the highest credit capital in the economy, being a key member in the bidding to buy State Treasury Bills, Government Bonds and supply of Convenient and modern banking services for the economy. Up to now, there have been 16 joint stock commercial banks listed on Vietnam's stock market. Many major financial institutions in the world continue to maintain and promote to become strategic shareholders of Vietnamese commercial banks. International credit of many Vietnamese commercial banks is raised. *SBV (2018)*

#### ***4.4. Operating monetary policy associated with controlling the development of the stock market***

Activities of the stock market have a close relationship and great impact on operating monetary policy and banking activities. With the operation of interest rates, exchange rates, open markets, credit, facilitate the operation of securities companies, investment funds, listed businesses, foreign investors, ... operating monetary policy contributes to boosting Vietnam's stock market with a certain new development in 2018. Market capitalization value reached VND 3.98 million, up 13.5% compared to the end of 2017, equivalent to 79.6% of GDP, exceeding the target set for 2020. Market liquidity improved strongly with the average trading value of shares and fund certificates reached nearly VND 6,603 billion / session, up 30% compared to with the average of 2017. Foreign investors 'trading activities were positive, the proportion of foreign investors' transactions accounted for 16% of the total transaction value. stock market, higher than the 13% of 2017. The number of investors' accounts continued to increase to 2.17 million accounts, an increase of 12.8% compared to the end of 2017 (in which accounts Foreign investors increased by 24.4%. In 2018, the bond market continued to improve positively in the direction of extending the average maturity term and the remaining term of VGBs while the issuance interest rate decreased, contributing to restructuring the Government debt portfolio. in a sustainable way. Total average trading value reached over VND 8,827 billion / session. *SBV (2018)*

It is forecasted that in 2019 and 2020, Fed will continue to raise interest rates 2-3 times more, by the end of 2020, it will bring the basic interest rate to 3.5%. Trade tension between the US and China continues. Crude oil prices in the international market continue to be unpredictable but in a downward trend and at a low level. The political and diplomatic tensions in some areas and between some major economies are also complicated. In the domestic market, abnormal natural disasters and developments in agricultural markets are also major concerns. Many major stock markets around the world and exchange rates of other major currencies will also be complicated. Natural disasters in many countries and in the country are also very difficult to predict. Trade protectionism is still at a great

level. This situation has a great influence on the monetary policy management of the State Bank of Vietnam in 2019.

### **Discussion and Conclusion**

According to Resolution No. 01 / NQ-CP, on January 1, 2019, the Government requested a solution to increase capital for state-owned commercial banks and state-owned commercial banks to take a dominant share. Striving to bring the internal bad debt ratio to below 2% and the ratio of bad debt and potential debt to bad debt (including bad debt, bad debt sold to VAMC has not been processed yet and the restructured debt repayment period has become bad debt) less than 5%. Striving to increase GDP by 6.8%, controlling CPI growth rate below 4%. In addition, the Government mandates that it is necessary to create fundamental changes in banking governance, operational efficiency and safety. Focusing on effectively handling weak credit institutions and bad debts according to market principles, without direct support from the state budget. Strengthen inspection, supervision, strictly handle violations in the operation of credit institutions and money markets. Promote the application of Basel II safety standards. Promote non-cash payment; piloting new payment models, financial technology enterprises (fintech), researching electronic wallet recharge not through bank accounts and applying new technologies, innovative innovation solutions create into the banking sector. In implementing the Government Resolution and the general orientation of the industry, the State Bank of Vietnam continues to manage actively, flexibly and closely monetary policy in coordination with other macroeconomic policies, implementing the pepper under the Resolution of the National Assembly and the Government. *SBV (2018)*

Commercial banks continue to boost lending to priority areas, areas that need encouragement under the direction of the Government. Especially commercial banks continue to actively expand rural agricultural credit under Decree 55/2015 / ND-CP; Decree 116/2018 / ND-CP, dated 7 September 2018, amending and supplementing Decree 55/2015 / ND-CP on credit policies for agricultural and rural development; loan program to encourage the development of high-tech agriculture and clean agriculture according to the Resolution 30 / NQ-CP dated March 7, 2017 of the Government. In addition, credit capital of Vietnam Bank for Social Policies and People's Credit Fund also contributes to poverty reduction and social development, creating impetus for sustainable poverty reduction. SBV and commercial banks continue to strictly control credit into potential risk areas such as real estate, securities ...; Enhance risk management for BOT, BT traffic projects, consumer credit. At the

same time, synchronously implement other measures, control the internal NPL ratio at less than 2% according to Resolution No. 01 / NQ-CP. *SBV (2018)*

### *Some recommendations*

Firstly, the State Bank should steadfastly aim at operating monetary policy as at present, creating conditions for sustainable development of the economy. The SBV and the Ministry of Finance work more closely in the management of monetary policy and monetary policy, in the issuance of Government bonds, foreign currency balances for national strategic objectives, buying foreign currencies from the revenues of crude oil exports of the state budget. However, the State Bank should have a roadmap to switch to indirectly operating monetary policy instruments instead of current direct operating tools.

Secondly, the Government and the Ministry of Finance and the State Securities Commission need other policies and measures to sustainably develop the stock market but cannot rely on monetary policy. Public opinion, businesses do not put pressure on the management of monetary policy of the State Bank in terms of credit limit, the expansion of exchange rates, interest rates,... SBV and the Ministry of Finance, need to promote commercial banks listed on the stock market. and transparent information disclosure, contributing to the implementation of more effective monetary policy of the State Bank.

Thirdly, credit growth has been slower than the same period in many years but GDP growth is higher, in fact, enterprises have diversified capital mobilization channels such as issuing shares and issuing bonds. The stock market has become an important capital mobilization channel of enterprises, reducing the pressure on bank credit. This is an advantage, but also poses new challenges for commercial banks, for operating monetary policy, need to be proactively forecasted by the SBV and have effective handling and operating directions in the coming time. The State Bank should coordinate with the Ministry of Finance to ensure the healthy development of bond issuance channels, capital mobilization stocks of enterprises, reduce the balance of State Treasury deposits at commercial banks, have more reasonable plans in bond issuance, bond disbursement and bond interest rates.

Fourthly, the flow of foreign indirect investment into our country is very large and withdrawing from the Vietnamese economy is also unusual depending on international economic developments and macroeconomic developments of Vietnam, also such as stock market movements and strategies of foreign investors. However, in regulating exchange rates, in using open market operations to neutralize the money supply to buy foreign currencies, the State Bank of Vietnam needs to be steadfast in operating like the last time and at the same time proactively forecast the next time

when IPO of large-scale enterprises, the divestment of the state in equitized enterprises, capital increase of enterprises,... will continue to take place on a larger scale, so it needs to be more active in managing the instruments of monetary policy. The State Bank needs to complete tools and methods of macroeconomic forecast, which forecast indirect investment capital flows into Vietnam stock market. The SBV and the Ministry of Finance need to inform and exchange regularly about the plan of divestment, increase the foreign investors' ownership rate in equitized state-owned enterprises, including state-owned commercial banks, increase capital owned from the annual dividend payment source of equitized commercial banks.

Fifthly, in the management of the State's monetary policy, there are three tools that most clearly affect the business activities of enterprises, to each macroeconomic school, namely interest rates, exchange rates and credit limits. These tools have a direct impact on sustainable business performance of enterprises, select investment projects, improve the competitiveness of enterprises in the trend of integration, towards enterprises choosing capital mobilization channels. Different investment. Therefore, the State Bank should continue to improve and innovate these three tools in the direction of gradually shifting to indirect management, having a roadmap for early elimination of credit limits, the growth of credit of commercial banks should be based on the reasonable capital demand of the economy, efficient investment capital of enterprises; At the same time, there is a roadmap for early withdrawal of lending interest rate limits for priority subjects.

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# CONCEPTUALIZING PREDICTIVE METHODOLOGY IN AUTOMOTIVE INDUSTRY: IMPLICATION ON BUSINESS OPERATIONS AND STRATEGIES

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## **Abstract**

*Due to an on-going increase in competition level of automotive industry in Vietnam and the Vietnamese ambition to localize the automotive industry, quality issues of assemblies have become a vital concern. Understanding quality failures may support business operations, avoid or reduce mistakes and bring forward a chance of developing high-quality assemblies, that is a unique selling point for a motor company. It is challenging to accurately identify and model the quality issues of assemblies in an assembly line. So, this study intends to develop a conceptualization for businesses, using data mining analysis and regression method, to build a predictive model for engine assembly failures.*

*Initially, the paper reviews literature on different aspects of quality data modelling. Typical techniques and variables are briefly mentioned. Subsequently, data mining with clustering methods and generalized linear regression model is conducted to analyse the current pattern of the dataset and introduce a potential modelling system for the future behaviour of quality issues. To validate the model quality, the model is tested with both training and testing data. These datasets are generated from Ford assembly line in a 6-month period focusing mostly on failure occurrence.*

*The predictive power of the proposed model is supported in both data sets. Results suggest that Station, Model, Feature and Operation are four significant control parameters as they possess a more noticeable predictive power in comparison to time factor. To generalize the study area, other potential modelling methods are also implied for future research and other scenarios.*

**Keywords:** *Automotive industry, data mining, predictive model, quality issues*

# **1. Introduction**

## ***1.1. Motivation***

Automotive industry is a fast-growing, potential sector and one of the most important contributors to Vietnamese national economic growth. However, automotive industry in Vietnam has mainly relied on knock-down kit production in a self-assembly structure i.e. models are domestically built with almost exclusively foreign-imported assemblies. One of the main reasons is that the quality of domestically manufactured assemblies has always been questioned. Moreover, due to the 0% tax rate for imported whole cars validated since 2018 of Vietnamese government and the mindset “foreign products equal to great quality” of Vietnamese people, it has become more challenging for domestic car manufacturers in Vietnam to compete in terms of quality-cost-delivery approach. This leads to a hindrance towards the ambition/strategy to localize automotive industry of Vietnam as a country in general and Vietnamese organisations in particular. In order to overcome the difficulties and obtain a better quality, understanding and modelling quality issues are significantly vital to Vietnamese automotive industry. This paper aims to study and conceptualize the methodology to determine an appropriate model for the quality issues of engine assemblies. The research dataset is collected from Ford Motor Company in the UK, which is famous for its quality control system producing well-known high-quality models over time periods e.g. Ford, Mazda, Jaguar, Land Rover and so on; especially, the manufacturer in the UK is the biggest technical centre consisting of an end-to-end process i.e. design, development, engineering and support activities. By understanding how a leading automotive organisation in a developed country was beneficial from the methodology as the most optimised example, the method might be generalized and applied to many aspects in Vietnamese automotive industry ranged from solely assemblies-produced to wholly car-manufactured business.

## ***1.2. Objectives***

In details, the objectives of this study are summarized into three questions as follow:

- To mine and understand the behaviour of Quality data:
  - ⇒ What is the pattern and behaviour of the dataset?
- To establish a modelling method for engine assembly quality issues from the dataset:
  - ⇒ What is the proper method to model the pattern of the dataset?
- To give recommendations for automotive businesses:
  - ⇒ How can the data be modelled in future?

### ***1.3. Framework***

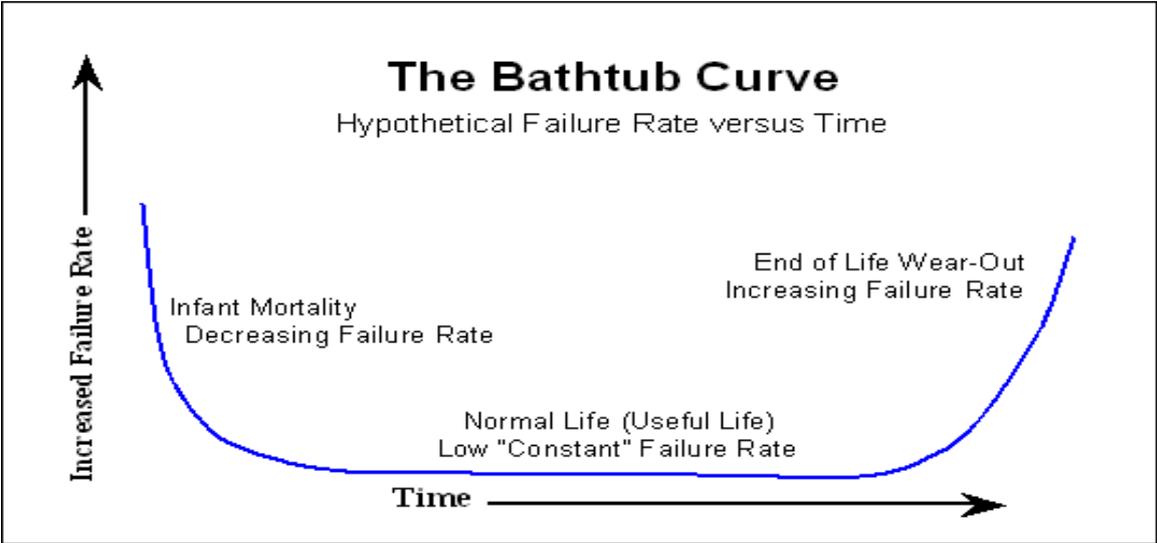
To present the method, the research focuses on the quality issues of one particular part i.e. engine assemblies for manufacturing diesel and petrol engines, off which a fully-assembled engine is built up from various assemblies in the assembly line. The discussion would concentrate on the role of time, failure rate, the impact and interaction of main variables (Stations, Models, Operations and Features) on the distribution of failures.

### ***1.4. Literature review***

According to Law (2007), in manufacturing systems, quality issues are the major cause of variability, largely influence overall system and should be modelled accurately. Literature to date has mostly focused on modelling failure time, the time between failures and the duration between failures of the entire population of an engine over time (Proschan, 1963; Lamoureux, 1991; and George, 1994). In contrast, little academic attention has been given concerning the frequency of failures or the tendency of failure occurrence regardless of engine types. Moreover, the importance of practical modelling failures for real-life situations in the automotive industry has just been realised in a few decades. As such, there are not many publications about the practical implementation. Typical literature about modelling failures in real-life scenarios are Lu (2009); Kulkarni and Gohil (2012); Hillmann et al. (2014); and Chwif et al. (2015). Using a regression formula and data mining to model, the background of formulas and statistical techniques of this paper is outstanding references on failures-modelling methods in manufacturing system, such as Law (2007); McCullagh and Nelder (1989); Baesens (2014); MacQueen (1967)

According to the manufacturing-based approach, quality can be defined as the conformance of products to a specific design or specification (Crosby, 1979 and Gilmore, 1974). These authors also emphasized the concept of ‘right at the first time’ as products should be manufactured properly in the first trial. So, quality issues happen when products are associated with scraps or reworks, indicating existing flaws within the first operation, which lead to increased production cost. In the automotive industry, an assembly failure is identified when the testing machine indicates that the engine possesses a problematic feature, for example, the design of the engine assembly is not followed original specification. Besides features, the probability that a failure occurs within a certain period of time (i.e. reliability) is used to assess product quality. The most typical measurements of reliability are the mean time between failures (MTBF), the mean time to first failure (MTFF), and the failure rate per time unit (Juran, 1998). This paper considers the role of features and failure rate per time unit in modelling the variability of engine assembly failures.

Generally, the variability of quality issues has been debated throughout time. Many researchers have claimed the existing relationship between engine assembly failure rates and time factor, namely the classical Bathtub curve – figure 1 (Amstadter (1977); and Proschan (1963, 2000)). Contrastingly, Venton and Ross (1984) argued that there were two types of engine failure rates: mechanical (physical failure, time dependence) versus electronic (fragile system events, time independence, randomness). Since engine assemblies may consist of both electronic and mechanical components, there is a possibility that the variability of engine assembly failures will be either time dependent or independent. This will be discussed in result and discussion sections.



**Figure 1. Bathtub curve - life time product**

Modelling quality issues can be differently established depending on business requirements of suppliers and manufacturers, two main sides of the automotive industry. Relevant papers from both stakeholders are reviewed to provide a better vision on how analysts may conduct research and build models using different methods i.e. system thinking, data mining, spreadsheet-based softwares and simulation techniques. Hanifin and Liberty (1976) found out that Machining-A GPSS-V Simulation technique could enhance the quality control process of material handling and production in the USA for both stakeholders. Lu (2009) suggested a new classification method, Arrow, and applied finite mixture distributions to the current simulation system in Ford Motor Company UK to model the breakdowns duration of machines in assembly lines. Hillmann et al. (2014) claimed the potential advantage of the Failure Process Matrix (FPM) and spread-sheet based software to improve product quality and securing high qualified products for manufacturers. As for suppliers, Kulkarni and Gohil (2012) applied Soft system methodology (SSM) to improve the assembly line in the Sweden automotive industry.

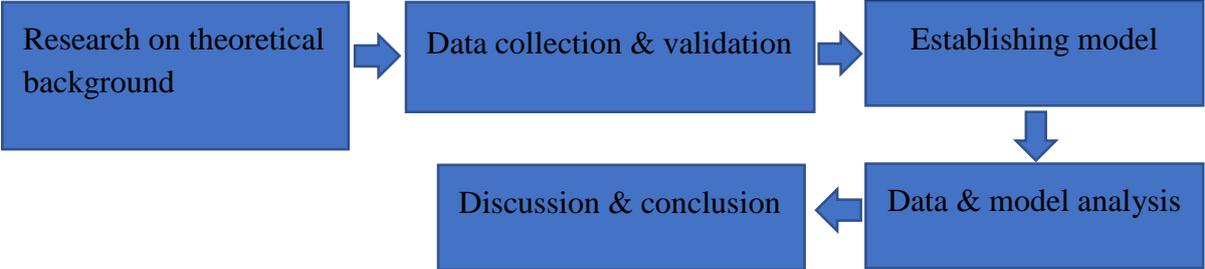
Understanding data behaviour is vital to the success of one company but raw data is difficult to understand in its initial appearance. Fortunately, data patterns can be exploited by processing data with Big Data analytics. Accordingly, the behaviour of failures can be identified and there is a chance to predict the re-occurrence (Baesens, 2014). A normal process of data mining tends to start with Descriptive analytics, which enables analysts dig deeply into a massive amount of data for a condensed and more focused information. Then, historical events will be derived to a conclusive summary with appropriate and useful patterns to users. The next step of Big Data analytics is Predictive analytics, which combines machine learning, statistical techniques, modelling and technical softwares to examine historical data (Baesens, 2014). The difference between Descriptive and Predictive analytics is that the former is used to discover the trend of current data, then the latter can provide a future forecast for categorical and continuous variables with a high rate of certainty. Thereupon, necessary business and decision patterns can be extracted and organisations can make the right decisions. There are many techniques to analyse and understand data, such as: neuro network, decision tree, data visualisation, rule induction and clustering... For a dataset with categorised variables, looking for data significance will be easier with clustering technique. As a typical descriptive analytics technique, Clustering has been introduced to categorised a large dataset into many groups which share similar characteristics. Each member in the group possesses a high degree of similarity within its group (MacQueen, 1967). Two traditional clustering methods are hierarchical clustering algorithm and k-mean algorithm. There is a vast collection of clustering algorithms, leading to the difficulty of choosing a proper algorithm for certain circumstances (Dubes and Jain, 1976). Jain et al. (1999) reviewed data clustering methods and suggested a taxonomy of selecting clustering technique. They proposed a set of eligible criteria, considering the situation, the data structure and the sensitivity of the technique to variability. Hierarchical clustering algorithm aims to separate large amount of data into different similar groups, without pre-identifying the number of groups. In contract, k-mean algorithm requires analysts pre-determine how many clusters before carrying out the grouping process. In comparison to other data mining methods, clustering method can reduce the negative effect of noise data by separating them into an outlier group (Zhang et al., 1997; Chiu et al., 2001). Moreover, the classification function of clustering can be used to simplify a large set of data when finding out distributions for variables in a simulation model (Lu, 2009). Thereafter, predictive analytic can be carried out in a better way with regression model to identify the failure frequency. As a predictive analytics technique, regression is introduced to predict the future behaviour of the data using linear functions, especially when the target variable is numerical. Baesens (2014) stated that by associating specific features to a particular variable and determining

their influence/interaction on the variable, the analysts could foretell the behaviour of relevant activities in the forthcoming time. Many predictive algorithms are conducted for regression models with categorical variables, for example: Naïve Bayes, support vector machines, neuro network, generalized linear algorithms. Off all the methods, the generalized linear algorithms are specialized for modelling binary and count data as response variables (McCullagh and Nelder, 1989). At the moment, there are no practices on data mining and predictive model in Vietnam, especially on the engine assembly quality issues in the assembly line. There are only studies about the performance and development of the industry (Tran and Ngo, 2014; Ichida, 2015)

**2. Methodology**

**2.2. Research Methodology**

The process to obtain the methodology and its validity for the research is described in figure 2.



**Figure 2. Research methodology and validity process**

**Hypothesis 1:** The frequency of failures can be predicted by the existence of stations, models, operations and features to which they belong to.

**Hypothesis 2:** The predictive power of stations, models, operations and features is more significant than time factor.

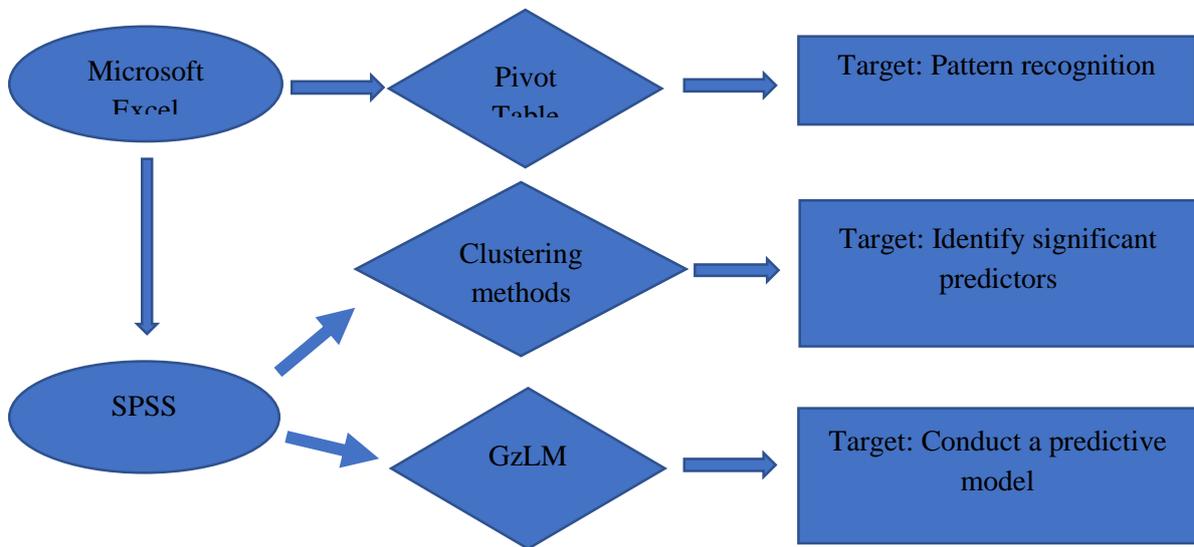
**Hypothesis 3:** Time factor is insignificant in developing predictive model for failure frequency.

In other words, engine assemblies which possess certain characteristics i.e. belonged to a certain type of model and/or involved with a certain station, operation and feature, are expected to fail.

These hypotheses are inspired by four praised papers: Lu (2009); Kulkarni and Gohil (2012); Hillmann et al. (2014); Chwif et al. (2015), which are unique in terms of methodology, data sources, and research timeframe. The study rationale is originated from all of these papers: figure out which parameters are important to model the failures of machines and/or engines in the assembly line.

With regard to the methodology, the design of descriptive analytics is a revised version of three studies: Lu (2009); Hillmann et al. (2014); and Chwif et al. (2015). However, neither studies have tried predictive analytics regression model, instead they applied other methods i.e. simulation, soft system methodology and classification model. Therefore, this paper is challenging the conventional method, and proposes a newly practicable applicable technique for modelling quality issues, in particular, the failure of engine assemblies.

This paper uses data mining in both data analysis and modelling establishment. Clustering technique is used to identify the significant characteristics of the quality issue data, which are the main causes for failures in engine assemblies. Then, regression generalized linear model (GzLM) is applied to achieve a predictive model for this behaviour (details in Figure 3).



**Figure 3. Technical modelling techniques**

## ***2.2. Data collection and validation***

Secondary data would be used in this research. The 6-month dataset which was collected from Ford Motor Company by direct visits to the factory site, includes of 84 stations and 27 engine models with 23441 failures recorded in the assembly line. Each entry of engine assembly data includes an ID series number, type of model, station, operation, operation count, failure date, failure time and features. To define, station represents the location where the product is manufactured, operation represents the function of the station at a particular time, operation count represents the times the engine is being reworked, and feature represents a brief description of the design reasons for failures (each is given a specific letter-numeric mixed code).

To avoid sampling bias, outliers and extreme values (Baesens, 2014), the data set would be divided into two sets of data, which are: training data and testing data. Training data (January to the third week of June) is used for data analysis and pattern-finding process, whereas 1110 data entries of the final week's data i.e. testing data is used to test the model validity. To establish appropriate variables for the study, data transformation is applied before data analysis. The dependent variable, the failure count (operation count) is numerical data, that does not require data transformation. Since four independent variables (Model type, Station, Operation and Feature) are categorical data, to input these variables into the regression model, they are transformed by orderly assigning a numerical number to each data. For instances, Model has 27 kinds, it would be number 1 for model 4R8Q-6009-AA, 2 for model 5U3Q-6006-AA and 27 for the final model in the list, Tension\_Bolt. Similarly, Station data is coded as 1 to 84, Operation data is given numbers 1 to 216 and Feature data is transformed as 1 to 310.

### ***2.3. Data analysis and Model development***

To find out the current pattern of the dataset and identify the importance level of each independent variables, descriptive analytics Two-step clustering is conducted. Then, k-mean algorithm is used to examine the accuracy of the grouping process via verifying the number of groups.

The back-up mathematical algorithms for these clustering methods are:

**Two-step clustering:** The algorithm is an adaption of k-mean and hierarchical algorithm proposed by SPSS. Two steps are: 1) pre-cluster the cases into many small sub-clusters; 2) cluster these sub-clusters into a desired number of clusters.

**K means clustering:** According to MacQueen (1967), each k-means cluster is represented by the centre of the cluster. The algorithm aims to minimise a squared

error function, which is:

$$J = \sum_{j=1}^k \sum_{i=1}^n \|x_i^{(j)} - c_j\|^2$$

where  $\|x_i^{(j)} - c_j\|^2$  is a selected distance amount between a data point  $x_i^{(j)}$  and the cluster centre  $c_j$  indicates the respective distance of  $n$  data points to their cluster centres.

To create a predictive model representing the failures' behaviour and determine the failure frequency in future series, a Poisson regression model with a log link function for count data is recommended (Cameron and Trivedi, 2013). This generalized linear regression includes three components: a random component, a systematic component (possessing a linear predictor) and a link function.

**Random component:** Response  $Y$  has a Poisson distribution that is:

$$y_i \in \text{Poisson}(\mu_i) \text{ for } i = 1, \dots, N$$

Where the expected count of  $y_i$  is  $E(Y) = \mu$ , variance of  $y_i$  is  $\text{var}(Y) = \mu$ .

**Systematic component:** Any set of  $X = (X_1, X_2, X_3, X_4)$  are explanatory variables and together their linear combination contribute to the linear predictor:

$$\eta = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4$$

**Log-linear link function  $g(\cdot)$ :**

$$\log(\mu) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4$$

Describes how the mean  $E(Y) = \mu$  depends on the linear predictor. It is for transforming the expectation of the response variable,  $\mu = E(Y)$ , to the linear predictor.

As Poisson regression uses log-linear link function, then with four explanatory variables:

$$G(u) = \log(\mu) = \eta = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4.$$

⇒ Equivalent:

$$\begin{aligned} \mu &= \exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4) \\ &= \exp(\beta_0) \exp(\beta_1 x_1) \exp(\beta_2 x_2) \exp(\beta_3 x_3) \exp(\beta_4 x_4) \end{aligned}$$

Hence, the **Generalized linear regression** is established as:

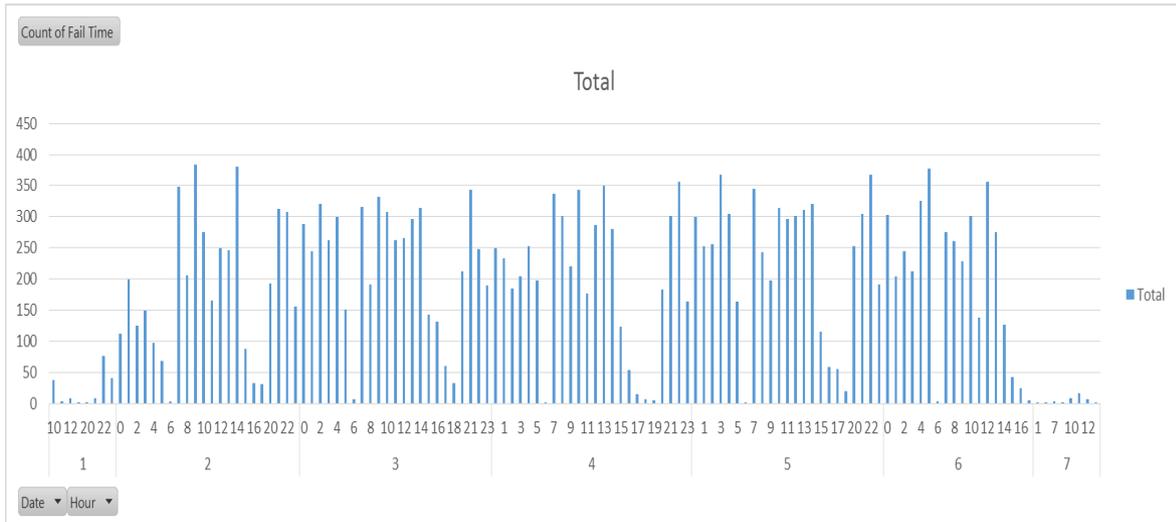
$$g(u) = g(E(Y)) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

With  $\beta_0 =$  the intercept,  $Y =$  dependent variable (e.g. count data: the failures number of each series over time, failure count),  $\beta_1 =$  Station,  $\beta_2 =$  Model,  $\beta_3 =$  Operation and  $\beta_4 =$  Feature.

To test the validity of the model, test of error is run to compare the correlation between the actual data and the predicted data. The significance level takes into account the independence between variables. A graphical comparison between actual and predicted value of failure count is also conducted to provide a richer view on the model quality. Pivot Table Excel and SPSS are deployed.

### 3. Results

Failures tend to appear in specific stations, operations, features and models. The frequency is likely to occur between early morning, early afternoon and late evening, especially within the hours of 00-05, 07-15 and 21-23. There are not much failures in Saturday and Sunday but significant in weekdays, leading to a  $\Omega$  shaped distribution of failures. For every 10 hour, the failure pattern is repeated with the transition period of 6 o'clock and 18-19 o'clock (figure 4).



**Figure 4. Failure time 24/24 hour every day in a week: 1 to 7 = Sunday to Saturday**

Regarding to the model development, descriptive analytics Clustering methods indicate that the failure behaviour is mainly controlled by four factors and time is actually not significant when building the model, as shown in table 1 with the significance level of each factor.

Clusters						
Input (Predictor) Importance						
	1.0	0.8	0.6	0.4	0.2	0.0
<b>Cluster</b>	1		2			
<b>Label</b>						
<b>Description</b>						
<b>Size</b>						
<b>Inputs</b>	nfeature TSVP_Sht1 - TSVP Delta Shift 1 (2.2%)		nfeature LkRa - Leak Rate (ccm) (31.8%)			
	nmodel FPLA-6007-AB (35.2%)		nmodel FPLA-6007-AB (23.4%)			
	noperation Static1 - Static1 (62.2%)		noperation CoolCav Lk - Coolant Cavity Leak Test (14.5%)			
	nstation COLDTEST1 - FU1510 (51.1%)		nstation LONGBLOCK - FU0860 (15.2%)			
	<b>Date</b> 4.02		<b>Date</b> 3.89			
	<b>Hour</b> 10.23		<b>Hour</b> 10.38			

**Table 1. Clustering**

Consequently, the predictive model is built without time factor, the formula would be:

$$Y = 25.402 + (-24.749) * Model\ 1 + \dots + 0.016 * Station\ 3 + \dots + (-0.594) * Operation\ 98 + \dots + (-0.691) * Feature\ 283 + \dots + 0 * Feature\ 310.$$

Regarding the validity, the model is proved to be satisfactory in both testing and trial data sets (Table 2). All p-values < 0.05 indicate Model, Station, Operation and Feature variables are significant with the predictive power of model is validated.

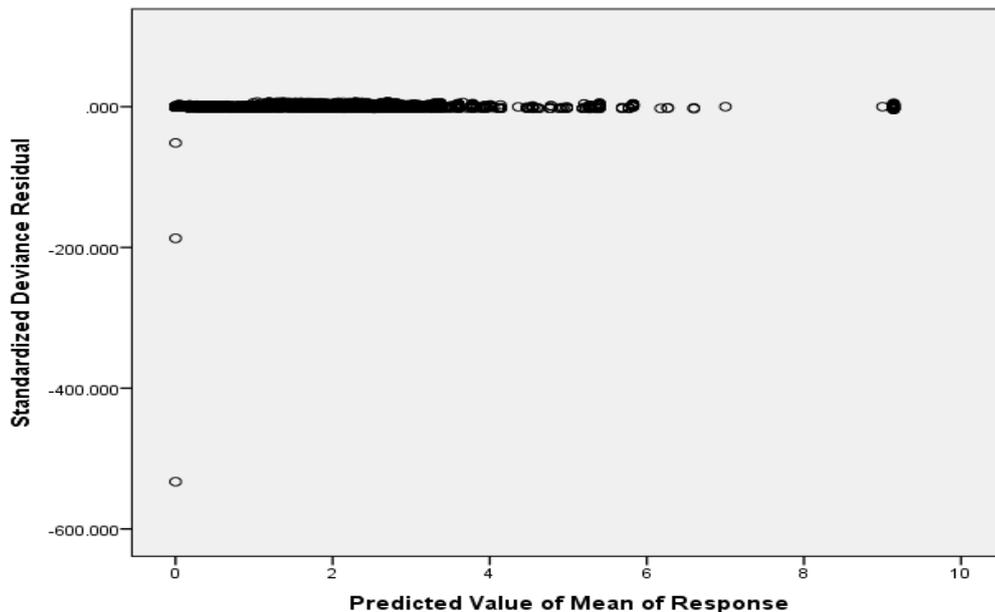
**Tests of Model Effects**

Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	23.822	1	.000
nmodel	387.149	25	.000
nstation	71.865	9	.000
noperation	545.427	109	.000
nfeature	2660.068	308	.000

Dependent Variable: Failure Count

Model: (Intercept), nmodel, nstation, noperation, nfeature

**Table 2. GzLM - Test of Model Effects**

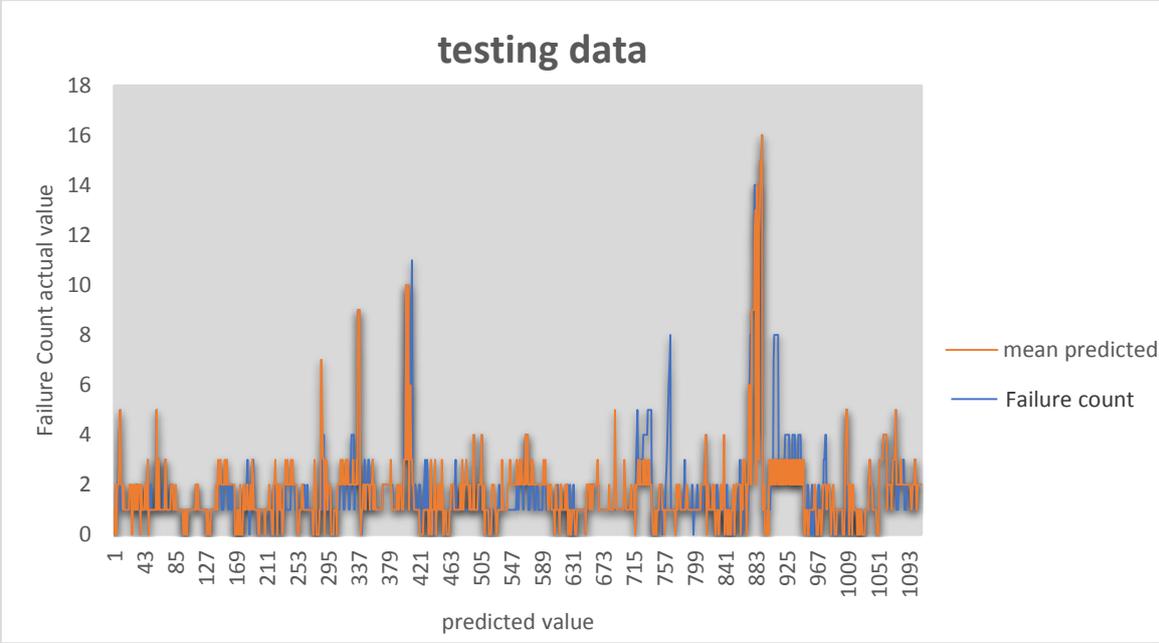


**Figure 5. Standardized deviance residual vs. Predicted value mean of response**

In figure 5, Standardized deviance residual is checked against the predicted value mean of response to ensure that the model errors are not too offensive. As most

residuals are near 0.000 (between -3.3 and 3.3), predicted results are close compared to actual outcomes.

Especially, a similar trend between actual and predicted values is shown in the testing dataset (figure 6), leading to a more confirmative support for the predictive power of the model.



**Figure 6. Predicted value vs. Actual value**

**4. Discussion and conclusion**

Results have claimed that data mining techniques are useful in studying behaviour and developing a predictive model for the behaviour of assembly failure issues in the automotive industry, as in the sample case of Ford assembly line. Notably, the significance of time is not zero (0.2) as shown in Table 1, indicating a possibility that time may have predictive power in other scenarios. In this study, the data mining clustering methods indicate that time is not so important when it stands alone. Depending on circumstances, when there are much more specialized data to analyse, it is possible to include time factor to model development (Lu, 2009).

This project is based on a practical case study of a leading motor company that possesses a structure off which automotive business in Vietnam is striving for e.g. Vinfast. Also, there are not much applications of Big Data analytics in the automotive sector for quality control. Hence, this study is worthwhile as a reference to the area of modelling quality issues for Vietnamese automotive company with a highlight in data mining. By obtaining an adequate modelling system, companies have a great chance to learn about failures, avoid their adverse impacts and produce qualified assemblies in the future. Likewise, in Ford’s circumstance, deep understanding with

data behaviour has helped the company avoid repeating the current mistake of auto-rejecting the entire production batch due to a few defective items. Ford may now pick out products in which scenarios tend to be errored. Consequently, labour allocation, goods manufacturing standards, operation and quality control, production cost and customer demand can be efficiently managed. Especially, for Vietnamese automotive industry, these aspects have a huge contribution to achieve the domestically oriented strategy - to become a completely domestic car manufacture industry.

To conclude, this study has set a foundation for Big Data analytics and can act as the first stepping stone for employing data mining techniques and regression model to quality check in the automotive industry. Another potential approach called SSM may be used due to its specification in favour of drawing an overall picture of problematic situations to identify solutions.

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# THE EFFECT OF FDI ON ECONOMIC GROWTH IN VIETNAM

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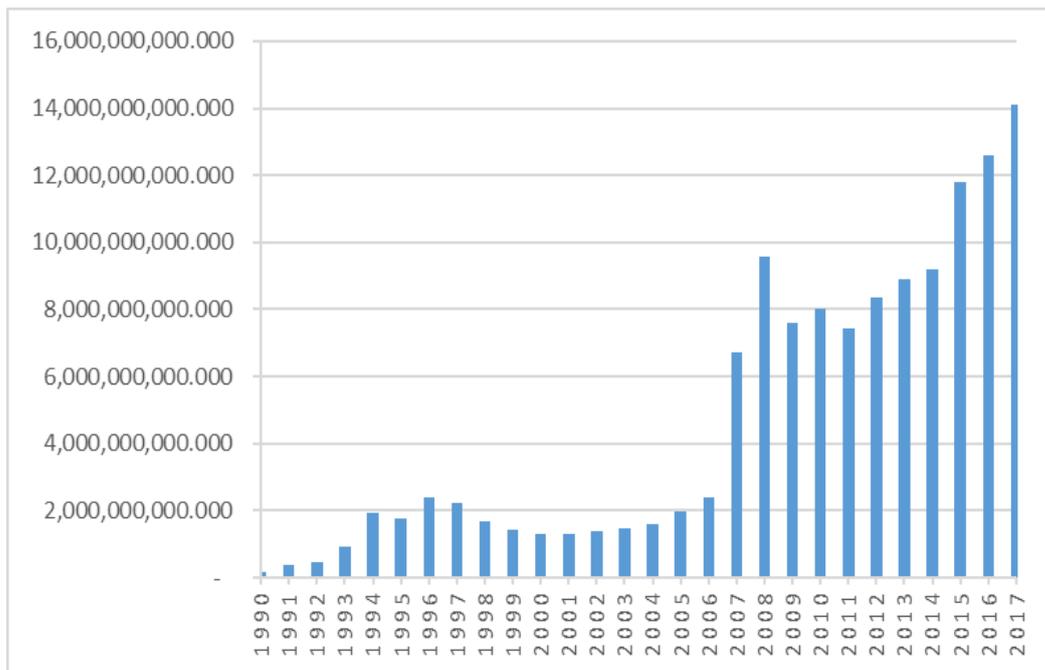
## **Abstract**

*The relationship between Foreign Direct Investment (FDI) and economic growth has motivated a voluminous empirical literature focusing on both developed and developing countries. Empirical work on the impact of FDI in host countries suggests that FDI is an important source of capital, complements domestic private investment, is usually associated with new job opportunities, in most of the cases is related to the enhancement of technology transfer and overall boosts economic growth in host countries. This paper examines this issue in the case of Vietnam by applying the bounds testing (ARDL) approach to cointegration for the period from 1990 to 2017. ARDL approach is used to along with ECM to find out the long run relationship and short-run dynamics between the selected variables. The empirical results indicate a strong relationship between FDI and economic growth in Vietnam. On the policy front, the government could stimulate foreign direct investment through incentives to investors, creation of a good macroeconomic environment and a careful utilisation of loose monetary policy to grow the economy.*

**Keywords:** *Economic growth, FDI, ARDL, Erros correction, Vietnam*

## **1. Introduction**

There have been many literatures on this topic, most of which suggest that economic prosperity of a country is related to significant inflows of foreign direct investment (FDI). Many researchers have conducted studies to investigate the theories of FDI, various economic variables that influence FDI, the effects of economic integration on the movements of FDI, and the benefits and costs of FDI, ... The majority of these studies shows that there is a positive causal relationship between FDI and economic growth, in either the short run, or long run, or both. This implies that that the positive effects of FDI is not inevitable, but rather depend on host countries' ability to absorb, such as a free trade policy, supportive policy and high quality work force (Zhao and Du, 2007).



**Figure 1: FDI inflows of Vietnam (USD)**

Vietnam has been quite successful in attracting FDI inflows since the inception of economic reform in 1986. According to a report of Foreign Investment Agency (Ministry of Planning and Investment), the total amount of new registered and increased capital, purchase shares of foreign investors reached 20.33 billion USD in the first semester of 2018, 5.7% more than the corresponding period of the preceding year. In the first 6 months, there were 87 countries and territories with investment projects in Vietnam.

The studies on FDI in Vietnam has been voluminous, however, most previous studies focus on factors affecting FDI in Vietnam which assumes the accurateness of the FDI-growth led theory. In this study, the author would like to confirm this assumption by studying by applying the ARDL Bound Test Approach to Cointegration method using time series. This will contribute to the current literature on the subject and provide useful policy implications based on the revealed short-run and long-run relationship between FDI and economic growth in Vietnam.

## **2. Theory and Methodology**

The study follows the model by Bellouni (2014) and Fosu (2006) and others. The basic model of this study is based on endogenous growth theory where total production is a function of technology, capital, and labor. FDI is included in the model to represent the externalities and spill-over effects. The variables capital (domestic investment) and labor are major components in production function which determine the level of production. The control variable, trade openness will capture the externalities in relation to international trade and reduce the omitted variable bias.

**Table 1: Description of Variables**

Variable	Description	Time	Source of data
GDP	Real GDP is used as a measure of both a national total output of goods and services and its total income	1990-2017	World bank
FDI	Inflow of Foreign Direct Investment is used as an explanatory variable to explain the FDI - economic growth relationship	1990-2017	World bank
DI	Domestic Investment is investments by public and non-public sectors	1990-2017	World bank
TO	The variable trade openness is calculated taking the summation of exports and imports as a ratio to the GDP	1990-2017	World bank
LB	The labor force is used as a proxy for human capital. The total volume of the labor force is indicated by LB	1990-2017	World bank

To analyses the long run as well as short run relationship between selected variables, the study applies ARDL Bound Test Approach to Cointegration. Pesaran & Pesaran (1997), Pesaran & Shin (1999) and Pesaran et al. (2001) consecutively built this approach and found this method to be more proficient than other techniques. There are several relative advantages to the ARDL that make it more useful than others. Firstly, the ARDL allows for the integration of the variables regardless of their order and whether they are stationary at I(0) or I(1). Secondly, the ARDL determines a dynamic unrestricted error correction model (UECM) through a linear transformation. The UECM integrates the short-run dynamics with the long-run equilibrium without losing any information over time. The unrestricted error correction model (UECM) of ARDL approach is used to examine the long run and short run relationship through the following setting:

$$\Delta \ln \text{GDP} = \delta_0 + \delta_1 \ln \text{GDP}_{t-1} + \delta_2 \ln \text{FDI}_{t-1} + \delta_3 \ln \text{DI}_{t-1} + \delta_4 \ln \text{TO}_{t-1} + \delta_5 \ln \text{LB}_{t-1} + \sum_{i=1}^{q1} \alpha_i \Delta \ln \text{GDP}_{t-i} + \sum_{i=1}^{q2} \beta_i \Delta \ln \text{FDI}_{t-i} + \sum_{i=1}^{q3} \gamma_i \Delta \ln \text{DI}_{t-i} + \sum_{i=1}^{q4} \mu_i \Delta \ln \text{TO}_{t-i} + \sum_{i=1}^{q5} \tau_i \Delta \ln \text{LB}_{t-i} + \varepsilon_t$$

where GDP is Real GDP;

FDI is Foreign Direct Investment;

DI is Domestic Investment;

TO is Trade openness;

LB is The total volume of the labor force;

$\Delta$  is the first difference operator.

In order to streamline the data, all variables were converted to natural logarithm. The use of natural logarithm mitigates correlations among the variables. It also helps in reducing heteroscedasticity as it compresses the scale in which variables are measured.

The first part of the equation (1) with  $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5$ , refer to the long run coefficients and the second part with  $\alpha, \beta, \gamma, \mu, \tau, \omega$ , refer to the short run coefficients.

To implement the Autoregressive Distribution Lag (ARDL) Bound Test Approach to Co-integration, two steps are involved.

*First*, for testing whether cointegration exists between share prices and the explanatory variables of the model, we test null hypothesis ( $H_0$ ) against alternative hypothesis ( $H_1$ ).

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$$

$$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq 0$$

Null hypothesis ( $H_0$ ) shows that there is no cointegration between variables while alternative hypothesis ( $H_1$ ) illustrate that co-integration exists between variables.

Null hypothesis ( $H_0$ ) against alternative hypothesis ( $H_1$ ) is tested using ARDL bound test. ARDL bound approach to cointegration is a non-standard distribution without considering whether variables are integrated at  $I(0)$ ,  $I(1)$  or mix order of integration but no variable is integrated at  $I(2)$  or higher order. Pesaran et al. (2001) gave two set of critical values i.e., lower bound values and upper bound values. The set of lower bound values assumes that all variables are  $I(0)$  and other set of upper bound values assumes that all variables are  $I(1)$ . These sets provide a band which covers all possible categories of the integrated variables into the  $I(0)$ ,  $I(1)$ , even fractionally integrated or mix order of integrated. ARDL bound test is based on F-test. Wald test for determination of F-statistic value is used in the study. If the computed F-statistic value is greater than the critical value of upper bound, it rejects null hypothesis ( $H_0$ ) in favor of alternative hypothesis ( $H_1$ ), indicating that there is cointegration between the variables. If the computed F-statistic value is less than the critical value of lower bound, it rejects alternative hypothesis ( $H_1$ ) in favor of null

hypothesis ( $H_0$ ), indicates that there is no cointegration exists between the variables. If the computed F-statistic is fall between the lower bound and upper bound, the result is inconclusive.

*Second*, after establishing the cointegration, an appropriate lag length of the variables is selected through Akaike Information Criteria (AIC), Schwarz Information Criterion (SIC), and Hannan-Quinn Criterion (HQ). After determination of appropriate lag length of the selected variables, the long run ARDL model for the stock price is estimated as follow:

$$\ln\text{GDP} = \delta_0 + \delta_1 \ln\text{GDP}_{t-1} + \delta_2 \ln\text{FDI}_{t-1} + \delta_3 \ln\text{DI}_{t-1} + \delta_4 \ln\text{TO}_{t-1} + \delta_5 \ln\text{LB}_{t-1} + u_t$$

The estimated residual series of the long-run model is known as error correction term (ECT). Next, the error correction model associated is estimated with one lagged ECT to obtain the short-run dynamic parameters. The error correction model is based on the re-parameterization of the estimated long-run ARDL model. The negative and significant coefficient obtained for one lagged ECT will establish the presence of cointegration and it also represents the adjustment speed of the disequilibria from the previous period's shock which converge back to the long run equilibrium in the current period.

### **3. Results**

#### **3.1. Unitroot test**

Before applying for econometric work, it is a pre-requisite of checking stationary of series under consideration. According to Granger & Newbold (1974), incorrect inferences would be generated working with non-stationary variables. Using Augmented Dicky-Fuller (ADF) unit root test, we checked the order of integration of selected variables.

Table 2 exhibits the univariate analysis results of ADF unit root test for selected variables. According to the table 2, only the variable log LDI is stationary on a level  $I(0)$ . After running the same test taking the first difference, all the variables became stationary except for labor. Hence, the unit root test confirmed that the variables are stationary on different levels  $I(0)$  and  $I(1)$ . If the variables are stationary on different levels, the most widely used methods identifying co-integration among variables such as Engle and Granger (1987). However, since LLB is  $I(2)$ , it is dropped from the model so that futher steps can be performed. It is worth noting that from the literature review, especially from the papers mentioned above, Labor was not significantly effect GDP and FDI, therefore, it does not affect the model to exclude labor.

**Table 2: Stationarity results of the variables – ADF test statistics results**

<b>Variables</b>	<b>t-Statistic</b>	<b>Prob.*</b>	<b>Results</b>
lnGDP	-3.349900	0.0823	Non-stationary
lnDI	-4.747790	0.0008	Stationary
lnFDI	-2.486998	0.3311	Non-stationary
lnTO	-0.851097	0.7866	Non-stationary
lnLB	2.132905	1.0000	Non-stationary
D(lnGDP)	-5.390898	0.0002	Stationary
D(lnFDI)	-3.862214	0.0070	Stationary
D(lnTO)	-4.295069	0.0026	Stationary
D(lnLB)	-2.045729	0.5503	Non-stationary
D(D(lnLB))	-4.788685	0.0040	Stationary

### **3.2. ARDL estimates**

Eviews software is used to run ARDL approach to co-integration and the test result of the model is shown in table 3. The appropriate lag is selected automatically based on Schwarz Criterion and the selected ARDL model is (1,0,0,1). The probability of F-statistics is less than 0.05 for the short-run model indicating its significance. Diagnostic tests such as serial correlation, normality test, and heteroscedasticity test were conducted to determine the validity of the data. The statistical value of heteroscedasticity is 0.625 and the probability level is 0.708 which is greater than 0.05. It is an indication of lack of heteroscedasticity of the model. As shown in the appendix, the short-run model gets through all the diagnostic tests. There is no serial correlation or autocorrelation and error term of the model is also normally distributed.

The estimated results of long-run coefficients are shown in Table 4 with F statistic much greater than the upper bound hence the null hypothesis of no co-integration is rejected. Meaning that a long-run relationship exists between the selected variables in the model. The long-run coefficient is an indicator of the long run relationship of the variables with the dependent variable. The sign of the coefficient of all the selected variables are positive in the long-run model except for trade openness, but only log FDI is significance. Economic growth is positively correlated with DI, negatively correlated with trade openness in long run, but not significant. This is an indication of low productivity in domestic sector, and high productivity in FDI investments.

**Table 3: ARDL estimation results**

Dependent Variable: LGDP				
Selected Model: ARDL(1, 0, 0, 1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.361606	0.116871	3.094046	0.0057
LDI	0.145381	0.082370	1.764964	0.0928
LFDI	0.139250	0.033417	4.167004	0.0005
LTO	-0.332330	0.187504	-1.772390	0.0916
LTO(-1)	0.299218	0.165906	1.803543	0.0864
C	8.794464	2.119854	4.148619	0.0005
@TREND	0.042667	0.013847	3.081424	0.0059
R-squared	0.997732	Mean dependent var		24.68712
Adjusted R-squared	0.997052	S.D. dependent var		0.978237
S.E. of regression	0.053116	Akaike info criterion		-2.814245
Sum squared resid	0.056427	Schwarz criterion		-2.478287
Log likelihood	44.99230	Hannan-Quinn criter.		-2.714347
F-statistic	1466.445	Durbin-Watson stat		1.399706
Prob(F-statistic)	0.000000			

**Table 4: Estimations of long-run coefficients**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LDI	0.227729	0.116498	1.954794	0.0647
LFDI	0.218126	0.050761	4.297135	0.0004
LTO	-0.051867	0.373492	-0.138870	0.8909

$$EC = LGDP - (0.2277*LDI + 0.2181*LFDI - 0.0519*LTO)$$

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	8.549449	10%	3.47	4.45
k	3	5%	4.01	5.07
		2.5%	4.52	5.62
		1%	5.17	6.36

The ECM of the selected ARDL model is shown in Table 4. The short-run elasticity of the variable is shown by the D(.) sign. According to the estimation results, only lnGDP (lag1) lnFDI, lnTO (lag 1) effect GDP in short-run. A negative sign of the error term is the indication of convergence towards the equilibrium. The estimated values of  $R^2$  and adjusted  $R^2$  are 0.72 and 0.63 respectively indicating that 72 percent of the variation of the dependent variable is explained by the independent variables. Diagnostic tests showed the of lack of autocorrelation between the variables.

**Table 5: Error correction representation for the selected ARDL model**

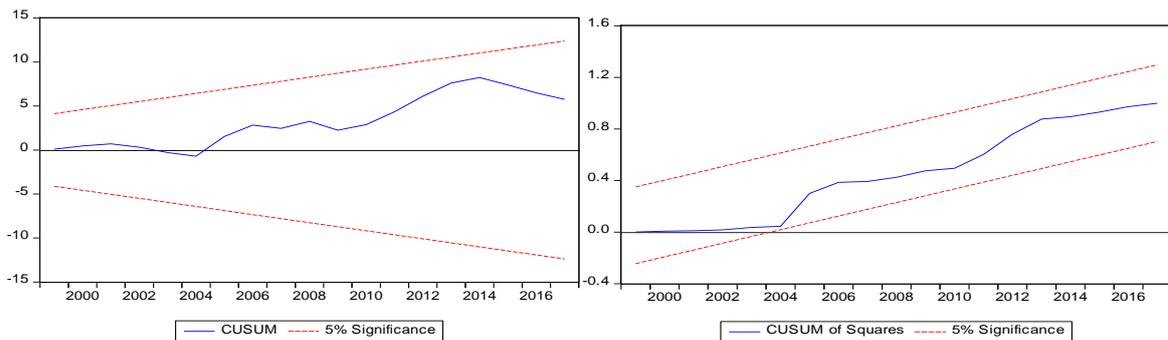
Dependent Variable: D(LGDP)

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016048	0.026196	0.612598	0.5474
D(LGDP(-1))	0.404240	0.135971	2.972990	0.0078
D(LDI)	0.178965	0.120290	1.487786	0.1532
D(LFDI)	0.113751	0.038618	2.945565	0.0083
D(LTO)	-0.065284	0.155402	-0.420101	0.6791
D(LTO(-1))	0.463729	0.134504	3.447687	0.0027
ECM(-1)	-0.772478	0.245404	-3.147783	0.0053
R-squared	0.720142	Mean dependent var		0.121058
Adjusted R-squared	0.631766	S.D. dependent var		0.075028
S.E. of regression	0.045529	Akaike info criterion		-3.116152
Sum squared resid	0.039384	Schwarz criterion		-2.777434
Log likelihood	47.50998	Hannan-Quinn criter.		-3.018614
F-statistic	8.148614	Durbin-Watson stat		1.533212
Prob(F-statistic)	0.000188			

### 3.3. Diagnostic tests

Figure 1 shows the CUSUM and CUSUMSQ stability tests respectively for the selected ARDL based ECM. This model is stable because none of the lines cross the critical value lines of figure plots generated by the Eviews software. Hence, this model can be applied to explain FDI economic growth relationship in Vietnam.



#### 4. Conclusions and Recommendations

The core objective of this study is to find out FDI-economic growth relationship of Vietnam for the period of 1990-2017. The selected variables are real FDI inflows, domestic investment, trade openness to identify the impact on economic growth. Vietnam is seeking FDI to boost economic growth at present, hence, it is motivated identifying whether FDI promotes economic growth on prevailing economic setting. ARDL approach is used to along with ECM to find out the long run relationship and short-run dynamics between the selected variables.

The ECM generated expected sign at 1 percent significant level. The selected econometric model gets through all the diagnostic tests and confirms the absence of serial correlation, heteroscedasticity, and nonnormality. CUSUM and CUSUMSQ tests confirm the stability of the model validating the applicability in policy making.

The empirical results the study are associated with previous research which found a strong relationship between FDI and economic growth in Vietnam. Among the other selected variables, FDI is found as the main driver of economic growth in Vietnam. DI is weakly and positively correlated with economic growth in the long run and short run. This is an indication of low productivity in domestic sector, and high productivity in FDI investments.

Inshort run, GDP and trade openness in the previous period also act as positive indicators for economic growth.

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# **FINTECH CREDIT: BUSINESS MODELS AND OPERATIONS MANAGEMENT**

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## **Abstract:**

*Financial Technology Credit (abbreviated as Fintech Credit) has rapidly developed and contributed to expanding the scale of financial service provision in many countries. In Vietnam, in recent years, financial technology companies have participated in providing financial services, creating many business models and new products and services, including Fintech Credit. Through analysis and synthesis with the theoretical and practical approach to business model and operation management of Fintech Credit, the study shows the formation and development of Fintech Credit with specific solutions for the development of Fintech Credit market in Vietnam.*

**Keywords:** *Business models, ecosystem, Fintech Credit.*

## **1. Introduction**

The Fintech Credit business model has grown rapidly in the world over the years, created a new capital supply channel in the market and contributed to promoting financial inclusion development. In Vietnam, a number of Fintech companies have begun to deploy Fintech Credit models through the use of Internet-based connections, contributed to the capital supply in the credit market recently. However, this is a potential risk model for all parties involved, which can cause certain economic and social instabilities. In particular, in the context of the lack of fully-developed legal framework as well as mechanisms, policies and guidelines for Fintech Credit activities, it has not created good conditions and opportunities for Fintech companies to develop this model. This paper studies the theory and practice of business model and management of Fintech Credit in Vietnam to propose solutions to create favorable conditions and opportunities for Fintech companies to continue applying innovations, creation of technological achievements and ensuring the legal rights of the parties, contributes to ensuring safety in developing Credit Credit in Vietnam.

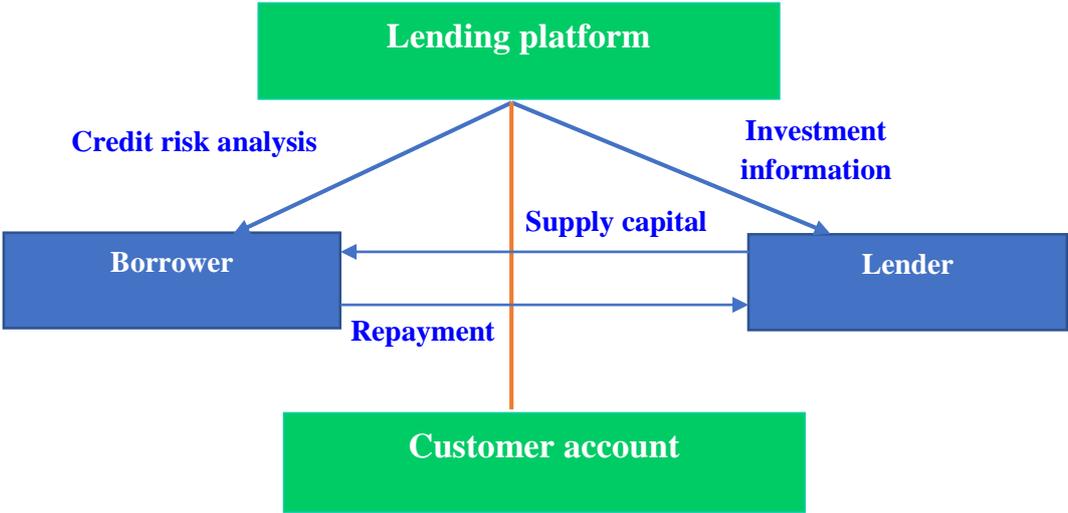
Up until now, there have been many concepts of Fintech Credit, according to CGFS and FSB (2017), Fintech Credit is a credit activity created by electronic platforms such as peer-to-peer lending and often related to connect borrowers directly with investors, although some platforms use equity on the balance sheet to lend.

In another concept, Fintech Credit includes all credit activities created by suitable platforms for borrowers with lenders (Investors). Depending on the scope of operations, these platforms are peer-to-peer (P2P) lending, lending based on community-based mobilization (Debt-based crowdfunding) or market lending (Marketplace lending) and includes platforms that use equity on the balance sheet to lend. Basically, credit provided by technological platforms can also be considered as Fintech Credit (Stijn Claessens et al., 2018).

In summary, Fintech Credit is the use of financial technology to connect people who are looking for capital and those who want to invest with a variety of business models including:

*Firstly, peer lending model (P2P lending) (Figure 1):* Borrowers sign up for loans on a P2P lending company platform, provide credit information and post it on the platform after it is verified and approved by the platform. Lenders can choose to fund loans that are available on the market. Individual loan contracts are established between borrowers and lenders, contract payments and repayments are separated from the platform account (CGFS and FSB, 2017).

**Figure 1: P2P Lending model**

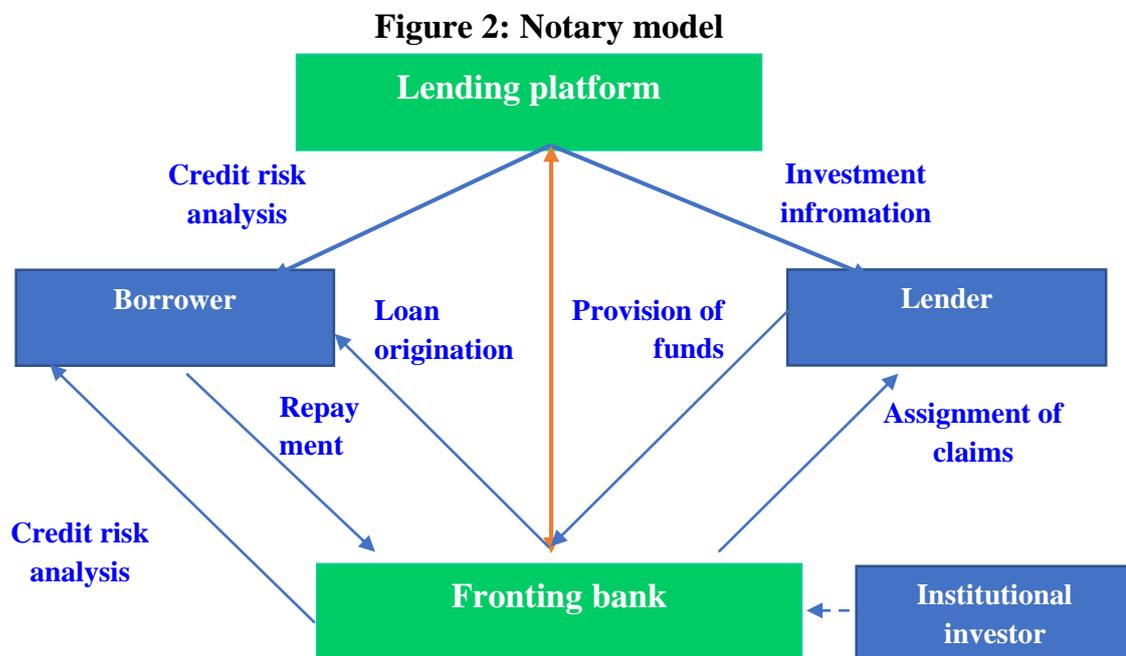


*Source: CGFS and FSB (2017)*

After the borrower submits a loan, the login information is verified by the P2P platform through the scoring model set up to assess the credit risk. If the borrower meets the criterias, the loan request is listed on the website to call for lenders or

investors to invest. The lender receives information about the loan; when the loan is processed, the loan contract will be established. In this model, P2P lending acts as a intermediary for credit ratings, connecting lenders and borrowers, and recovering loans. Loans will be completely separated from the balance sheet of P2P lending company and will be directed to a legally separate account of the borrower. P2P lending earns income and service fees for loans and does not face losses in the event of default (David W. Perkins, 2018). In other words, in this business model P2P lending does not bear any credit risk and only acts as a facilitator between the borrower and lender (Derayah financial, 2017).

*Secondly, notary model* (Figure 2): The loan is created by a co-operative bank. The online platform only acts as a broker, connecting borrowers and lenders (CGFS and FSB, 2017).



*Source: CGFS and FSB (2017)*

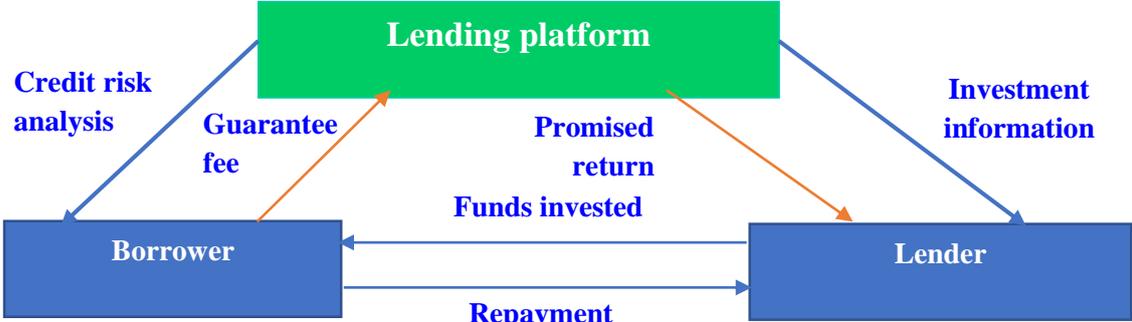
In this model, Fintech companies engaged in activities still act as intermediaries, connecting lenders and borrowers. Once the loan has been approved, the bank will use money from the lender's account to transfer to the borrower's account. The bank will issue a loan certificate to the lender and a loan to the borrower.

Indirect lenders connect investors who want to provide funds with loans. Lending investors are individuals, financial institutions or investment funds that choose loans with interest rates and risk profiles that they want to earn interest on loans. When investors commit to finance a loans, market lenders use fronting banks to initiate loans. Market lenders buy loans from banks and then sell loans to investors.

In general, market lenders earn income and service fees for loans and do not face losses in case of default (David W. Perkins, 2018).

Thirdly, *Guaranteed Return Model* (Figure 3): The platform operator guarantees the loans interest for the lender through the results of the borrower's risk assessment. Borrowers who received invested capital and have to pay the platform operator guarantee fee. The lender, the investor will select the loan based on the use of the loan, revenue, financial situation, business efficiency of the borrower. The loan portfolio will be posted online for investors to update and select. In this model, the investor's profit will be guaranteed at such a rate as 12% of the loan value and be reimbursed in the case of non-paying borrowers (CGFS and FSB, 2017).

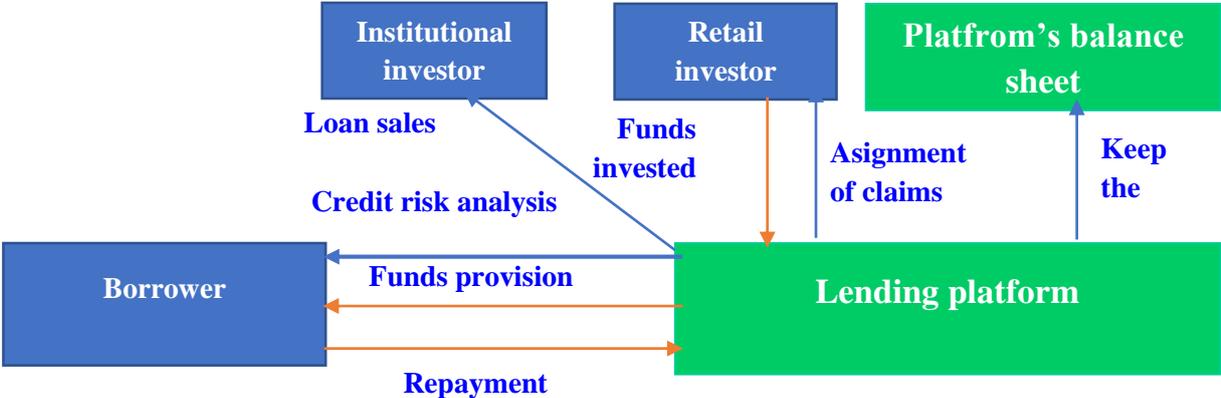
**Figure 3: Guaranteed Return Model**



Source: CGFS and FSB (2017)

Fourthly, *balance sheet model* (Figure 4): The platform operator retains the loans in the balance sheet to be sold to institutional investors, or retail investors. In this case, the platform operator takes money from investors and provides it to the borrower, who pays interest to the platform operator. In case the platform operator fails, investors will have difficulty to get money back. Lenders following this model are more dependent on capital sources such as debt, equity and securitization (CGFS and FSB, 2017).

**Figure 4: Balance sheet model**



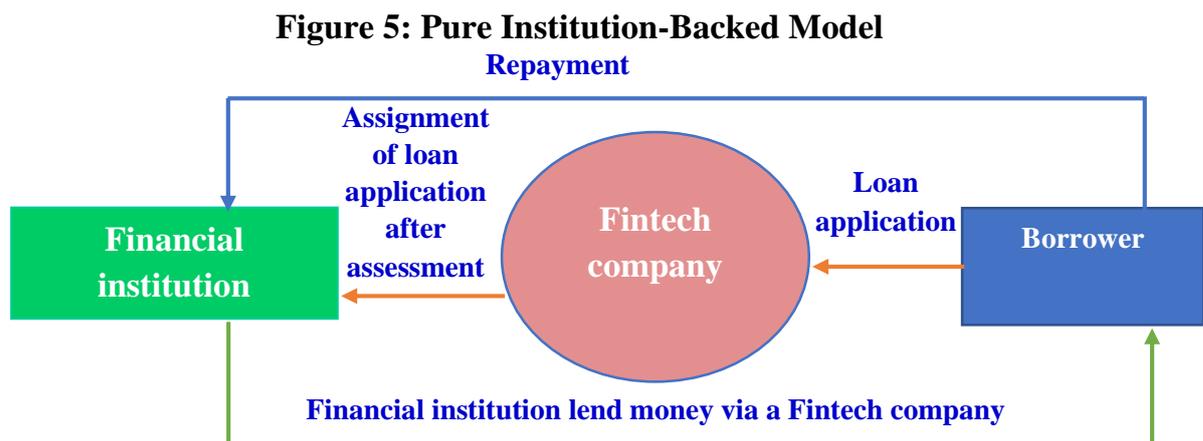
Source: CGFS and FSB (2017)

Fintech companies use this model to basically use their equity to finance loans or receive loans from other financial institutions. Fintech companies assess risks and fix interest rates for financial needs and then disburse loans from Fintech's own capital (balance sheet) for projects that match the criteria. risk (Alvin Cahyadi, 2018).

*Fifthly, invoice trading model:* Supplying capital of Fintech companies is also implemented in the form of credit as factoring. Fintech companies provide innovative factoring solutions such as providing online factoring or offering automated factoring solutions, which helps customers be more efficient from the service. Fast delivery and cost savings. Businesses use bill financing or factoring services to manage cash flow, allowing them to sell receivables to third parties. Fintech invoice trading platforms provide more flexible services than traditional factoring operations, including automatic invoice processing; provides quick liquidity and financial security for customers (CGFS and FSB, 2017).

*Sixthly, institution-backed lending model:* Fintech companies participating in this model cooperate with banks as their source of funding and partnership is divided into the following 2 models:

(i) Loan model based on Pure Institution-Backed Model (Figure 5): Fintech companies directly disburse funds from organizations' funds to lend; therefore, lenders are basically organizations. In this model, Fintech companies play the role of attracting customers, evaluating and sending customer risk assessment results to financial institutions. Because loans are created using organizations' money, the risk is also taken up by financial institutions. In this model, Fintech creates revenue from the loan commission of the loan disbursed (Alvin Cahyadi, 2018).

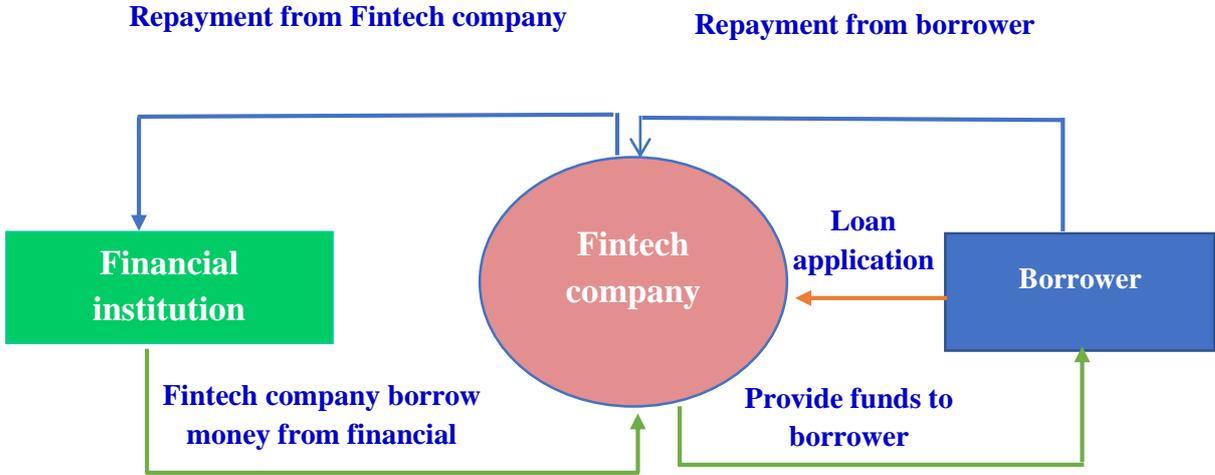


*Source: Alvin Cahyadi (2018)*

(ii) Hybrid Model (Figure 6): Fintech companies borrow money from financial institutions to make loans; therefore, Fintech companies must bear the cost of capital for each loan disbursed. In this model, Fintech companies are still lenders; However,

different from the model supported by pure organization is to bear the risk of lending and the revenue generated by fees and loan interest (Alvin Cahyadi, 2018).

**Figure 6: Hybrid Model**



Source: Alvin Cahyadi (2018)

The advantages of Fintech Credit are simple credit process through online interface. Many features of the platform benefit borrowers, lenders and investors in quickly checking online interest rates by providing some basic information about income, credit scores, and updates. The approval process for funding and after approval of the loan is quickly funded to the borrower (Derayah financial, 2017). At the same time, the unique characteristics of Fintech credit institutions are to use technology and digital technology to fully or largely interact with online customers and handle a large amount of customer information (Stijn Claessens and partner, 2018). However, P2P Lending model contains many risks:

*Firstly*, most activities have very high credit rating standards and only provide high quality loans. But some loan cases are more risky, especially if lending to P2P Lending provides loans to borrowers who have been denied bank credit, so this is still the main problem leading to risk (Alistair Milne and Paul Parboteeah, 2016).

*Secondly*, Fintech Credit faces the risk of platform failure; due to the need to develop systems for new customers, but the viability of the platform depends on achieving scale enough to cover fixed operating costs. Some platforms do not reach the scale and lending on the platform must cease operations, resulting in losses in loans (Alistair Milne and Paul Parboteeah, 2016). Lenders depend on the platform and the nominated person to charge the loan affected when the platform works not as expected (Eric C. Chaffee and Geoffrey C. Rapp, 2012), which will cause losses for lenders.

*Thirdly*, the ability to reduce the price of loans will affect investors because the investment is priced according to the market and some investments may be depreciated, causing losses for investors (Alistair Milne and Paul Parboteeah, 2016).

*Fourthly*, there are fraud, cybercrime and inactivity (Alistair Milne and Paul Parboteeah, 2016), identity theft risks and money laundering concerns, privacy and security violations Data protection of consumers,... (Eric C. Chaffee and Geoffrey C. Rapp, 2012).

*Fifthly*, the information provided by the borrower is often unverified and when the information is verified, there might be inaccuracy, the lender has difficulty in determining the actual credibility of the borrower. (Eric C. Chaffee and Geoffrey C. Rapp, 2012), so it is difficult to monitor loans.

*Sixthly*, the credit rating indicated by the platform may not accurately predict how the loans will operate because the platforms have a limited amount of historical loan data (Eric C. Chaffee and Geoffrey C. Rapp, 2012).

*Seventhly*, individual lenders are completely based on repayment from individual borrowers and are not guaranteed by any collateral or guaranteed by any third party (Eric C. Chaffee and Geoffrey C Rapp, 2012).

*Eighthly*, investments made by individual lenders are significantly lower than many other forms of investment because many loans have a term of three to five years (Eric C. Chaffee and Geoffrey C. Rapp, 2012).

Due to the above risks, Fintech Credit activities are managed from the registration of license and during the operation of companies participating in Fitech Credit activities, including:

*Firstly*, registration of operations (David W. Perkins, 2018) and according to ECB (2018), the general criteria assessed in the licensing process include, but are not limited to, the following four areas:

- (i) Governance (Compliance of management members and the appropriateness of shareholders);
- (ii) Internal organization (Risk management, compliance and audit framework);
- (iii) Operation program;
- (iv) Capital, liquidity and solvency

*Secondly*, consumer protection and regulatory compliance (David W. Perkins, 2018)

*Thirdly*, the management of the Government is required for operations (David W. Perkins, 2018). Accordingly, standardization of operations is the key to achieving system

safety goals, protecting customers, promoting competition and efficiency in the market. At the same time ensure proper monitoring without preventing financial innovation and use the platform to provide credit to borrowers who cannot afford to borrow from banks (Alistair Milne and Paul Parboteeah, 2016).

## **2. Method**

This paper analyzes, synthesizes theories and practical knowledge on business model and operation management of Fintech Credit in Vietnam. This paper collects and analyzes data from Fintech credit companies such as HuyDong, Tima, Lendbiz, Megalend,.. define and assesses the business model and operation management of Fintech Credit in Vietnam. Analysis and assessment results are the basis to contribute solutions to the development of Fintech credit in Vietnam.

## **3. Results**

In Vietnam, the activities of Fintech companies include four groups of activities and activities implemented including community capital mobilization, lending, personal financial management, payment (mobile), Bitcoin / Blockchain, POS (Point of Sale) management, data management and information comparison. In 2016, with 1 out of 39 Fintech companies, Loanvi is operating Fintech Credit. In 2017, with 48 Fintech companies, including 3 Fintech Credit companies are Loanvi (HuyDong), Tima, TrustCircle. By 2018, the entry of many companies such as Vaymuon, Mofin, Lendbiz, Fiin, Megalend, Mosa, MoneyBank, iDong, Avay, Evay, etc. has increased Fintech companies operating Fintech Credit in Vietnam (FinTech News , 2017) and (Fintech News, 2018). The number of Fintech companies operating in Credit Credit increased rapidly over the years, contributing to the capital supply along with the supply of capital and a large number of customers in the past years.

Most Fintech Credit activities implement P2P Lending model under a mechanism with components including investors or lenders, platform and borrower. In particular, (i) borrowers apply for loans, login information to the platform. However, it is not clear if the the credit scoring model meet the minimum criteria for lending or investment decisions; (ii) Fintech company binds lenders to borrowers to decide on lending; (iii) loan decisions are quickly made and (iv) loans are transferred to borrowers via electronic platform. In addition, operating under the P2P Lending model is broken down in steps that are not really detailed in verifying the borrower's information, verifying the bank account and performing the payment process, auto-deducting. month.

## **4. Discussion and Conclusion**

Fintech companies engage borrower with lender and according to this business model, Fintech does not bear any credit risk, only acts as a facilitator between

borrower and lender and Loans are often not guaranteed. Fintech Credit's operations in some companies follow a fairly extensive P2P Lending model and are shown on the following aspects:

*Firstly*, the scope of operation is wide, operating nationwide (Tima, 2019), MegaLend, 2019, ...).

*Secondly*, the loan size is quite large, the amount of money disbursed by some companies is quite high, the number of borrowers, lenders or investors is quite large (Tima, 2019), (MegaLend, 2019) ..., In There is a lending company with a total amount of more than VND 60 trillion with 2.9 people and a total of more than 31,000 people (Tima, 2019).

*Thirdly*, lending products are quite diverse, including loans to meet the needs of production and business and life (Tima, 2019), HuyDong (2019), ..

*Fourthly*, the loan term is mostly short-term loans (Tima, 2019), (HuyDong, 2019), ..

*Fifthly*, the lending interest rate is usually higher than the lending interest rate of commercial banks, particularly the interest rate of loans of 1.5% / 1 month (Vaymuon, 2019).

*Sixthly*, the amount of lending is small, the maximum loan amount of many products is VND 50 million and the fact that popular lending is popular is VND 10 million (Tima, 2019), (MegaLend, 2019) ...,

*Seventhly*, the target customer orientation of companies is quite clear, some companies serve individual customers (Tima, 2019), (Vaymuon, 2019), ... some companies focus on joint customers small businesses (HuyDong, 2019), ... and some companies target small business and business customers (Lendbiz, 2019), ...

With the rapid development, wide operation scale, the increasing operation scale of Fintech companies in recent years has created a capital supply channel to serve the needs of business production capital and improve life. However, the management requirements and the following aspects should be ensured:

*Firstly*, the registration of the operation is not classified in the business field of Fintech Credit companies, the fields registered in the National Portal on business registration Some of these companies have not been fully integrated with Fintech Credit business model, which is implemented as "Other remaining business support services are not yet classified", "Supporting activities financial services have not been classified yet, "... (Ministry of Planning and Investment, 2019).

*Secondly*, with the lending interest rate higher than the lending interest rate of commercial banks, affecting the efficiency of the borrowers' use of capital, besides, with the internal risks of Fintech Credit, there are no regulations and instructions to protect the benefits of investors and lenders in case of risks.

*Thirdly*, the legal basis for Fintech Credit is incomplete, Fintech Credit business models have not been specified and specifically instructed to facilitate companies to diversify business models; Fintech Credit has not been standardized to ensure system safety goals, ensure proper monitoring, protect customers, and promote Fintech Credit to grow.

Therefore, strengthening the management from the license registration phase and during the operation phase of companies participating in Fintech Credit to contribute to the safety and effectiveness of finance in Vietnam. It is necessary to have specific solutions.

Suggestions contribute solutions to the development of Fintech credit in Vietnam, including:

#### ***4.1. Ensure common criteria are assessed during the licensing process***

*Firstly*, governance aspect: Ensuring the appropriateness of the knowledge capacity of members participating in management and financial capacity of shareholders and capital contributing members.

(i) Relevance of management members: Management members must have sufficient knowledge, skills and experience to perform the management and administration functions of Fintech Credit; including full knowledge, skills and practical experience in banking and financial business. At the same time, ensure the knowledge, skills and technical experience to allow members to participate in management and operation according to technology-based business model.

(ii) Relevance of shareholders and capital contributors: Ensuring shareholders and capital contributing members hold their shares and contributed capital in Fintech company for a long time to ensure stability. Fintech's finances, ensuring a healthy and prudent operation of Fintech for an initial period of time.

*Secondly*, ensure the organization and internal management process: Ensuring a full organizational structure to manage and administer the entire operation of the company in the field of Fintech Credit. In particular, interested in the governance structure and decision-making process, including:

(i) Review the internal process of assessing loans, which will establish minimum criteria for information to analyze, evaluate and verify customer information and income. Evaluating this information will serve as a basis for credit ratings and the accuracy and completeness of the information is very important to Fintech's decision.

(ii) Assess the feasibility of the credit scoring model, which may include a range of methods, from developing an internal credit scoring model to using data to verify credit scores obtained from a third party.

(iii) Review and evaluate risks related to information technology, assess protection measures to minimize the impact of risks, especially with adequate human resources and risk management framework internal to manage, detect and respond quickly to network incidents.

(iv) Supervise security and data management through review and evaluation of the comprehensive management of information technology risks with a specific focus on operational risk and assurance of technical requirements for information and data security.

*Thirdly*, have appropriate activities, ensuring continuous operation in the time of operation, ensuring consumer rights, not causing disruption to the financial system. The operational program should accurately describe the earnings forecasted in the first three years of operation and include financial forecasts for the breakeven point period. Consider the costs needed to operate the business for a period of three years and measures to take action when the business is in trouble so as not to cause damage to the parties involved in Fintech Credit.

*Fourthly*, ensure capital, liquidity and solvency, ensuring sufficient capital in accordance with regulations and in accordance with the scope and scale of operations; ensure the requirement of liquidity ratios and solvency during operation. At the same time, ensure the source of compensation and expected remedial measures in case of risks and financial losses.

#### ***4.2. Fully develop mechanisms and policies***

Fully develop, synchronize mechanisms and policies, facilitate Fintech Credit development, including:

*Firstly*, in addition to specific regulations on business field in Fintech Credit to meet the requirements of business registration, it is necessary to fully regulate specialized activities; establishing product and service standards for Fintech companies that operate in a transparent manner, ensuring safety for Fintech Credit activities; in which, regulating standards and standards for trading of business

models, guiding companies involved in Fintech Credit to diversify business models. Implementing standardization at the sector level is very important for long-term growth and stability in Fintech Credit and the highest level of standardization can help reduce operational risks, strengthen security. Customer protection and benefits of participants are guaranteed.

*Secondly*, create regulations to protect the rights of participants includes instructions on appropriate credit interest rates in each period, investors need to meet the criteria to participate, ensuring sufficient understanding to invest in unregistered companies. For borrowers, it is necessary to be informed about costs and risks related to the selection of loan products to decide on the selection and use of loans effectively and limit risks.

*Thirdly*, create regulations in checking and supervising Fintech Credit activities fully and synchronously, regulations on credit rating of loan applications, risk management standards and standardization of data and transparency Transactions information to help identify losses, contribute to ensuring safety in Fintech Credit activities.

*Fourthly*, in addition to ensuring proper supervision without preventing financial innovation and using a platform to provide credit to borrowers who cannot afford to borrow from banks, it is necessary to create a clear mechanism and Many advantages for parties involved in comprehensive monitoring of platforms and early warning of the implementation of models to improve safety for Fintech Credit.

*Sixthly*, create policies to support the development and development of a business network suitable to each business capability group of Fintech Credit companies. Support connecting with experts and investors; support in training human resources and technical advisers, facilitating low operating costs, building a friendly and stable environment for parties to participate in Fintech Credit activities to grow.

*Seventh*, create policies to support the dissemination of knowledge about Fintech Credit in order to equip investors with risk awareness and make the right decisions when participating in credit activities on the basis of Fintech Credit.

Fintech Credit has contributed to expanding the scale of financial service provision in Vietnam in recent years. Through practical assessment of business model and operational management of Fintech Credit, it shows that there are limitations in Fintech Credit activities, failing to meet the requirements of managing Fintech Credit activities. The paper proposes solutions to ensure common criteria are assessed in the process of operating licensing; fully set up mechanisms and policies; establishing economic goals to guide the development of Fintech Credit; forming specialized centers and associations; have state investment support and business management.

Simultaneous implementation solutions will contribute to the safe and effective development of Fintech Credit in Vietnam in the future.

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# IMPROVING EXPORT FORWARDING ACTIVITIES BY SEA IN VIETNAM IN THE CONTEXT OF INTERNATIONAL INTEGRATION

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## **Summary**

*This research was carried out to analyze and provide some solutions to improve the performance of export forwarding activities by sea in Vietnam. In addition to the combination of qualitative and quantitative research methods, the research investigated and interviewed managers and experts of the transport sector as well as corporate forwarders in Vietnam. The researching findings show that there are some factors affecting the export forwarding activities of corporate forwarders in Vietnam: (1) Preparation of goods, (2) customs procedures, (3) freight forwarding, and (4) liquidation. This is an important basis for the heads of corporate forwarders to develop their strategies to improve their export forwarding performance in Vietnam in the context of international integration.*

**Keywords:** *export forwarding; by sea; corporate forwarders.*

## **1. Rationale**

In the current open and profoundly integrated economy, enterprises have many options to circulate their goods. No matter what options they choose, they must ensure the performance of the shipping process inside and outside the country. Especially, in the context of global economic integration, the issue of import and export has become increasingly important for every country. No country stays out of it and Vietnam is among them. Vietnam is a developing country, and import and export play a more and more important role in reducing costs and improving the competitiveness of the economy. Therefore, right after Vietnam became a member of WTO in

particular and other free trade agreements such as FTA, AEC, etc., in general, it has had the necessary premises to step up its international trade. Some common points have been seen in some big cities in Vietnam, including economic, political and social dynamism, and notable of the cities are Ho Chi Minh City, Hai Phong City, Da Nang City, Quang Ninh Province, Quang Nam Province, etc. Associated with the growth rate of import and export turnover of the country from 20% to 25%, the trade in goods has grown rapidly, mainly goods transported by sea (about 80% of the total volume). This is an important prerequisite in the development of Vietnam's seaborne shipping industry in general and the seaborne shipping economy of major coastal cities in particular. The sea freight forwarding also has its own characteristics. Compared to other modes of transport, the seaway vouchers are of a very important position as they determine the decision of the importers and/or exporters to deliver or receive the goods as well as make payment. Therefore, throughout this research, we focus on improving the export forwarding activities by sea of forwarders in Vietnam via exploring, surveying and analyzing the data, hence proposing appropriate recommendations to help sea export forwarders improve their performance in the current context of international integration.

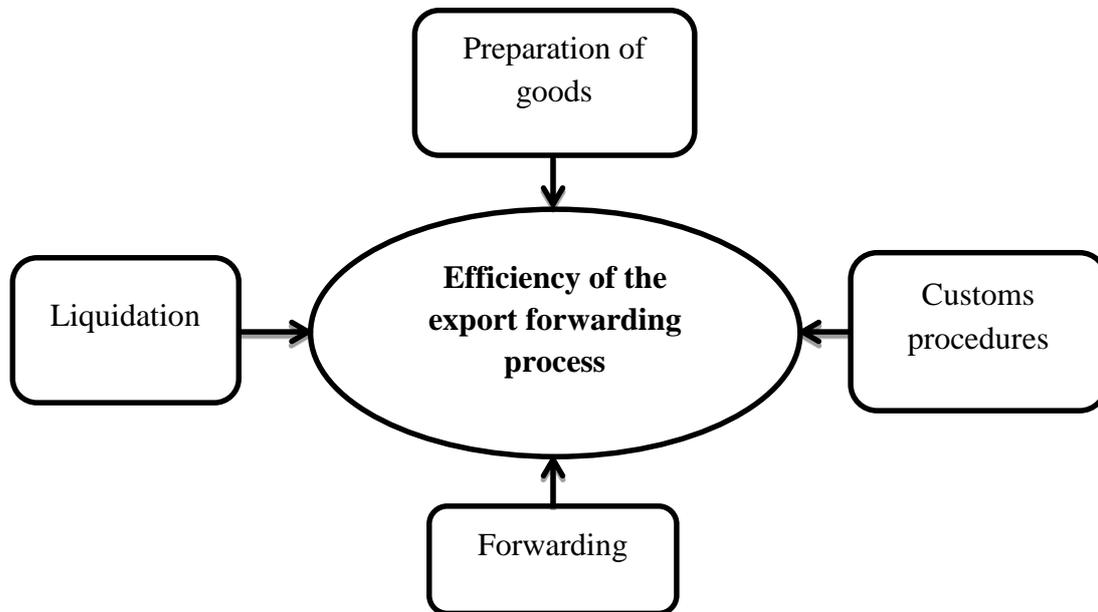
## **2. Theoretical basis and research model**

### ***2.1. Theoretical basis***

Freight forwarding has a lot of concepts about forwarders. Prof. Dr. Hoang Van Chau (1) said: "Forwarders are those who take care of the goods to be transported under consignment contracts and act for the sake of the consignees and they themselves are not carriers. Forwarders also undertake all works related to forwarding contracts such as: preservation, storage, transshipment, customs clearance, inspection, etc. ". Article 164 of Vietnam's Trade Law (8) says that a forwarder is a trader with a business registration certificate for goods forwarding services. A forwarder may be: a goods owner when the goods owner himself / herself undertakes the delivery and receipt of his or her goods; a ship owner when the ship owner on behalf of the goods owners performs the forwarding services; a goods agent, a loading or unloading company, a warehouse, a professional forwarder or any other person registering the business of freight forwarding services. From the above, the author can reach the following concept: "A forwarder is a person who works under consignment contracts with goods owners, acts for the interests of goods owners, sometimes carries out the transportation but is not necessarily a carrier. That person may have or may not have means of transport, may use, hire a carrier or directly participate in carriage. But that person signs freight consignment contracts with goods owners who are shippers or recipients, not carriers. He/she may do some other things within the consignment of the goods owners."

From the theoretical foundation to the actual situation of export forwarding activities by sea of the enterprises in Vietnam in the current context of international economic integration, the process of forwarding includes: (1) Preparation before delivery; (2) customs declaration, (3) delivery, (4) post-delivery.

## 2.2. Research model



**Figure 1** The author summarizes on the basis of the forwarding process.

Research hypotheses:

- **H1:** The preparation of goods greatly affects export activities of the enterprises.
- **H2:** Customs clearance affects the efficiency of the export process. If this stage is not done well, the goods will not be cleared, which greatly affects the reputation and costs of the enterprise.
- **H3:** Organization of a freight forwarding system greatly affects the reputation of the enterprise. If the delivered goods are not of sufficient quality nor on time as agreed by both parties, the enterprise will lose a certain number of customers.
- **H4:** The liquidation affects the financial performance which is the premise for long-term operation of the enterprise.

## 3. Research method

This research is done through the following steps:

**Step 1:** Based on the basic concepts and theories of forwarding and research results of other authors, the author used qualitative methods to conduct group

discussions and consultation of leading experts to select variables and groups of observed variables suitable to the topic (including 4 elements).

**Step 2:** Based on 4 groups of factors, the author designed the questionnaire, made preliminary survey to eliminate the non-impact variables (including 23 observed variables) and preliminarily surveys 50 people, including: 10 business managers, 15 business owners, and 25 employees of forwarders in Vietnam. The survey results were used as inputs and the Cronbach's Alpha coefficient was used to test the scale.

**Step 3:** After preliminary testing of the scale, no observed variable was excluded. Thus, the set of factors affecting the efficiency of export forwarding activities consists of 4 groups of factors with 23 observed variables redesigned for official investigation. The survey took place from May 1, 2018 to July 31, 2018 at the seaway forwarders operating in Vietnam according to the following process: making phone contacts for survey permission, sending questionnaires for interview, exchanging interview purposes, answering unclear interview issues with 300 tickets. The testing the official scale produced Cronbachs' Alpha coefficient of the 4 groups of factors with 23 observed variables of more than 0.6, so all scales were accepted.

**Step 4:** When completing the survey and testing of the official scale, we conducted Exploratory Factor Analysis (EFA) to minimize and summarize the data (*Hoang Trong - Chu Nguyen Mong Ngoc, 2008 (10)*). This method is based on the factor extracting ratio (Eigenvalue), whereby only factors that have Eigenvalue of greater than 1 will be retained, and those that have Eigenvalue of less than 1 will have no better effect on summarizing information than an original variable, because after normalizing, each original variable has variance of 1. The method of extracting principal components and Varimax Procedure were used to minimize the number of variables with large coefficients at the same factor, increasing the ability to interpret factors.

**Step 5:** Based on the results of analysis done at stage 4, we redefined the research model and set up research hypotheses for the model. The method of multiple linear regression analysis was used to test the model hypotheses, thereby considering the impact of these factors on the performance of export forwarders in Vietnam.

## **4. Research findings**

### ***4.1. Results of scale test***

Results of the official scale test (Table 1), Cronbach's Alpha coefficient was greater than 0.6 and the correlation coefficients of the total variables were of standards ( $> 0.3$ ). Therefore, all scales were accepted and included in the next factor analysis.

**Table 1: Scale test results**

Coding	Components	Cronbach's coefficient	Alpha
A	Relationship	0.933	
B	Trademark	0.746	
C	Marketing capacity	0.744	
D	Research and development capacity	0.786	

**4.2. Exploratory Factor Analysis (EFA)**

Bartlett test (Table 2) with Sig. = .000 < 0.05; KMO coefficient = 0.756. Thus, the observed variables in the overall correlate with one another.

**Table 2: Bartlett's test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.723
Bartlett's Test of Sphericity	Approx. Chi-Square	1594.560
	Df	190
	Sig.	.000

**Table 3:****Factor calculations**

Details of observed variables	Factor			
	1	2	3	4
Simple packaging process for export	.869			
Fully-prepared relevant documents	.843			
Quick collection of goods	.843			
Clear and accurate codes and marks on the package	.838			
Strictly checked quality of goods	.834			
Simple customs clearance steps	.832			
Transportation done on schedule and right route		.776		
Complete and accurate set of documents		.748		
Scientific timing and line-up for loading documents		.742		
Reasonable shipping and handling costs		.677		
Reputable forwarder		.677		
Reasonable customs clearance costs			.838	
Staff available to monitor, supervise, grasp the number of goods loaded on board			.812	
Fast customs clearance time			.784	
Reasonable exchange rate policy			.772	
Employees of the company mastering customs operations			.760	
The importing party paying for the goods in accordance with commitments				.786
Short liquidity processing time				.750
The set of payment documents sent quickly				.709
Convenient and fast liquidity by electronic means				.679

From the above results, it is seen that EFA model is consistent with the actual data with 4 groups of factors and can be used for multiple regression analysis.

#### **4.3. Multiple linear regression analysis**

In order to determine, measure and evaluate the influence of factors on the satisfaction of respondents, I used the multiple linear regression method for 04 influencing factors obtained from the above EFA, including (1) preparation of goods; (2) registration of customs procedures; (3) delivery of goods; (4) liquidation, in which the dependent variable was the effectiveness of implementing the export forwarding process

According to stepwise regression, the following results were obtained. This result gives the value  $R^2 = 0.909$ ; The  $R^2$  value indicates that the independent variables in the model can account for 90.9% of the variation of the dependent variables.

		Model
		1
R		.955 <sup>a</sup>
R Square		.912
Adjusted R Square		.909
Std. Error of the Estimate		.245
Change Statistics	R Square Change	.912
	F Change	330.026
	df1	3
	df2	96
	Sig. F Change	.000
Durbin-Watson		1.810

#### **5. Conclusions and recommendations**

This research shows that there are 4 internal factors affecting the performance of corporate forwarders and the difference between the influence of each factor. According to the analysis results, the performance of craft villages in all scales is assessed by the respondents as to be at an average level. This is an important basis not only for the forwarders to review and reevaluate their development policies and improve operational efficiency; build and develop export forwarding in general and export forwarding by sea in particular in Vietnam. Therefrom, we propose some solutions as follows:

- Completing the preparation of goods for export

The employees of the forwarders are green in implementing the export processes, which makes the preparation of goods difficult. The employees should pay more attention to preparing export-related documents to avoid difficulties in customs clearance. The forwarders also need to link with corporate producers to study the production processes in order to produce high quality products both in model and packaging to create prestige for the businesses. Providing support in capital and technology to create favorable conditions for production.

- Completing customs clearance quickly

In order for the customs declaration to take place quickly and accurately, the declarers need to be honest and have good qualifications, avoid fines and annoyances, avoid obstruction of customs clearance, affecting the delivery time and warehouse storage cost. Therefore, the employees of the forwarders need to have good relationship with customs agencies as well as officers to avoid harassment by export declaration procedures and the multiple inspections, which increases loading and unloading costs and storage time. Thanks to that, the goods are released quickly, ensuring prestige with customers.

- Completing the liquidation stage

If using T/T method, the forwarders should consider many factors of their partners, including whether the solvency of the partners is strong or not, whether the partners are reputable, fast or slow; when using T/T, the enterprises must be proactive about the relationship and establish the prestige of both partners. They must be creditable partners, have long-term relationships and the forwarders can control the risk levels in payment process of the goods. If the partners have long-term relationships with each other, the forwarders should use L/C less often because each L/C amendment is very expensive, not only for the buyer but also for the seller. However, if the partners are in the first cooperation, L/C is the most secure method to help the forwarders avoid risks in payment process. Choosing a reputable bank in payment is also a good solution for the forwarders. This is particular appropriate in the current context of profound international economic integration.

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# A STUDY OF THE RELATIONSHIP BETWEEN COMPANY CHARACTERISTICS AND THE LEVEL OF DISCLOSURE ON SUSTAINABILITY REPORTING OF LISTED FIRMS IN MINING, MANUFACTURING AND CONSTRUCTION SECTORS ON THE VIETNAMESE STOCK MARKET

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## **Abstract**

*The aim of corporate disclosures on sustainable development report is to communicate information on economic, environmental and social aspects to external investors and other stakeholders. Based on literature review and multiple regression analysis, this research examines the actual practices of corporate disclosures on sustainability reporting and measures the impact of several factors related to company characteristics on the disclosure level of listed companies in mining, manufacturing and constructions sectors on the Vietnamese stock market. The results reveal that that the level of disclosure of listed companies in the three chosen sectors on economic, environmental and social issues is lower than 50%. In particular, the level of disclosure of economic information reached the highest rate of 41% whereas the levels of disclosure of environmental and social issues were only 21% and 38% respectively. Other research findings show that several factors related to company characteristics such as company size, media exposure, composition of the board and women in the board of directors have positive impacts on the level of disclosure of sustainable development of listed companies in mining, manufacturing and construction sectors on the Vietnamese stock market.*

**Keywords:** *company characteristics, level of disclosure, sustainability reporting,*

## **1. Introduction**

Environmental degradation, resource depletion, global warming, climate change and human rights violations have become threatening issues nowadays, therefore, businesses need to disclose these information to meet the needs of society

(Sheldon and Park, 2011). Before taking measures to improve the above problems, the first mission of businesses is to disclose fully, accurately and promptly information related to their corporate strategy, environmental and social information. Therefore, sustainability reporting was born to address the information needs of stakeholders. The initial format of sustainable reporting was designed in the 1970s under the reports on social issues attached with financial reports in European countries. In the 1980s, environmental issues such as waste discharge, environmental pollution were disclosed in replace of social problems of the previous decade. By the end of the 1990s, both social and environmental information was disclosed with traditional financial reports (Hahn and Kühnen, 2013). During economic development process, sustainability report has been called Triple Bottom-Line Report, Report on Corporate Social Responsibility, etc.,

Sustainability report is a tool through which businesses can disclose information related to three pillars: economy, environment and society (SSI & IFC, 2013). Sustainability reporting helps to improve the image of businesses to related parties including investors, creditors, customers, society, etc., Based on sustainability report, these stakeholders could assess impacts of an enterprise's business on the environment and its remuneration policies for employees. Moreover, sustainability reporting is also a channel for State authorities to issue appropriate policies to operational conditions of enterprises. From macro perspective, sustainability reporting benefits all stakeholders.

Sustainability reporting plays an important role in society, however, depending on the extent of each industry's impact on the environment, the levels of corporate disclosure requirements for each sector are different. According to Circular no. 155/2015/TT-BTC on Guidelines for information disclosure on securities market, smokeless industries such as finance, insurance, arts, etc., are not required to disclose environmental information whereas these information must be disclosed by mining, manufacturing and construction sectors. These three sectors cause direct impacts on natural resources, the exploitation of resources results in depletion of unrecoverable natural resources, consumption of a lot of materials negatively affecting environment, emissions and waste directly discharged into environment, making the living environment seriously affected. In the context of raising concerns about environmental issues, there should be a research on the level of corporate disclosure of these three sectors and to identify factors affecting the level of disclosure of sustainability reporting in order to promote social responsibility as well as increase the level of corporate disclosure on sustainability reporting. Therefore, this research was conducted to investigate the relationship between company characteristics and the level of disclosure on sustainability reporting of mining, manufacturing and construction sectors on the Vietnamese stock market.

## **2. Literature review**

The integration of policy and international best practices on environmental and social issues into corporate strategy and governance has become an inevitable trend to help businesses fully detect and promptly response to business risks. Pham Thi Minh Hong (2016) analyzed the application of sustainability reporting in Australia, Brazil, China, India, South Africa and the United States based on collected secondary data. In addition, the study also evaluated the status of disclosing sustainability reports of large corporations in Vietnam such as Bao Viet Holdings (BVH), Vietnam Dairy Products Joint Stock Company (VNM), etc., Finally, recommendations for Vietnamese businesses were given to improve the level of disclosure of sustainability reporting.

In 2018, Leeds University's survey on environmental safety and social indicators of 150 countries showed that no country in the world met the basic needs of people in terms of sustainable level of using resources (Daniel et al., 2018). In the US, only 9 social indicators were achieved, but all 7 indicators related to the environmental issues were violated. In Vietnam, 6 social indicators including life expectancy, minimum income, nutrient requirements for daily life, employment rate, education and democracy have been satisfied, however, CO2 emissions index exceeded environmental safety threshold.

By surveying the 50 largest firms in the US and Japan, Ho and Taylor (2007) studied the impact of business attributes on the level of disclosure of economic, social, and environmental issues. Based on quantitative regression models using six independent variables such as firm size, corporate profitability, leverage, liquidity, industry membership, national disclosure environment, the study results have shown that firm size positively affected the level of information disclosure on sustainability reporting but profitability, liquidity and industry membership negatively affected the level of disclosure of sustainability reporting.

Michelon G. (2011) collected and analyzed the information gathered from the 2003 annual reports of businesses based on the criteria of global reporting initiative 2002 (GRI 2002). GRI 2002 is an international practice of developing a sustainable development report to publish economic, social and environment information. The study conducted a survey of the level of information disclosure of 114 companies in the UK and the US. The study used hypothesis testing method based on regression model to study the relationship between the scale of publication of sustainability report and the factors related to firm's reputation, including commitment to stakeholders, profitability, market profitability, media exposure, size, age, industry, leverage, membership of the Dow Jones sustainability index and country. The study showed that commitment to stakeholders and media exposure had a positive impact on the publication of sustainability reports. In addition, the higher the level of

commitment to stakeholders was, the more information about environmental and social responsibility would be disclosed.

Arayssi et al., (2016) showed the results of women's participation in management would increase the corporate release of environmental, social and governance information. The social information disclosure score of Bloomberg and the results of panel data regression analysis showed that increased participation of women in the board of directors would directly affect the corporate disclosure of governance, environment and society. Female directors will promote the implementation of social and community programs, thereby improving the profile related to corporate social responsibility.

By using secondary data, Nguyen Thi Xuan Vy (2017) studied factors affecting the level of disclosing Vietnam's sustainability reporting. The study results showed several main factors including corporate governance, mission, vision and strategy, attributes of listed companies, cultural, social and legal factors had impact on sustainability reporting.

Pham Ngoc Toan and Le Thi Thu Hong (2017) showed that there was a positive relationship between six independent variables including firm size, board composition, liquidity, profitability, financial leverage, auditing firm and the level of information disclosure of financial statements of listed companies on Ho Chi Minh City Stock Exchange. Based on these research results, the authors recommended listed companies increase the level of information disclosure to enhance their credibility and easily attract investors on the stock market.

Dang Ngoc Hung et al., (2018) surveyed 289 companies listed on the Ho Chi Minh Stock Exchange and tested a regression model with six independent variables: profitability, independent audit, firm size, financial leverage, number of members of the board of directors, and CEO concurrently serving as director of the board. By surveying the level of disclosure of social responsibility information and sustainable development, the study showed that among 289 firms, 74 firms, accounting for 26% did not disclose information, while only 73 firms, accounting for 25% announced social responsibility information, and only 15 firms, accounting for 5% used GRI standards to prepare its sustainability reporting. The research results showed there were three factors including profitability, independent audit and firm size affecting the level of information disclosure on social responsibility and sustainable development.

Karaman et al., (2018) conducted an empirical investigation of the factors affecting GRI based on sustainability reporting and the relationship between these factors with the business operation of the aviation industry from 2006 - 2015. The study used regression method with various independent variables including firm size,

free cash flow per share, profitability, leverage, growth, ownership structure and firm value. The regression results showed firm size and financial leverage were positively related to the level of reporting sustainability information. On the contrary, the ownership variable had negative relationship with the sustainability report. In addition, free cash flow per share, growth and profitability had no significant impact on sustainability reporting, as a result, sustainable reporting did not play an important role in improving the firm's performance.

In summary, not many in-depth studies focusing on the three pillars of sustainable development reports including economy, environment and society have been found in Vietnam. Differences in content and levels of disclosing sustainability reporting in each sector on the Vietnamese stock market and the reasons for those differences have not been explained. The mining, manufacturing and construction sectors are considered to have direct impact on the environment, deplete natural resources, consume a lot of raw materials and discharge waste to the environment. Therefore, this study was conducted to identify factors related to company characteristics affecting the level of disclosure of sustainability reports, measuring the level of information disclosure on sustainability reporting of listed companies in the mining, manufacturing and construction sectors in order to enhance the disclosure of sustainability reporting of listed companies on the Vietnamese stock market.

### **3. Research methodology**

Previous studies in the literature review have shown the relationship between company characteristics and the level of disclosure of sustainability reporting information. Therefore, this study will focus on the factors related to company characteristics to re-test the above relationship for listed firms on the Vietnamese stock market.

#### ***3.1. Hypotheses***

Based on the literature review and collectible data, six hypotheses are established as follows:

Hypothesis H1: The level of disclosure of sustainability reporting is positively associated with the company's size.

Hypothesis H2: The level of disclosure of sustainability reporting is negatively associated with the percentage of the director of the board concurrently serving as the CEO.

Hypothesis H3: The level of disclosure of sustainability reporting is positively associated with the company audited by Big Four.

Hypothesis H4: The level of disclosure of sustainability reporting is positively associated with the company frequently appearing in mass-media.

Hypothesis H5: The level of disclosure of sustainability reporting is positively associated with a larger number of non-executive members in the board of director.

Hypothesis H6: The level of disclosure of sustainability reporting is positively associated with a larger number of women in the board of directors.

### 3.2. Research models

The regression model to measure the impact of company characteristics on the level of disclosure of sustainability reporting of listed companies on the Vietnamese stock market could be described as follows:

$$SR = \beta_0 + \beta_1 CS + \beta_2 Co + \beta_3 AU + \beta_4 ME + \beta_5 IB + \beta_6 WB$$

The measurement of variables used in the models is explained in Table 1 below.

**Table 1. Measurement of variables in the regression model**

Type of information	Variables	Description (Measurement)
	$\beta_0$	Factors not included in the model
The level of sustainability reporting	SR	99 criteria published by Vietnam Chamber of Commerce and Industry (VCCI) were used to measure the level of sustainability reporting, of which there are 18 criteria of governance and strategy, 12 criteria of environmental issues and 69 criteria of social - labor issues. Each criterion was given 1 point if the company fully disclosed relevant information and was given 0 point if that company didn't disclose such information. The total score of 99 criteria is the dependent variable value on the level of sustainability reporting.
Company size	CS	Logarithm of total assets of a company
Audit firm	AU	Dummy variable: Equal to 1 when the audit firm is Big Four and 0 otherwise
Media exposure	ME	Dummy variable: Equal to 1 when the company is ranked top 100 sustainable enterprises in Vietnam and 0 otherwise
Composition of the Board	IB	The number of non-executive members of the board of director
Women on Board	WB	The number of women in the board of director
Concurrent	Co	Dummy variable: Equal to 1 when director of the board concurrently serving as the CEO and 0 otherwise

(Source: Summary of literature review)

### 3.3. Data

Secondary data was collected from annual reports, sustainability reports (if any) and websites of all 477 listed companies in the manufacturing, mining and

construction sectors on Vietnam's stock market. Preliminary survey was conducted on the whole population of 477 companies to evaluate the current level of disclosure of sustainability reporting. The sample of 169 listed companies, accounting for 35% of 477 listed companies in the above three sectors was chosen for in-depth survey based on the Corporate Sustainability Index 2018 (CSI 2018) criteria.

#### **4. Current level of disclosure of sustainability reporting of listed companies in mining, manufacturing and construction sectors on the Vietnamese stock market**

##### ***4.1. Number of companies disclosing information of sustainability reporting***

477 companies listed on Hochiminh and Hanoi Stock Exchange were surveyed to evaluate the level of disclosure of environmental and social-labor information. Survey results are shown in Table 2 below.

**Table 2. Number of companies disclosing information on sustainability reporting**

*(Unit: no. of companies)*

<b>Sectors</b>	<b>Environmenta l and social- labor information disclosed in annual reports</b>	<b>Sustainabilit y reports integrated in annual reports</b>	<b>Independent sustainabilit y reports</b>	<b>Number of companies disclosing sustainable developmen t information</b>	<b>Number of companies on HOSE and HNX</b>
<b>Manufacturing</b>	145	80	11	<b>236</b>	<b>251</b>
<b>Mining, quarrying and oil and gas extraction</b>	22	6	1	<b>29</b>	<b>35</b>
<b>Construction</b>	126	33	1	<b>160</b>	<b>191</b>
<b>Total</b>	<b>293</b>	<b>119</b>	<b>13</b>	<b>425</b>	<b>477</b>

*(Source: Survey results of 477 listed companies)*

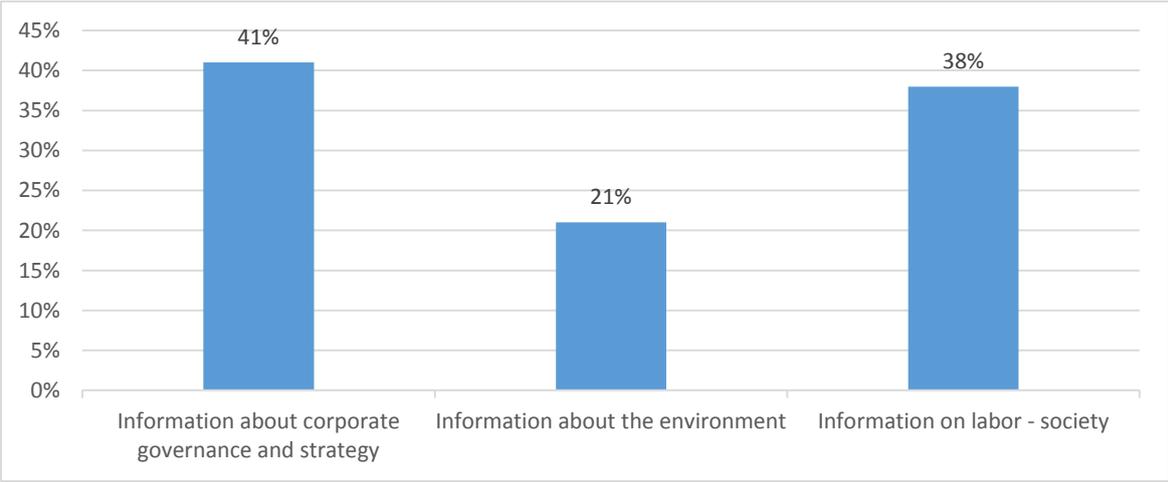
At December 31<sup>st</sup> 2017, there were totally 477 listed companies in the mining, manufacturing and construction sectors on Hochiminh and Hanoi Stock Exchange, of which 293 companies had annual reports disclosing environmental and social-labor information, 119 companies published sustainability reports integrated in annual reports, and only 13 companies had independent sustainability reports. Disclosures of environmental and social-labor information in annual reports of 293 companies revealed low level of disclosure, lack of factor analysis affecting business sustainable development. Disclosed indicators in annual reports were short-term, lacked long-term targets and no quantification of business sustainable development strategy was found. Among 119 companies having sustainability reports integrated in annual

reports, several big firms had adequate level of disclosure, clearly presented their strategies and goals for sustainable development. However, many reports of companies operating in mining, manufacturing and construction sectors failed to disclose how to manage and measure sustainable development indicators of key areas such as quantified emissions and waste in the environment. For the 13 companies having independent sustainability reports, the quality of these reports was evaluated to be closed to the best international practices of sustainability reports based on GRI standards. Although the Ministry of Finance and State Securities Commission of Vietnam do not require independent sustainability reporting, these 13 companies voluntarily disclosed full information of sustainable development. The typical examples of these best disclosure companies are Baoviet Holdings (BVH), Vietnam Dairy Products Joint Stock Company (VNM).

**4.2. Evaluation of the level of disclosure of sustainability reporting of listed companies on Vietnamese stock market based on CSI 2018 criteria.**

Survey of the disclosure of sustainability reporting of 169 companies in mining, manufacturing and construction sectors listed on Hochiminh and Hanoi Stock Exchange was conducted based on CSI 2018 criteria. 99 indicators related to economic, social and environmental aspects of the CSI 2018 were chosen to assess the level of disclosure of sustainability reporting of 169 listed companies. The survey results are shown in Graph 1 below.

**Graph 1. The level of disclosure of sustainable development reports of 169 listed companies**



*(Source: Survey results of 169 listed companies)*

Based on CSI 2018 criteria, the in-depth survey results showed that the level of disclosure on governance and strategy of 169 listed companies was 41%, the highest level compared to 38% for disclosure of labor and social issues and 21% for

environmental disclosure. This revealed that majority of businesses failed to meet the requirements of disclosure on corporate governance and strategy. In addition, 94% of businesses had no corporate strategy towards 17 sustainable development goals by the United Nations of the 2030 agenda for sustainable development. Most businesses did not build appropriate risk management policies including full steps such as identifying, evaluating, measuring, managing and monitoring risks.

Environmental information was published with the lowest level of 21%. This showed that listed companies were not ready to announce the impact of business operations on the environment. Mining, quarrying and oil and gas extraction, manufacturing and construction sectors having direct impacts on the environment were required to publish environmental information in accordance with Circular no 155/2015/TT-BTC but the level of information disclosure remained very low. Despite being involved in mineral exploitation, listed companies in the mining sector did not have clear plan for management and protection of mineral resources. In the same way, most manufacturing companies having direct impact on land resources did not have practical activities to protect land and treat wastewater. Besides, listed companies in the construction sector failed to reduce greenhouse gas emissions during construction process. Although all the listed firms in mining, manufacturing and constructions sectors are required to fully disclose information related to the exploitation and usage of resources, the actual low level of disclosure of environmental issues was worrying.

The level of disclosure of social - labor issues in mining, manufacturing and construction sectors was 38%, showing that listed companies did not pay much attention to labor practices and human rights. An obvious evidence was that these companies disclosed few information related to occupational safety, labor health and female labor protection. Disclosure of democracy in the workplace and the effectiveness of collective labor agreement was not found, therefore, it was questionable whether human rights of employees were protected in the surveyed listed companies.

#### ***4.3. Descriptive statistics***

The statistical data of Table 3 showed among 169 listed companies in mining, manufacturing and construction sectors on Hochiminh and Hanoi Stock Exchange, the average number of companies using audit service of Big Four (AU variable) was 40.24%. The percentage of non-executive members in the board (IB variable) was quite high, reaching 64%. 13.4% of listed companies in the surveyed sample was ranked top 100 sustainable enterprises in Vietnam (ME variable). The number of women in the board of directors (WB variable) was extremely large at 95.73%. Other

variables related to company size (CS) and concurrent position between CEO and director of the board (Co) were shown in Table 3 below.

**Table 3. Descriptive statistics of independent variables**

No	Variable	Mean	Median	Maximum	Minimum
1	<b>AU</b>	0.402439	0	1	0
2	<b>IB</b>	0.64061	0.67	1	0
3	<b>ME</b>	0.134146	0	1	0
4	<b>CS</b>	6.18311	6.185	8.33	4.77
5	<b>Co</b>	0.280488	0	1	0
6	<b>WB</b>	0.957317	1	4	0

(Source: Survey results of 169 listed companies)

#### **4.4. Regression results**

The regression model using the six factors affecting the level of disclosure of sustainability reporting of listed companies in Vietnam shows the following results:

$$SR = -0.76 + 11.05 CS + 0.1 AU + 6.09 ME + 11.4 IB + 2.41 WB - 1.09 Co$$

**(11.87)**      **(1.79)**   **(3.23)**      **(6.12)**      **(1.07)**      **(1.09)**

$$\text{Adjusted R-squared} = 29.64\%; \text{ Durbin Watson} = 1.4$$

The adjusted R-squared value is 29.64% indicating that independent variables can explain 29.64% variation in the level of sustainability reporting (SR). From the regression results, at the 5% significance level, the change of audit service by Big four (AU) and concurrent position between CEO and director of the board (Co) are not statistically significant. The remaining four variables of company size (CS), media exposure (ME), composition of the board (IB) and women in the board of directors (WB) have statistical impacts on the level of disclosure of sustainability reporting.

First, company size (CS) has positive effect on the level of disclosure of sustainability reporting, therefore, hypothesis H1 is accepted, and this result is in agreement with positive results in Dang Ngoc Hung et al., (2018), Ho and Taylor (2007), Karraman et al., (2018). When company size is large, it is under greater pressures from stakeholders, such as investors, network of customers and suppliers, community, therefore big companies have a higher level of disclosure of sustainable development to meet the information needs of stakeholders.

Second, the media exposure (ME) has a positive impact on the level of sustainability reporting (SR), therefore hypothesis H4 is accepted and confirms the results in Michelon (2011). When the company was honored by the mass media as

top 100 sustainable enterprises in Vietnam, it would try to enhance the company's image in public eyes. Therefore, branded companies regularly update and disclose information on sustainable development. Besides, listed companies also commit to community about their corporate social responsibility to disclose full information on sustainability reporting on a timely manner.

Third, composition of the board (IB) also positively impacts the level of sustainability reporting, therefore, hypothesis H2 is accepted. This result agrees with positive results in Pham Ngoc Toan and Le Thi Thu Hong (2017). The more non-executive members in the board of directors there are, the more likely the level of disclosure of sustainability reporting is high. The reason is that non-executive members in the board control the quality of information related to sustainable development more independently and objectively. This also creates a counterbalance mechanism between executive and non-executive members of the board to monitor each other to help improve the transparency of disclosure.

Fourth, women in the board of directors (WB) have positive impacts on the level of sustainability reporting. Therefore, hypothesis H6 is accept and this result is in line with Arayssi et al., (2016). This explains gender differences in environmental concern because women's environmental and social - labor concerns is normally higher than men's concerns. Therefore, if the company has higher percentage of women participating in the board of directors, the level of environmental information disclosure is likely to be higher.

## **5. Conclusion**

Based on the preliminary survey on 477 listed firms and in-depth survey on 169 listed firms in the mining, manufacturing and construction sectors about the level of disclosure of economic, environmental and social aspects of sustainability reporting, the research results showed the actual level of disclosure of sustainability reporting of listed firms was quite low (less than 50%). Although the three sectors chosen in the sample have direct impacts on the environment and society, this low level of disclosure of listed firms in these sectors is worrying. In addition, the regression results showed there was a relationship between company characteristics and the level of disclosure of sustainability reports. Company characteristics illustrated by company size, media exposure, composition of the board and women in the board of directors have positive impacts on the level of corporate disclosure of sustainable development. This is of great significance for listed companies on the Vietnamese stock market to improve the level of disclosure of sustainability reporting to meet the information needs of stakeholders.

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# THE IMPACT OF EMPLOYEE PERCEPTION OF INTERNAL CSR PRACTICES ON ORGANIZATIONAL COMMITMENT WITHIN THE BANKING SECTOR IN VIETNAM

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## **Abstract**

*This study investigates the relationship between perceived internal CSR practices and Organizational Commitment (OC) among employees in the banking sector of Vietnam. Data were collected through a self-administered survey method from 300 employees of major bankings of Vietnam. The findings of the study reveal that perceived internal CSR practices have a significant and strong positive relationship with an organizational commitment among employees. Practices in corporate social responsibility explained 64.8% of the total variation on employee commitment. It is acknowledged that having a particular concern for the welfare of employees will boost the employee's commitment and by extension, their performance and ultimately the growth of the organization.*

**Keywords:** *affective organizational commitment; banking sector; internal corporate social responsibility.*

## **1. Introduction**

Firms have come under increasing pressure to pursue socially responsive behavior from a variety of stakeholder groups including shareholders, employees, investors, consumers, and managers (Kapstein, 2001). These strengthened relationships ensure corporations minimum conflicts with stakeholders and maximum loyalty from all stakeholders. As the importance of CSR for enterprises, significant strands of research have investigated whether there are financial payoffs to increased social responsiveness, the influence of perceptions concerning corporate social responsiveness on customers, the attractiveness of social performance to investors, the importance of employees in corporate social responsiveness.

Recent studies establish a positive link between employees' perceptions of their companies' corporate social responsibility and their effective organizational commitment (Turker, 2009; Rego, Ribeiro, & Cunha, 2010; Stites & Michael, 2011). The paper makes contributions to the literature basic of investigation the relationship between internal CSR practices in ISO 26000 on Social Responsibility in the maintenance of employees' and affective organizational commitment. Social

responsibility aims to provide practical guidance related to fulfilling social responsibility, identifying and engaging with stakeholders, and enhancing the credibility of reports and statements on social responsibility for the benefit of all organizations. In the context of internal CSR, ISO 26000 provides a useful guideline for companies to respect and recognize human rights, employment, and employment relationships, conditions of work and social protection, social dialogue, health and safety at work as well as human development.

The banking sector is playing a key role in improving the societies through the price and value financial assets, monitoring borrowers, managing financial risks and organizing the payment system in Vietnam. Bankers include social and environmental added value to their business operations and actions by implementing various financial initiatives such as microcredit and microfinance schemes, ethical, social and environmental funds, low-income banking, and removal of barriers to credit access (Prior & Argandoña, 2009). In this way, banks and financial organizations adopt CSR practices that are claimed to be beneficial for society and sustainable economic development. The banking sector seems to be the most sensitive to the impact of CSR in Vietnam because an outstanding feature of the banking industry is that it is subject to more diverse and complex stakeholders than the most other sectors of the economy. This study investigates the relationship between perceived internal CSR practices and Organizational Commitment (OC) among employees in the banking sector of Vietnam.

## **2. Review of literature**

The concept of CSR has evolved from social issues to social responsiveness and has been developed over the decades to social responsibility. McWilliams and Siegel (2001) define CSR as actions that appear to further some social good, beyond the interests of the firm and that which is required by law. Rupp, Ganapathi, Aguilera, and Williams (2006) defined as activities, decisions, or policies, that organizations engage in to effect positive social change and environmental sustainability. into the companies' become a bottom line for most of them. Also, international institutions have developed indicators this direction (Global Reporting Initiative - GRI, UN Global Compact, ISO 26000).

CSR has internal and external practices. Internal CSR involves social responsibility practices for employees especially in the area of their safety, health, and well-being, training, and participation in the business, equality of opportunities and work-family relationship (Vives, 2006). In terms of labor practices, ISO 26000 prioritizes the creation of jobs, as well as wages and other compensation paid for work performed as an organization's most important economic and social impacts. In

the context of internal CSR, ISO 26000 provides a useful guideline for companies to respect and recognize human rights, employment, and employment relationships, conditions of work and social protection, social dialogue, health and safety at work as well as human development.

Organizational commitment has three major components: (i) a strong belief in the organization and acceptance of the organizations' goals, (ii) a willingness to exert considerable effort on behalf of the organization, and (iii) a definite desire to maintain organizational membership (Mowday, Steers & Porter, 1979). Allen and Meyer (1990) distinguish between three forms of organisational commitment: affective commitment which denotes “an emotional attachment to, identification with, and involvement in the organisation”, continuance commitment which reflects “the perceived costs associated with leaving the organisation” and normative commitment “which reflects a perceived obligation to remain in the organisation”. Studies show that each of these forms of commitment is associated with labour turnover and intentions to leave the organisation but suggest that a stronger relationship exists between affective commitment and a range of desirable employee outcomes which include: attendance, job performance, stress, health and work-nonwork conflict (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Since CSR forms an integral part of an employee's work experience employee perceptions of a firm's ethics, values, and social responsiveness are likely to play a significant role in shaping effective commitment.

Maignan, Ferrell, & Hult (1999) indicated that market-oriented and humanistic cultures lead to proactive corporate citizenship, which will result in improved levels of employee commitment. Peterson (2004) showed a direct link between employee perceptions of corporate citizenship and OC. He also found that belief in the importance of the social responsibility of businesses by the employees resulted in a stronger relationship between corporate citizenship and OC. Rupp, Ganapathi, Aguilera, and Williams (2006) argued that the social performance of an employer can encourage employees away from counterproductive behaviors, such as rule-breaking, daydreaming on the job, damaging property, theft, and padding expense accounts. Ubius and Alas (2012) indicated that the top managers value the welfare of the local community and nation, ethics and the economic effectiveness of their company can positively influence their employees' motivation and OC. Rego, Ribeiro, and Cunha (2010) investigated that perceptions of discretionary corporate citizenship toward employees were significantly better predictors of an effective commitment than our perceptions of economic, ethical, and discretionary corporate citizenship toward the community. Turker (2009) showed the significant relationship between CSR to social and non-social stakeholders, employees, and customers were significant predictors of

OC. Rettab, Brik, and Mellahi (2009) conducted a research to examine the link between CSR activities and three measures of organizational performance: financial performance, employee commitment, and corporate reputation. The results show that CSR has a positive relationship with employee commitment. When employees feel that the organization is committed to them, they tend to develop a sense of duty toward the organization and are willing to reciprocate with more cooperative and supportive actions, and with the greater level of commitment. Based on the research cited above, this study hypothesizes that:

H<sub>1</sub>: Employment and employment relationships will be positively related to affective commitment.

H<sub>2</sub>: Conditions of work and social protection will be positively related to affective commitment.

H<sub>3</sub>: Social dialogue will be positively related to affective commitment.

H<sub>4</sub>: Health and safety at work will be positively related to affective commitment.

H<sub>5</sub>: Human development and training in the workplace will be positively related to affective commitment.

### **3. Methodology**

There are 32 items to measure the variables of the research model (see Table 2). All items are measured by 5-point Likert scales, which were 5 – strongly agree, 4 – agree, 3 – not sure, 2 – disagree and 1 – strongly disagree base on ISO 26000 guidance on internal CSR for an employee.

According to Hair, Black, Babin, and Anderson (2010), the sample size used in the exploratory factor analysis was determined by the minimum (min = 50) and the number of variables included in the model. The proportion of samples compared to an analytical variable was 5/1 or 10/1, which included 32 observations and therefore the sample size is at least  $32 * 5 = 160$  observations. Green (1991) suggesting that in the regression model the minimum sample size was determined by the empirical formula  $50 + 8 * \text{independent variables in the model}$ . This study has 08 independent variables so the sample size is at least  $50 + 8 * 5 = 90$  observations.

The sample for the study included 300 employees, selected based on convenient sampling in major banks in Ho Chi Minh City, Vietnam. The survey was administered to all employees of the organization and was carried out in 2018. The survey was conducted by the self-administered method, and employees were

encouraged to complete the survey during work time. Table 1 presents descriptive statistics of demographic characteristics.

**Table 1. Descriptive of demographic characteristics**

Demographic characteristics	Percentage
<b>Gender</b>	
Male	45
Female	55
<b>Age</b>	
Less than 25 years	25
26 - 30 year	30
More than 30 years	45
<b>Level of education</b>	
Not complete bachelor	5
Bachelor and others	95
<b>Management level</b>	
Nonmanagement	75
Lower level managers	25
<b>Job tenure</b>	
0-5 years	40
6-10 years	45
More than 10 years	15

#### **4. Results and discussion**

##### ***Reliability and Validity***

The reliability and validity of indicators in the model are tested by the system of criteria. As can be seen from Table 2, the lowest Cronbach's alpha value is 0.807, exceeding the cut value of 0.70 recommended (Hair, Black, Babin & Anderson, 2010). Convergent validity was estimated by factor loading. The value of Kaiser-Mayer-Olkin (KMO) was 0.868 (between 0.5 and 1.0) which means that data is significant for conducting a factor analysis. All loadings of variables are higher than the 0.50 (see Table 2). According to Hair, Black, Babin, and Anderson (2010), loadings  $\pm 0.50$  or greater are considered practically significant.

**Table 2. Results of factor analysis and reliability tests**

<b>Items</b>	<b>Question</b>	<b>Factor loading</b>
<b><i>Conditions of work and social protection (Cronbach's Alpha = 0.831)</i></b>		
CS1	I am completely satisfied with income policies.	.751
CS2	I am completely satisfied with reward policy.	.722
CS3	Enterprises ensure social insurance and health insurance premiums and various forms of support for illness and maternity	.709
CS4	Enterprises have organized sightseeing and vacation activities periodically for employees	.650
CS5	Managers have behaved properly to employees	.641
<b><i>Employment and employment relationships (Cronbach's Alpha = 0.807)</i></b>		
ER1	Enterprises always comply with Labor Law and regulations state for employees	.755
ER2	Enterprises ensure equal opportunity for promoting equality for employees	.748
ER3	You found a distinction between men and women and discrimination area/domain in the enterprise	.707
ER4	Enterprises implement the regime of confidentiality of personal information for employees	.666
ER5	The union works effectively and has a clear role in the enterprise.	.665
<b><i>Social dialogue (Cronbach's Alpha = 0.887)</i></b>		
SD1	Enterprise listen and receive suggestions and suggestions of employee	.826
SD2	Enterprise are always willing to accept responsibility before the community when problems occur	.794
SD3	Enterprise receive and handle complaints promptly workers' complaints	.752
SD4	Rules, policies, and methods of employee evaluation of the enterprise are clearly public	.731
SD5	Enterprise regularly participate in charity activities, support the community	.715
<b><i>Health and safety at work (Cronbach's Alpha = 0.851)</i></b>		
HE1	At work, I have the equipment and tools needed to work smoothly.	.837
HE2	The workplace in the organization is comfortable and friendly.	.749
HE3	I work in a comfortable, clean and airy workplace.	.738
HE4	Employees in the enterprise get a health check periodically and have a medical room in the enterprise	.726

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HE5	At work, the organization provides an environment I can focus on working.	.713
<b><i>Human development and training (Cronbach's Alpha = 0.864)</i></b>		
HT1	I am completely satisfied with the training and development policies of the organization.	.787
HT2	I am supported on training time to improve my skills.	.758
HT3	I have always created opportunities for advancement, personal development by the organization.	.729
HT4	The direct manager plays an important role in digging to create and develop employees	.683
HT5	I am well aware of the policies to be trained and developed.	.626
<b><i>Organizational Commitment (Cronbach's Alpha = 0.882)</i></b>		
OC1	I intend to make a long-term commitment to the organization.	.781
OC2	I feel proud to be working in the organization.	.764
OC3	I will stick with the same organization, although there are other places where the offer is relatively attractive.	.732
OC4	I will encourage acquaintances to work in this organization.	.717
OC5	I am pleased to have chosen this organization to work.	.702
OC6	I am willing to sacrifice personal rights when needed to help the organization/work group.	.670
OC7	I am willing to do my best to improve my skills so that I can contribute more to the organization.	.660

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### ***Hypothesis Testing***

The correlation coefficients between the independent variables are generally low and the variance inflation factors do not exceed four suggesting that multicollinearity is unlikely to prove a significant problem (Hair, Black, Babin & Anderson, 2010). All of the hypothesized correlations are significantly different from zero and have the anticipated sign.

The relationship between affective commitment and corporate social responsibility is estimated using OLS and the results are shown in Table 3. The results of the regression analysis reveal that CSR practices have a significant positive relationship with OC. The t statistics and p values present that Employment and employment relationships, Conditions of work, Social dialogue, Health and safety at work, and Human development and training in the workplace have a significant relationship with OC. As anticipated a positive and significant relationship was found

between employee perceptions of internal CSR practices and affective commitment. The results reveal that 68.4% change in organizational commitment is due to these explanatory variables. The results reveal that employees give weight to CSR practices and employees become more committed if the firm is implementing CSR practices. The positive association between CSR practices and organizational commitment is also well supported by many studies cited in the literature review of this study.

**Table 3. Results of regression analysis between CSR practices and OC**

Variables	Beta	t	Sig	VIF
Constant	-.332	-2.021	.044	
Conditions of work and social protection	.234	5.655	.000	1.786
Employment and employment relationships	.217	5.306	.000	1.384
Human development and training	.164	3.969	.000	1.797
Social dialogue	.223	6.392	.000	1.636
Health and safety at work	.244	6.496	.000	1.332
R <sup>2</sup>	0.689			
Adjusted R <sup>2</sup>	0.684			

As Table 3, perceived Conditions of work and social protection has a significant effect on Organization Commitment with a path coefficient of 0.234. perceived Employment and employment relationships have a significant effect on Organizational commitment with a path coefficient of 0.217. Perceived Human development and training has a significant effect on Organizational Commitment with a path coefficient of 0.164. Perceived Social dialogue has a significant effect on Organizational Commitment with a path coefficient of 0.223. The Perceived Health and safety at work has a significant effect on Organizational Commitment with a path coefficient of 0.244.

The results for the control variables reveal that there is no relationship between gender, age, level of education, management level, and job tenure and internal CSR practices perception among employees.

Employees consider firms' level of corporate social responsibility while searching for new jobs. Moreover, employees also consider the firm's CSR practices for their behavior include satisfaction, trust, commitment, engagement. It is acknowledged that having a particular concern for the welfare of employees will boost the employee's commitment and by extension, their performance and ultimately the growth of the organization.

## 5. Conclusions

This study is conducted to investigate the influence of internal corporate social responsibility practices perceptions of employees on their organizational commitment. It is an important study in the context that it provides management insight about employee's behavior regarding CSR of the banking sector in Vietnam. Data were collected through a self-administered survey method from 300 employees of major bankings of Vietnam. The findings of the study reveal that perceived internal CSR practices include Employment and employment relationships, Conditions of work, Social dialogue, Health and safety at work, and Human development and training in the workplace have a significant and strong positive relationship with an organizational commitment among employees. Practices in corporate social responsibility explained 64.8% of the total variation on employee commitment. Though the author proposes to test the model in the banking sector the author recommends that it is applicable to other similar contexts in Vietnam.

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# APPLY TREATMENT STRATEGIES TO MINIMIZE RISKS IN TAX ADMINISTRATION IN VIETNAM TODAY

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## **Abstract:**

*Risk management in tax administration has been implemented by General Department of Taxation since 2011. Assessing and classifying taxpayers based on risk classification criteria have been implemented in almost all stages of the management process. This article focuses on analyzing the situation of using preventive measures and limiting risks that tax agencies are implementing. The article also provides some suggestions for tax authorities to prevent and handle risks more effectively in tax administration. Important solutions include promoting propaganda and support for taxpayers, improving the effectiveness of inspection and examination of taxpayers and quickly modernizing tax administration.*

**Key words:** *risk management, tax administration, tax compliance*

## **1. What is risk management in tax administration?**

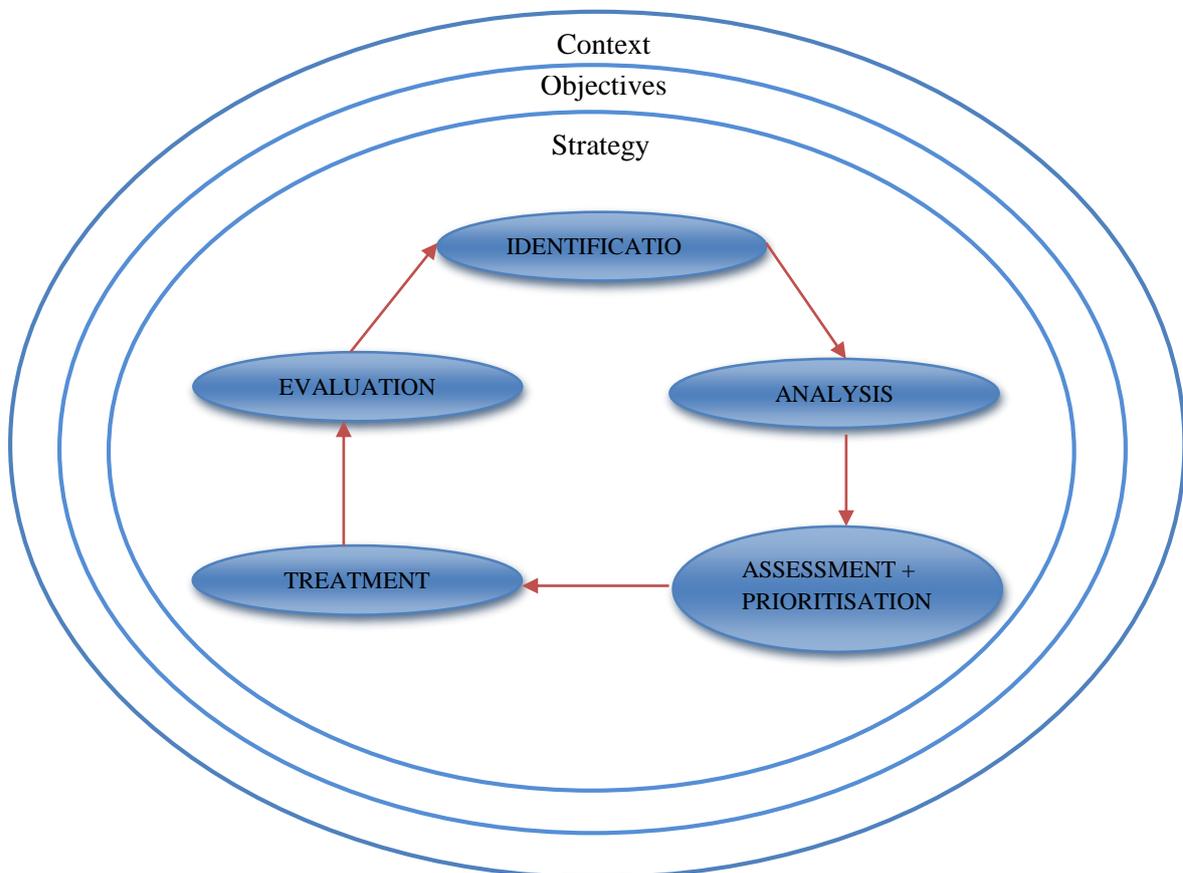
Risk management is defined by European Commission as a systematic management process in which tax authorities carefully select effective processing tools to increase compliance and limit law violations. It is based on available capacity and knowledge of taxpayers' behavior (EC, 2010, page 5). OECD (The Organization for Economic Co-operation and Development) defines risk management in tax administration as a systematic management process in identifying, assessing, rating, and handling types of risks related to tax compliance (such as non-registration risks or non-reporting tax obligations ...) In addition, risk management is an iterative process that includes steps identified to support decision making of regulatory agencies (OECD, 2004, page 8). However, since 2010, OECD has defined risk management as a management process which based on understanding and identifying factors affecting taxpayers' behaviors and their attitudes towards compliance. Thereby, tax offices can implement appropriate measures to handle non-compliance behaviors effectively (OECD, 2010).

In short, risk management is the identification and assessment of tax compliance risks from tax authorities on the basis of collecting and processing taxpayers' behavioral information. Since then, the tax authority has developed a management process and implemented measures to handle high-risk taxpayers and improve tax compliance.

## 2. The basic contents of tax risk management

The model of risk management often used by EU members is shown in figure 2. This model includes the following steps: risk identification, risk analysis, risk assessment and prioritization, treatment and evaluation.

**Figure 2: EU risk management process model**



*Source: Compliance Risk Management Guide for Tax Administration (EC,2010, p.8)*

Risk identification is the first step, which determines the sources and magnitude of the risks that can be a threatening for the organizational activities. At the end of this phase, tax officers have to find out potential risks.

The risks after being identified in the first stage will be analyzed, evaluated, based on criteria such as frequency, severity and consequences of risks. Risk analysis

is often done with the support of computer systems by very large data volumes. However, in some cases it can be done by highly qualified analysts.

Risk assessment and periodization is the phase which tax officers should offer a prioritized list of risks and corresponding qualification. Besides, the available resources in dealing with the risks need to be considered. The goal of risk ranking is to select the highest risk taxpayers to handle. When assessing and ranking risks, it is necessary to consider the possibility and consequences of risks. This can be done by developing a risk ranking matrix.

Risk treatment is the step in which the negative impact of the risk is treated. There are many ways to deal with the risk such as risk transfer, risk reduction, risk covering, etc. These methods are implemented to raise the awareness of taxpayers, reduce the tax debts and increase the tax revenue.

Evaluation is the phase that measures each step of the risk management model. It evaluates the effectiveness and efficiency of the whole process. It is important to consider the evaluation not only at the end of the process but also beforehand (EC, 2010, p8)

### **3. Current situation of measures to prevent and handle tax risks in Vietnam**

#### ***3.1. Some measures to prevent and handle risks in tax administration***

##### *3.1.1. Publicizing the list of companies classified as high-risk tax*

Risk classification has been implemented since 2014. The total number of high-risk enterprises in the country is more than 18,000, of which 4,790 enterprises in 2014, 5,485 enterprises in 2015, 2,650 enterprises in 2016 and more than 5,000 enterprises in both year 2017 and 2018. The list of high-risk businesses is announced monthly by the tax departments. The Ministry of Finance does not allow enterprises at high risk to print invoices themselves They have to use purchase invoices printed by tax authorities.

##### *3.1.2. Monthly publicizing the list of enterprises owing tax debts*

Publicizing the list of enterprises owing tax will make corporations afraid of being affected by reputation. Especially, if it is a joint stock company with shares listed, this information will adversely affect the market price of corporate shares. Since then, enterprises will actively improve the situation of tax payment and avoid late payment. There have been quite a number of enterprises owing tax which named publicly by the tax office since 2013. Some typical enterprises were declared tax debts in 2018 as shown in Table 1:

**Table 1: A number of companies owing tax issued by tax offices in March 2019  
(debt ended January 31, 2019)**

	<b>The name of companies</b>	<b>The amount of tax debt (million dong)</b>	<b>Tax offices</b>
1	Hancorp Joint stock company	3,751	Hanoi Tax Department
2	Hai Long Trading and Service Co., Ltd	3,085	Hanoi Tax Department
3	Electric and Telecommunication Industry Development Company Limited	2,563	Hanoi Tax Department
4	Tam Son Investment and Commercial Joint Stock Company	2,531	Hanoi Tax Department
5	Viet Hai Shipping and Real Estate Joint Stock Company	181,089	Ho Chi Minh city Tax Department
6	No. 8 Investment and Construction Joint Stock Company	114,061	Ho Chi Minh city Tax Department
7	Phu My Construction Investment Joint Stock Company	88,027	Ho Chi Minh city Tax Department
8	Transport Construction and Investment Construction Joint Stock Company No. 584	73,298	Ho Chi Minh city Tax Department
9	Dong A Shipbuilding Industry Joint Stock Company	32,623	Haiphong city Tax Department
10	Electrical and investment joint stock company	20,398	Haiphong city Tax Department

*Source: website Ministry of Finance*

In addition, to manage risks of taxpayers, the department of tax debt management will classify taxpayers and take appropriate measures to collect tax debts. Tax payers will be classified as follows:

- Taxpayers fulfill their obligations to the state budget;
- Taxpayers have tax debts from 60 to 90 days;
- Taxpayers have tax debts from 91 to 121 days;
- Taxpayers have tax debts over 121 days.

For enterprises owing taxes, business owners will be stopped from leaving the country.

### 3.1.3. Strengthening propaganda and tax support activities

Propaganda and support activities for taxpayers contribute to raising awareness of taxpayers on tax obligations. Through propaganda activities, taxpayers will understand the purpose of tax payment, benefits of each taxpayers and benefits of the whole society. Since then, the self-compliance of taxpayers has been improved. By providing and guiding taxpayers with accurate information on tax obligations, tax agencies have helped the taxpayers understand and have the basis to comply with tax obligations fully. Taxpayers reduce the cost of time and money spent on understanding tax laws, avoid tax declaration errors and improve the compliance. The tax authority also reduces the cost of inspection and examination of violations.

The forms of support of the General Department of Taxation can be mentioned as regular updates of tax legal documents and tax policy guidelines on the industry's web portal; direct support and telephone support for taxpayers; conference with taxpayers and training workshops on newly issued policies. Through dialogues with enterprises, tax authorities directly answer questions, feedbacks and problems of enterprises on tax policies and tax administrative procedures, receive feedback from taxpayers. On that basis, the tax authorities shall study and submit to the authorities for amendments and supplements to tax policies, regulations, reorganize tax administration.

The dialogues with enterprises highly appreciated by enterprises can be mentioned as meetings between the Ministry of Finance and corporations on tax and customs administrative policies and procedures and meetings between tax officers and Korean companies held in Hanoi and Ho Chi Minh City. From 2016 to 2018, tax authorities have provided taxpayers with nearly 2,000 publications on tax, documents and held nearly 800 surveys.

**Table 2: Propaganda and supporting methods for taxpayers**

<b>Supporting method</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>1. Direct counseling</b>	254,347,000	287,634,000	293,754,000	317,597,000
<b>2. Phone counseling</b>	625,490	743,279	836,543	921,150
<b>3. Advice in writing</b>	21,035	24,763	28,498	32,170
<b>4. Organizing dialogue with taxpayers</b>	2,589	2,934	3,087	3,125
<b>5. Training on tax administrative policies and procedures</b>	6,923	7,896	8,512	9,238

*Source: General Department of Taxation*

Moreover, the tax authorities publicize information on tax administrative procedures and the process of tax administrative procedures; guide taxpayers to carry out the tax procedures. Tax officers have improved the "one-door" department which provides services for taxpayers quickly.

In particular, the General Department of Taxation has promoted electronic support such as providing information to taxpayers via e-mail, implementing electronic systems to support taxpayers. Services of providing electronic information have created favorable conditions for taxpayers to actively look up and search for information on their tax declaration and payment, on the procedure of tax and on documents related to taxpayers. It helps all taxpayers and individuals to shorten the time to seek information as well as the time for tax payment procedures, minimizing errors in the process of tax declaration and payment.

#### *3.1.4. Implementing tax inspection and tax audit for enterprises at high risks*

The General Department of Taxation has currently issued a set of criteria for analyzing information risks of taxpayers to prepare for tax inspection and examination activities. Based on this set of criteria, tax authorities will classify taxpayers and plan to inspect higher risk group.

*\* The situation of inspecting high risk taxpayers is as follows*

**Table 3: Results of tax inspection**

Year	The number of inspection	The amount of money		The average amount of tax arrears for an inspection (million dong)
		Tax Arrears (billion dong)	Tax Refund and fines (billion dong)	
2016	6,668	5,896.5	1,248.3	884
2017	7,372	6,594.3	1,547.9	894
2018	8,125	7,301.7	1,810.5	898
Total	22,165	19,792.5	4,606.7	893

*Source: General Department of Taxation*

During 2016-2018, the total additional tax after inspection was 19,792.5 billion dong. The value of additional tax after inspection in the period 2016 – 2018 was 898 million dong on an average.

\* *The situation of tax audit:*

**Table 4: The results of tax audit**

Year	The number of tax audit	The amount of money		The average amount of tax arrears for a tax audit (million dong)
		Tax Arrears (billion dong)	Tax Refund and fines (billion dong)	
2016	68,340	4,081.5	2,054.2	59.7
2017	71,895	4,188.4	2,120.7	58.3
2018	77,358	4,396.6	2,239.8	56.8
Total	217,593	12,666.5	6,414.7	58.2

*Source: General Department of Taxation*

During 2016-2018, the total additional value of money collected after tax audits was 12,666.5 billion dong. The value of additional value collected after tax audits in the period 2016 – 2018 was 58.2 million dong on an average. It can be seen that the tax audits with high-risk enterprises have significantly reduced the losses of the state budget.

### **3.2. Assessments**

Firstly, taxpayers are supported effectively by the General Department of Taxation. Tax officers have guided and finalized the tax payment obligations of corporations. Tax authorities have supported and explained tax books to enterprises, including policies in important areas such as oil, electricity, telecommunications, coal, minerals, rubber, chemical substance, finance, banking, insurance, aviation, maritime... Tax authorities Continue to support companies to implement electronic invoices. The General Department of Taxation sent a letter to all companies for the purpose of publicly disclosing the phone number of the hotline to receive information reflecting the negative behaviors of tax officials and proposing the NNT to coordinate with the tax authorities in fighting against negative behaviors. Tax authorities want to solve difficulties and obstacles in the process of implementing tax obligations of taxpayers.

The General Department of Taxation has signed a cooperation agreement with a number of corporations on supporting methods for taxpayers in the process of implementing tax obligations. Every 3 months or 6 months, the General Department of Taxation shall organize direct dialogues with enterprises to solve their problems. Through discussions, taxpayers comply with tax more voluntarily and tax authorities can propose policy recommendations to the State.

Secondly, tax inspection activities are based entirely on risk analysis. The tax administration department for enterprises has implemented inspection work for high risk areas of tax, and flexibly proposed tasks of inspecting newly arising risks. Tax authorities have actively renovated inspection methods on the basis of analyzing risk data by establishing a data analysis department from officers of Inspection, declaration and informatics departments. This department has selected the risk criteria, synthesized and analyzed the tax declaration data and financial reporting data of the business to review and identify enterprises with risks of tax declaration data. The tax authority has also developed implementation procedures, data processing methods and issued guidance documents to all tax administration officials.

Thirdly, there has not been a process for guiding the inspection of price transfer activities. Transfer pricing activities in Vietnam are taking place regularly and continuously in all types of businesses. Activities of price transfer inspection have special characteristics so they should have their own regulations. Skills and methods of price transfer inspection are slowly changing and not keeping up with the rapid development of associated businesses and the diverse complexity of business types. Analyzing records before issuing inspection decisions has not been effectively implemented. Critical risks have not been properly assessed. It takes too much time for conducting inspections.

Fourthly, the number of enterprises inspected is still small and does not meet the requirements of risk management. The selection of objects for inspection is not accurate. The number of inspected enterprises accounts for only about 11% of total enterprises. When selecting low-risk companies, only about 7% of them fulfill good tax obligations. The number of remaining enterprises detected tax fraud at different levels. When conducting inspections at the corporate headquarters, the tax authorities found that about 30% of the previous analysis did not completely coincide with the actual records of documents at the enterprise.

#### **4. Some suggestions**

In order to limit risks in tax administration, the tax authorities need to focus on the following solutions in the coming time:

##### ***4.1. Promote propaganda and support for taxpayers***

It is proved that social ethical standards have a positive impact on tax compliance. Therefore, promoting propaganda for businesses to raise awareness about social ethics standards will have a positive impact on tax administration.

Tax authorities need to carry out a wide range of tax propaganda by opening specialized items on radio, television and major newspapers. Tax agencies need to

regularly hold press conferences, use panels, posters, and banners and publish publications, audio, video clips and leaflets to promote tax services. It is necessary to promptly notify on the list of businesses information that flee, disappear, high tax risks. Tax offices need to regularly update new guidance documents on taxes, propagate and expand the service of tax payment for taxpayers.

In addition, it is necessary to regularly meet and dialogue with enterprises and gather difficulties and problems regarding policies and mechanisms. Since then, the tax authorities have taken measures to reform administrative procedures and reduce tax compliance costs. Tax authorities should timely and effectively implement new policies, especially the Law amending and supplementing a number of articles of tax laws, Special Consumption Tax Laws, Decrees and Circular guiding administrative reform. The socialization of supporting NNT activities should be promoted.

It is necessary to improve the quality of service, publicize the content of new tax policies and praise the achievements of organizations and individuals who have a good sense of compliance with tax payment obligations. It is important to develop a scheme of Center for Supporting Taxpayers of the General Department of Taxation, implement electronic tax payment services and support taxpayers online. Applications for new tax service practice certificates need to be resolved quickly. Tax agents should be more licensed because the appearance of tax agents will greatly support businesses.

#### ***4.2. Improve the effectiveness of inspection and examination of taxpayers***

Tax authorities should enhance inspection and examination at headquarters of tax payers and synthesize, evaluate and withdraw experience of inspection periodically so that inspection teams can support each other's. They should change from traditional inspections to modern inspections, gradually develop and improve electronic inspection skills. They need to focus on inspecting hot topics in society such as transportation business, pharmaceutical business using direct invoices, online business ... Enterprises which have associated transactions and loss and are entitled to exemption and reduction, should be placed in an inspection. Areas of inspection need to be concentrated including transfer of capital, banks, pharmaceuticals, real estate, electricity, oil and gas, post and telecommunications, minerals...

Tax offices need to build software applications to support risk analysis of tax inspection and examination department before conducting an inspection at taxpayer's office. They should upgrade and complete tools to support automated inspection records. The inspection teams analyze risks based on centralized data sources. When analyzing inspection planning, they will score risk criteria by combining information in the tax administration process and critical risk identification skills by industries, sectors, groups of tax payers. Since then tax officers can identify critical risks and

feedback information to the planning department to improve the risk criteria or eliminate ineffective criteria. It is necessary to thoroughly and carefully analyze information on taxpayers to delineate important risks, accurately determine the scope of inspection to shorten the time and improve the efficiency of inspections. Inspectors should apply the integrated reporting system for inspection and build application reporting software to apply in all tax offices.

It is necessary to enhance the coordination between tax administration departments to ensure transparency, clarity of assigned tasks and responsibilities for supporting, inspecting and monitoring among each other's. The coordination with other agencies such as Customs, State Treasury, State Bank should be strengthened to follow the operation situation of enterprises. This makes tax officers easily control and handle violations of tax law in the locality. Tax authorities should closely and effectively coordinate with police agencies to prevent tax crimes, strictly handle cases of purchasing invoices and detect cases of tax evasion.

#### ***4.3. Quickly modernize tax administration***

Modernizing tax administration will create opportunities for taxpayers to reduce the risks of paper handling. It also helps the tax authorities to collect the taxpayer's information quickly, fully and accurately in order to analyze and identify risks. Therefore, it is necessary to accelerate the process of tax administration modernization. Electronic tax declaration, tax payment and tax refund should be carried out widely. It is necessary to take advantage of financial support and experiences from international organizations such as World Bank and OECD. Tax authorities need to step up cooperation with the Information Technology Department to apply information technology in tax administration and provide many convenient tax services for taxpayers.

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# THE IMPACT OF EXTERNAL TECHNOLOGY ACQUISITION ON FIRM PERFORMANCE OF MANUFACTURING INDUSTRY IN VIETNAM

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## **Abstract**

*External technology acquisition has been viewed as an important approach used by firms to achieve higher economic returns. However, only a few studies have been done to evaluate the contribution of external technology acquisition to firm performance, especially in the context of Vietnam. This paper examines the impact of external technology acquisition on firm performance of Vietnamese manufacturing industry by using fixed effects model and random effects model to explore the impact of external technology acquisition, internal R&D activities, and other characteristics of the firm on firm performance. In addition, whether external technology acquisition is complementary or substitutive to internal R&D activities is also examined. The paper implies strategies and policy reforms to enhance the firm performance.*

**Keywords:** *external technology acquisition, internal R&D activities, firm performance, manufacturing industry, FE and RE*

## **1. Introduction**

### **1.1. The rationale of the study**

Economic growth models help clarify the role of capital and emphasize the importance of technology for long-term economic growth (Solow, 1956; Romer, 1986 and Lucas, 1988). The problem is that how to get advanced technology to promote economic growth in general and firm performance in particular? For developed countries, internal R&D activities is the main way to innovate, improve technology level and is an indispensable element in the business development strategies. To contrast, the economy in developing countries is not only poor in capital but also in human capital, thereby "making or buying technology" is a strategy that firms must choose to acquire advanced technology applied to the production process of the enterprise?

The different options for technology development can be classified according to the importance and level of compromise of technological investments in the firm. Firms can acquire technology by accessing from not only internal sources through efforts R&D activities but also external sources through transfer of technology,

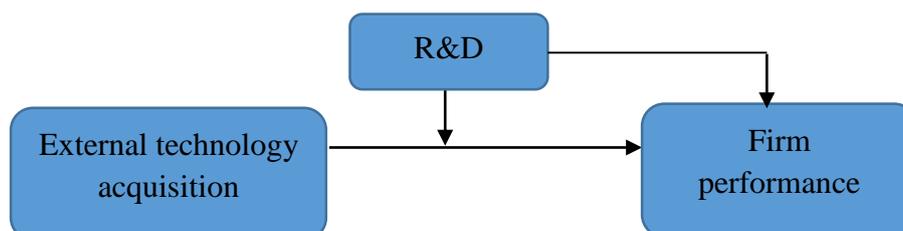
technical licensing agreements or import of capital goods (Tambunan, 2009). However, firms cannot afford to develop or create all the strategically needed technologies through in-house R&D activities owing to high risk, high cost, and restricted time (Cho and Yu 2000; Whangthomkum et al. 2006). Meanwhile, external technology acquisition is the purchase of technology from domestic enterprises, universities or foreign enterprises. This not only helps firms avoid exposure to the costs and risks associated with domestic development (Jones and Jain, 2002), but also deals with customer requirements for timely and better services, to enhance product complexity, and to sustain competitive advantages under further increased competitive pressures (Jagoda et al. 2010). There are two streams of opinions about the relationship between external technology acquisition and R&D activities. As Rotemberg and Saloner (1994) investigated that the competives caused by external ideas that can inhibit internal innovation. They argue in a context like this: companies want to reward employees who are involved in R&D activities to innovate, but when external ideas can easily be used to achieve their goals, then the company results will only reward employees if that internal idea is applied. However, there is also the opposite idea that the competition of external ideas may motivate employees to make more efforts in R&D activities such as Fossfuri and Roende (2009) have suggested.

In fact, many firms utilise external technology acquisition to update and extend their technological knowledge base, choosing a major technology buying strategy to ensure that costs can survive and grow. However, the question is that firms are ability to both purchase external technology and implement R&D activities. Another question is that external technology acquisiton can inhibit the firm of internal R&D activities or the external technology acquisition increases the level of internal R&D efforts.

With the above and specific issues in the context of Vietnam, this study aims to consider the impact of external technology acquisition on the firm performance of Vietnamese manufacturing industry and how this effect is moderated by internal R&D efforts..

### ***1.2. Conceptual framework and theoretical prediction***

This study evaluates the role of external technology acquisition on firm performance in Vietnamese manufacturing industry with the theoretical framework as follows:



**Figure.1. Conceptual framework**

The above model shows that the firm performance is affected by external technology acquisition and internal R&D activities, and internal R&D is also a control variable in the relationship between external technology acquisition and firm performance.

The following sections discuss some hypotheses and their underlying rationale.

### *1.2.1. External technology acquisition and firm performance:*

On the one hand, external technology acquisition brings several benefits to firms. Firstly, it helps them to avoid the high costs of internal development (Noori, 1990), to achieve fast growth (Capon and Glazer, 1987; Granstrand et al., 1992). This allows firms to acquire industry standard technologies and complements for existing products, and to unlock existing technology and innovations (Lowe and Crawford, 1984). As a results, firms can gain greater performance through product or process innovation. Secondly, using external technology can acquire background knowledge on new technological areas through external technology acquisition, thereby increasing the ability of adapting new technologies. This leads to take advantage of new business opportunities (Mowery and Rosenberg, 1989).

On the other hand, external technology acquisition may have disadvantages. Some factors may lead to inefficiencies of the external technology acquisition process, such as the not-invented-here (NIH) syndrome or the lack of absorptive capacity. People that advocate the NIH syndrome believe that it has absolute knowledge in its field, leading to resistance to external technology acquisition, such as new ideas and knowledge (Katz and Allen, 1982). Moreover, even if this acquisition accepted, successful users of external technology may have the difficult of maintaining significant absorptive capacity for assimilating the external technologies to the firms' needs (Cohen and Levinthal, 1990; Rosenberg, 1990). Another issue is that the costs of transfer processes may also decrease the efficiency of external technology sources (Williamson, 1985; Lowe and Taylor, 1998). These costs associated with finding relevant technology providers, negotiating with providers, transferring technologies to the firm, and finally transforming them into new innovation. The logic of the arguments above and the evidence provided in existing literature imply that *external technology acquisition positively affects firm performance*.

### *1.2.2. The moderating role of internal R&D*

The impact of external technology acquisition on firm performance may also depend on internal R&D activities.

Internal R&D has a distinct impact on demand for external technology. If internal efforts succeed, they will reduce demand for external technology. This can be seen from

the opposite view. A situation in which companies will acquire external technology if their internal efforts fail. Driven by "making and buying" view, internal R & D is an alternative to external technology (Williamson 1985; Pisano 1990). The reasons can be that using external technology is competitive factor with internal R&D and thus, R&D group was threatened by external technology and could use his political power in the organization to prevent this approach. Therefore, the second theoretical prediction in this study is as follows: *The greater the level of a firm's internal R&D efforts, the stronger the negative effect of external technology acquisition on a firm's performance.*

### ***1.3. Literature review***

Recent researchs have evaluated the contribution of external technology acquisition to firm performance.

Some studies investigate that external technology acquisition have positive effects on firm. Zahra's (1996b) survey of 112 new U.S.-based biotechnology ventures finds that external technology acquisition is positively associated with firm performance in terms of sales and market growth. Moreover, Jae-Seung Han et al. (2012) investigates the positive impact of external technology acquisition on market value of firms.

In contrast, some researches show that external technology acquisition is negatively associated on product and firm performance. For example, Jones et al. (2001) measure the propensity to acquire technology externally by type (product, process and total). Their analysis of 188 subsidiaries shows that external technology acquisition is negatively associated with product, market and financial performance measures (contrary to theoretical expectations), but internally available resources enhance the effect of total external technology acquisition on product performance. Although, this study explore the moderating effects of internally available resources on the relationship between external technology acquisition and firm performance, they have not specified internally available resources, their moderator, as internal R&D efforts. Moreover, Kuen-Hung Tsai and Jiann-Chuyan Wang (2005) use the analytical sample comprising a total of 341 Taiwanese electronics-manufacturing firms over the period from 1998 to 2002. The least square dummy variable analysis method reveals that external technology acquisition does not provide a significant contribution to firm performance per se; however, the positive impact of external technology acquisition on firm performance increases with the level of internal R&D efforts. Verifications for robustness and the split-sample analyses both validate the results in the setting of larger firms. However, this study investigates the moderating role of internal R&D input or the extent to which external technology acquisition effects a firm's performance, and how this effect is moderated by internal R&D efforts.

Ki H. Kang, Gil S. Jo & Jina Kang (2015) point out that external technology acquisition has an inverted U-shaped relationship with subsequent technology innovation performance, and that is not complementary to internal R&D activities. We thus confirm that external technology acquisition has to be seen as a double-edged sword and that managers need to be aware of the potentially negative effects of strong diversity of the firm's external technology acquisition sources on internal R&D and subsequent innovation performance.

Driven by this "between making and buying" view, internal R & D is an alternative to external technology (Williamson 1985; Pisano 1990), all above studies examines the role of external technology acquisition in creating innovation, affecting on firm performance although may be positive or negative and investigates whether external technology acquisition is complementary or substitutive to internal R&D activities.

#### 1.4. Research question

- Is the relationship between external technology acquisition and internal R&D complementary or substitutive?

- Using external technology have positive or negative impact on firm performance?

- Does the result of above question change if exploring the moderating effects of internal R&D?

## 2. Methods

### 2.1. Variable definitions and measures

\*) Dependent variable – Firm performance

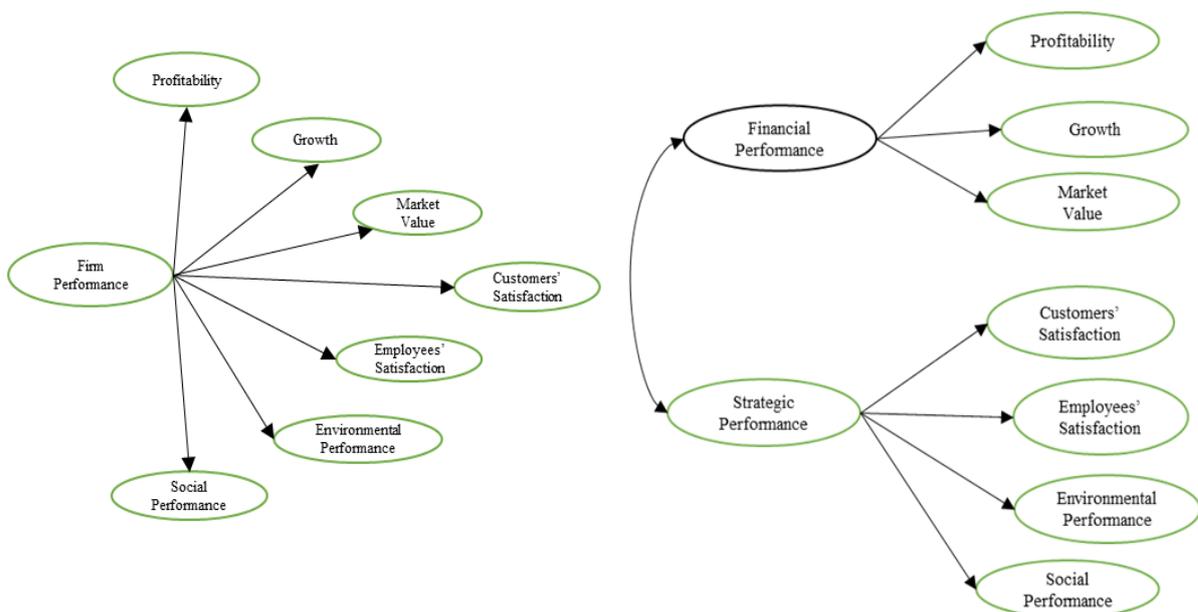


Figure 2. Model for Firm Performance

Indicators used to measure different aspects of performance have already been submitted to factor analysis by several authors who found multidimensional structures (Baum & Wally, 2003; Cho & Pucik, 2005; Combs et al., 2005; Fornell et al., 1996; Johnson & Greening, 1999; Rowe & Morrow, 1999; Sila & Ebrahimpour, 2005; Sila, 2007; Silverman, Nickerson, & Freeman, 1997). A complete analysis of multidimensional constructs needs to explore the existence of second order structures that can group first-order dimensions. Glick, Washburn, and Miller (2005) suggest that firm performance could be conceptually represented by one second-order construct reflecting itself on its first-order dimensions (Figure 2, model on the left). The Venkatraman and Ramanujam (1986) conceptual model suggests an alternative representation, in which performance would have two second order dimensions: the financial one, represented by profitability, growth and market value; and the operational domain, that includes non-financial competitive aspects, like customer satisfaction, quality, innovation, employee satisfaction and reputation (Figure 2, model on the right).

With the main purpose for a firm to acquire external technology is to enhance their growth through value added so in this study, firm performance – the dependent variable is measured by value added.

*\*) Independent variables*

According to Capon and Glazer, fully external technology activities refer to the acquisition of fully functioning technology from another firm. Thus, the total expenditure of purchasing external technology defines the external technology acquisition in this study. Firms can buy from another firms, research center and universities or schools.

This research uses some several important controls into account to provide more conclusive evidence for analysing effect of external technology acquisition on firm performance. These controls include R&D, firm size, the license of technology and transfer contract.

In addition, labor and physical capital are often used as a proxy for firm size in empirical studies; in particular, KL – the average of physical capital on labors, indicating the level of capital per labor; VNG – the average of investment on labors, indicating external investment.

*\*) Measures*

For panel data used in the study, the author conducted a Hausman test to determine the regression model as a model of a fixed effect model or an explanation model and a random error exist or not, from which the author chooses to use a fixed effect model or a random effect model.

*Fixed effect model (FE)*

$$Y_{it} = (\alpha + u_i) + X'_{it}\beta + v_{it}$$

In which,  $i$  and  $t$  are the indexes according to space  $i$  and time  $t$ , respectively.

( $i = 1, 2, \dots, N$  is an index of space units;  $t = 1, 2, \dots, T$  is an index of time units);  $u_i$  is a fixed effect according to the observation group  $i$  or time period and contained in the intercept coefficient,  $u_i$  can correlate with other variables in the regression model;  $v_{it}$  is a random error with a mean of 0 and a constant variance.

In fixed dynamic models, only intercept coefficients according to different groups have the same coefficient of variables. It is possible to estimate the fixed square effect with the dummy variables (LSDV) or the internal impact estimation method (within effect estimation).

*Random effect model (RE)*

$$Y_{it} = \alpha + X'_{it}\beta + (u_{it} + v_{it})$$

The RE model assumes that:  $u_i$  is not correlated with other variables and it is a component in random error

The variance of random error is determined by space units or over time

The RE model has the same intercept and slope coefficient according to the observations, the difference is in the error part.

**2.2. Sample and data**

To empirically test the impact of external technology acquisition on firm performance, this study uses a panel dataset carefully integrated from the annual enterprise census data from 2000 to 2016 and the enterprise statistic of technology data from 2012 to 2016 of the Vietnam General Statistics Office (GSO). This panel dataset includes 2490 firms completely balanced over a six-year period from 2012 to 2016 (totaling 14940 observation)

Table 1 lists the descriptive statistics of the major variables within the sample and shows the average values and standard deviations of some major variables.

**Table 1: Descriptive statistics of major variables within the sample  
(n=....., 2012-2016)**

<b>Variables</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Lnva</b>	7,3850 (1,7756)	7,4032 (1,8119)	7,5238 (1,8261)	7,6209 (1,8629)	7,6797 (1,9257)
<b>Lnpurchase</b>	6,5422 (2,1329)	6,7875 (2,1746)	7,0878 (2,2606)	7,2120 (2,2576)	7,4080 (2,2208)
<b>Patents</b>	0,0064 (0,1279)	0,0064 (0,1404)	0,01004 (0,1771)	0,0141 (0,2266)	0,0167 (0,2351)
<b>KL</b>	130,5061 (208,3673)	133,149 (208,316)	140,8974 (220,1524)	162,4944 (281,3026)	175,0239 (285,7525)
<b>LC</b>	11,782 (9,987)	12,047 (7,694)	13,259 (8,873)	14,916 (11,086)	16,692 (33,361)
<b>VNG</b>	0,5741 (0,4414)	0,5750 (0,4220)	0,6089 (1,8611)	0,5879 (0,4622)	0,5768 (0,5833)

*Source: Author's calculations from the Enterprise Survey data*

Some points are worthy of mention. In general, all variables tend to increase during this period. For example, the number of value added rises gradually by approximately 1% by year in the sample while the total amount of expenditure spent on external technology acquisition increase by 3,2% each year that is threefold than the former. Moreover, this table also shows that there is a dramatical rise in the number of patents with the average growth rate 38,6%. These suggests that there is an increasing trend toward investing in technology acquisition.

Some factors, such as KL, LC and VNG, are invested during the development process of firms.

### **3. Results**

#### **3.1. Research model**

The specific model to assess the impact of external technology acquisition on firm performance in Vietnam manufacturing industry is proposed as follows:

$$Lnva_{it} = \alpha_0 + \alpha_1 lncpmua_{it} + \alpha_2 lncpmua_{it} * RD_{it} + \alpha_3 lnqmdn_{it} + \alpha_4 sangche_{it} + \alpha_5 KL_{it} + \alpha_6 LC_{it} + \alpha_7 VNG_{it} + c_{it} + u_{it}$$

In which: Lnva is value added of the firm

Lncpmua is the total value of purchasing technology

Lnqmdn show the size of firm

Patents is the total number of patents

KL = K/L is the capital per person

LC = w/L is the income per person

VNG is the external investment

### 3.2. Result

According to Hausman test results, it is accepted by H1 hypothesis at the 1% significance level. This means that the fixed effect model (FE) is preferred in research to the random effect one (RE)

**Table 2: Regression results of the impact of external technology acquisition on firm performance**

	Fixed effect model	Random effect model
Independent variable (Inva)	Coefficient	Coefficient
Lnpurchase	0,0373*** (0,0098)	-0,1037*** (0,0109)
Lnpurchase*RD	-0,0199*** (0,0033)	-0,0116 (0,0038)
Lnsiz	0,8184*** (0,042)	2,5057*** (0,0353)
Patents	-0,0132*** (0,0045)	-0,0081* (0,0050)
KL	-0,0002*** (0,00003)	0,0002*** (0,00004)
LC	0,0059*** (0,0003)	0,0089*** (0,0004)
VNG	-0,0109* (0,0062)	-0,0146** (0,0069)
_cons	6,455942*** (0,5102)	4,3662*** (0,4676)
Hausman	7148,63***	

Notes: '\*\*\*', '\*\*' and '\*' show estimated coefficients statistically significant at 1%, 5% và 10%

Source: Author's calculations from the Enterprise Survey data

Using Hausman test for model selection results in the acceptance of fixed-effect analysis. The model employed to evaluate the effect of external technology acquisition on firm performance is associated with the majority of estimated coefficients statistically significant at 1%.

Estimated results with variable coefficient of price equals 0.0373, showing that purchasing technology in manufacturing industry in Vietnam has a positive impact on the added value of firm or enhance the firm performance. In fact, the current technology and machinery in the manufacturing industry as well as the industry in general is considered to be obsolete compared to other countries. This is because of the limit of technology expenditure. Moreover, the current economic growth in Vietnam is growing in width so this kind of technology purchased still increases the firm performance.

Meanwhile, the coefficient of variable  $\ln\text{cpmua\_RD}$  is equal to -0.0199, implying that the purchase of external technology to support internal R&D activities will reduce the performance of enterprises. Moreover, the coefficient of Patents variable also receives negative value, indicating that internal R&D activities has not yet had a positive impact on the firm performance. According to the recent survey results of the FIRST-NASATI project, it also helps to explain the above results when it shows that nearly 85% of enterprises themselves carry out R&D activities but only about 14% of enterprises have activities in coordination with external partners to research and implement product innovation for firms. The number of patents may increase but this R&D activities have not applied or deployed to meet the demand of firms.

For other representative variables of firm, the coefficient of the variable LC (per capita income) and size of firm ( $\ln\text{size}$ ) have positive impacts on the firm performance, although at a low level. In contrast, the coefficient of variable KL - the level of capital per worker and the ratio of external capital - VNG are factors that inhibit the development of enterprises.

#### **4. Discussion and conclusions**

The above estimation results show that purchasing external technology for enterprises in manufacturing industry in Vietnam has a positive impact on the firm performance. However, this activity does not contribute to the internal R&D activities of enterprises to promote innovation activities. In the near future, acquiring external technology is still the main source of contribution to the technology factor of the enterprises but Vietnam needs the orientation for purchasing high technology products instead of most out-of-date ones. At the same time, firms should promote the cooperation and association with research institutes, universities, research centers and scientists as a channel for technology acquisition to develop the technology market in Vietnam.

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# SOLUTIONS TO PROMOTE SUSTAINABLE DEVELOPMENT OF VIETNAMESE COMMERCIAL BANKS

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## **Abstract:**

*The sustainability of banking operations has been discussing more in developed countries since the 2008 financial crisis. Bank managers believe that sustainable implementation is important to the success of the bank in the future. IFC survey (2002): 86% reported positive changes of integrating ESMS system into their business; 19% saw changes as significant; 0% reported negative change. UNEPFI survey (2007): 26 financial institutions in CEE to assess the state of sustainability awareness in the finance sector. Over 90% of institutions that had implemented sustainable business practices experienced clear benefits such as reputation enhancement and cost savings. This study assesses the situation and proposes some solutions to promote sustainable development of Vietnamese commercial banks.*

**Keywords:** *Basel II, Sustainable development, Vietnamese Commercial Banks.*

## **1. Introduction**

Currently, Vietnam's commercial banking system is being restructured in association with bad debt handling to ensure the safety, health and sustainability of credit institutions, thereby creating a firm premise for reducing inflation, renovating growth model aimed at sustainable economic development. After the 2011-2015 restructuring process, the financial capacity of commercial banks has been improved, according to their audited financial statements, bad debts compared to the outstanding balance of entire system has been declined to below 3%, this is a safe level prescribed by the State Bank of Vietnam. Some weak commercial banks are resolved through selling bad debts to VAMC (Vietnam Asset Management Company), or merging with the others, particularly, there are some commercial banks sold for SBV for zero Vietnamese dong.

Sustainable development at Vietnamese commercial banks is now at an early stage, some banks are interested and considering environmental issues in their credit

decisions, implementing cost-saving measures on environment in internal operations. However, the implementation of sustainable development is not synchronous, there are many barriers to develop a sustainable model, for example, many banks do not have environmental and social risk management system to evaluate and classify projects according to level of environmental and social risks; lack of implementation solutions and high implementation costs. Sustainable development to improve competitiveness, create prestige and position for the bank becomes an inevitable trend in international integration process.

## 2. Methodology

To calculate financial indicators, data was collected from the audited financial statements of 12 commercial banks including 3 SOCBs and 9 JSCBs. List of 12 commercial banks are as follows:

**Table 1. List of 12 commercial banks**

No	Banks	
1	VCB	Joint Stock Commercial Bank for Foreign Trade of Vietnam
2	Vietinbank	Vietnam Joint Stock Commercial Bank for Industry and Trade
3	BIDV	Joint Stock Commercial Bank for Investment and Development of Vietnam
4	ACB	Asia Commercial Joint Stock Bank
5	Techcombank	Vietnam Technological and commercial Joint Stock Bank
6	MBBank	Military Commercial Joint Stock Bank
7	Eximbank	Vietnam Export Import Bank
8	SHB	Saigon - Ha Noi Commercial Joint Stock Bank
9	Martimebank	Vietnam <i>Maritime</i> Commercial Joint Stock Bank
10	VPBank	Vietnam Prosperity Joint Stock Commercial Bank
11	Sacombank	Saigon Thuong Tin Commercial Joint Stock Bank
12	VIB	<b>Vietnam International Commercial Joint Stock Bank</b>

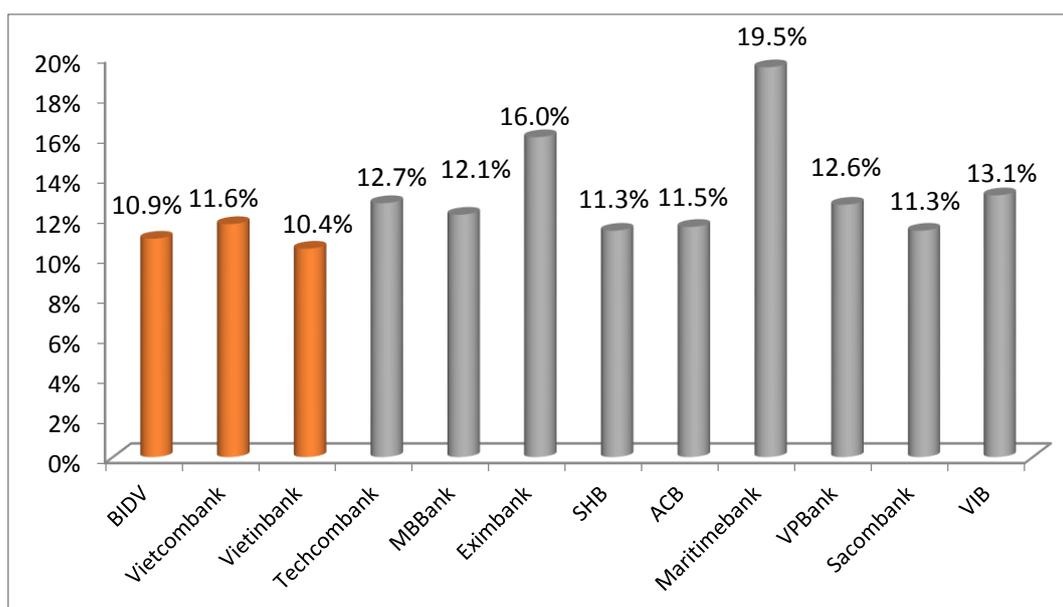
Descriptive statistical methods are used to process collected data of 12 banks over the period of 2008-2017 and to calculate financial indicators such as: income structure, bad debts, proportion of net interest income and non-interest income.

Comparative method is used to compare sustainable development level of Vietnamese commercial banks to branches of foreign banks in Vietnam and other banks in the world.

### 3. Sustainable development of Vietnamese commercial banks

#### 3.1. Capital adequacy ratio (CAR)

According to banks' annual reports, many of them have a relatively high CAR ratio compared to State-owned Commercial Banks (SOCBs). In 2017, Maritimebank has the highest rate among these banks, which was 19.48%, followed by Eximbank was 15.98%. In 2017, Vietcombank has the highest CAR among 3 SOCBs, followed by BIDV and Vietcombank, which accounted for 11.13%, 10.9% and 10.4%, respectively.



**Figure 1: Minimum CAR of commercial banks in 2017**

*Source: Annual report of commercial banks in 2017*

Many commercial banks are planning to increase their charter capital to ensure CAR to meet Basel II standards in 2019. ACB is proactively improving CAR through various activities such as issuing more than 3 trillion of Tier 2 bonds, monitoring and managing loan portfolio from many aspects such as term and industry with the aim of improving risk coefficient. By the end of 2017, CAR and Tier 1 capital was at 11.49% and 7.77%. BIDV plans to raise their charter capital through selling shares to foreign investors and actively works with partners and related agencies to speed up this process. In 2017, MBBank completed the plan to increase their charter capital to VND 18,155 billion, an increase of 6% compared to 2016. VCB successfully implemented the plan to increase Tier 2 capital to ensure minimum CAR and improve the ability to meet Basel II standards. Up to now, Vietcombank and VIB has already met the Basel II standards.

According to Circular No. 41/2016/TT-NHNN, banks must maintain minimum CAR of 8% as defined in financial statements thereof; and to calculate

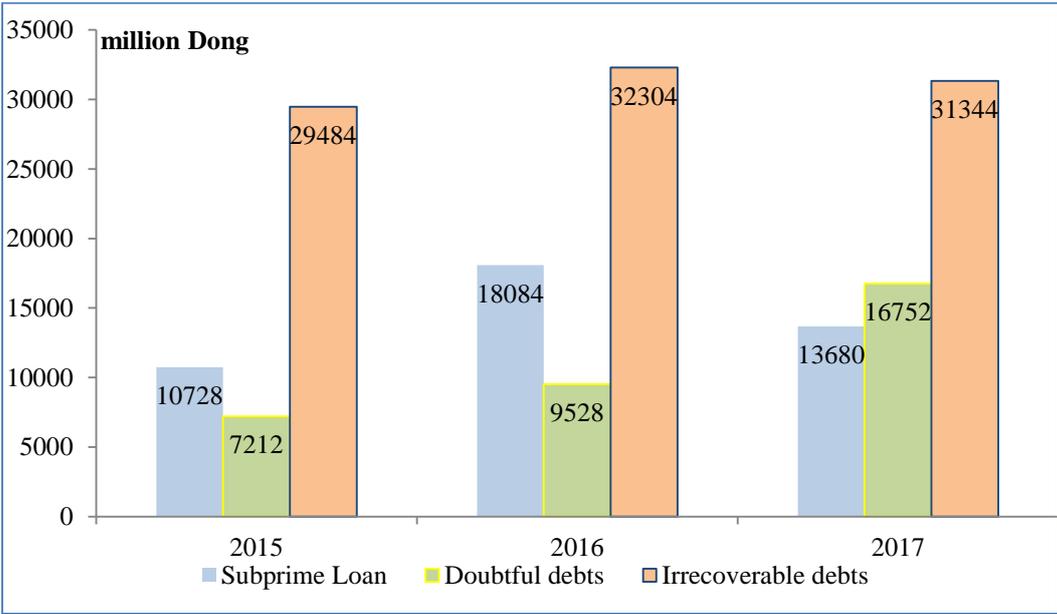
CAR, required capital for credit, market and operational risk need to be included. Thus, regulation on minimum CAR decreases from current level of 9% to 8% in 2020. However, the determination of CAR according to Circular No. 41 will reduce this ratio compared to current regulations. In order to implement the Basel II project, beside Circular 41/2016/TT-NHNN, SBV has determined a roadmap to issue guidelines to calculate CAR according to Internal rating base, initial is the Foundation Internal Rating Based (FIRB), expected to be consulted by financial institutions in 2019. Circular No. 13/2018/TT-NHNN on internal control system of commercial banks to create a legal framework to implement Three Pillars of Basel II.

Data were provided for a total of 206 banks, including 111 large internationally active (“Group 1”) banks, among them all 30 G-SIBs, and 95 other (“Group 2”) banks. All Group 1 and Group 2 banks (including all 30 G-SIBs) would meet the average Common Equity Tier 1 (CET1) minimum capital requirement of 4.5% and the CET1 target level of 7.0% (i.e. including the capital conservation buffer). This target also includes the G-SIB surcharge where applicable but does not include any countercyclical capital buffers.

The report also concluded that the current level of Tier 1 capital in Europe is higher than in the U.S and other regions (BIS, 2018). The average Tier 1 capital of 12 commercial banks in Sri Lanka in 2017 was above 10% and average CAR of these banks was above 15%. In 2018 Sri Lanka banks started to apply Basel III. Countries in Southeast Asia such as the Philippines, Singapore and Malaysia have developed policies and roadmap to comply with Basel III.

**3.2. Potential bad debt**

**Figure 2. Bad debts of commercial banks**



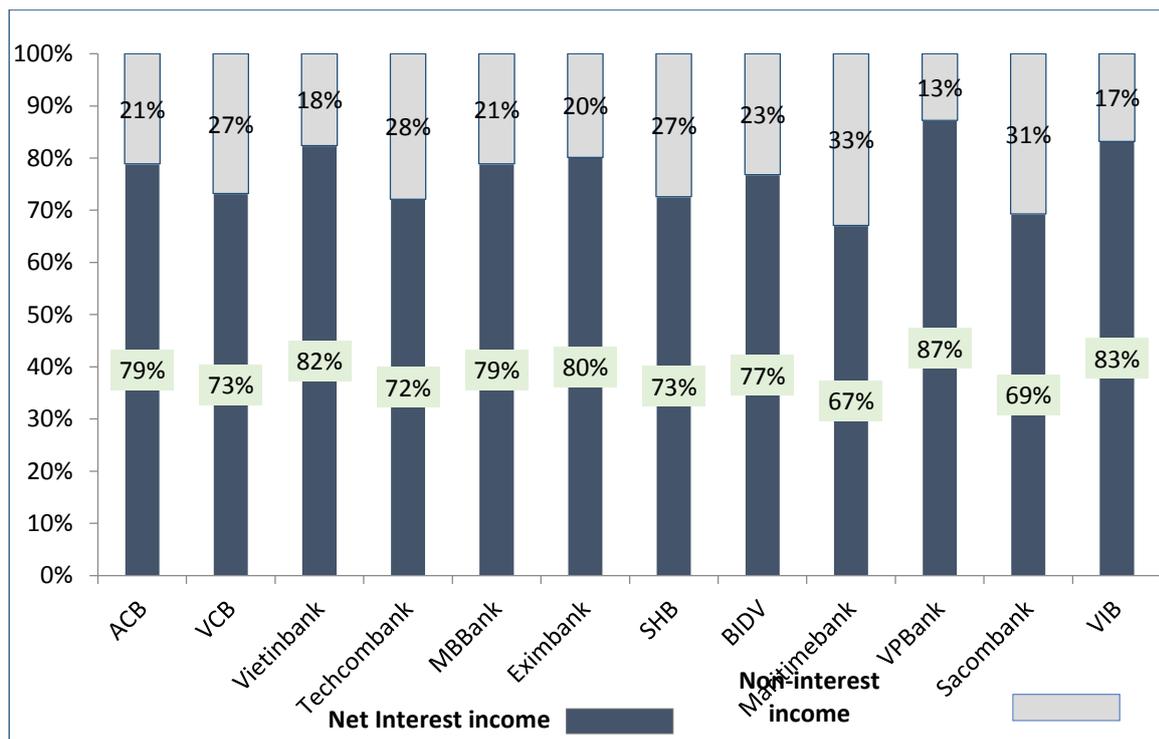
Source: Annual report of commercial banks

Bad debts reported by commercial banks tend to increase after restructuring phase (2011-2015), although bad debt ratio of 12 commercial banks in 2017 is lower than in 2016, which accounted for 2.04% and 2.31% respectively, scale of bad debts is increasing. In 2016, total bad debt of 12 banks reached VND 59,916 million, increased by 26.34%, equivalent to VND 12492 million. In which, subprime loan tended to increase sharply to 68.6%, equivalent to VND 7,356 million. In 2017, bad debts of these commercial banks reached VND 61,776 million, increase 3%, equivalent to VND 1,860 million compared to 2016. In which, doubtful debts increased sharply to 75.8%, equivalent to VND 7,224 million. Thus, bad debts of commercial banks have not been thoroughly dealt with after restructuring, bad debts are still high in the banking system. However, these bad debts are reported by banks only and not included bad debts sold to VAMC and other amounts taken out of the balance sheet, thus this figure does not reflect fully and substantially the bad debts.

According to the National Financial Supervisory Committee, bad debt of the banking system in 2017 is about 9.5% due to potential bad debts in restructuring debts. According to the National Committee of the SBV in 2017, the process of dealing with bad debts of credit institutions was faster, especially in the last months of the year. Credit institutions limit transferring debts to VAMC, handling bad debts, securing assets, using risk provisions and other measures. In 2017, about VND 70 trillion of bad debts were handled, an increase of 40% compared to 2016. In which, debt collection from customers accounted for 54%, using risk provisions accounted for 42.3%, selling collaterals accounted for 2.3%. However, the bad debt settlement results of the credit institution have not been as expected due to selling bad debts at market price is limited; The process of restructuring commercial banks is weak and process of buying banks with 0 dong is slow. The balance of provision for credit losses increased sharply. In 2017, provision for credit losses, specific provision and general risk provision were estimated to increase by 24.7%, 26.3%, 22.1% compared to 2016, respectively.

### ***3.3. Banks' revenue depends on credit***

Income of commercial banks is mainly from interest; some banks have net interest income of nearly 90% of total income. Traditional non-credit services will be the cornerstone of sustainable income for banks. Development of non-credit services contributes to diversify banking products and services, provides customers with many utilities, and disperses risks in business operations, gradually reduce the dependence on revenue from credit activities, increases income and profit from service activities, creates stable revenue for the bank.



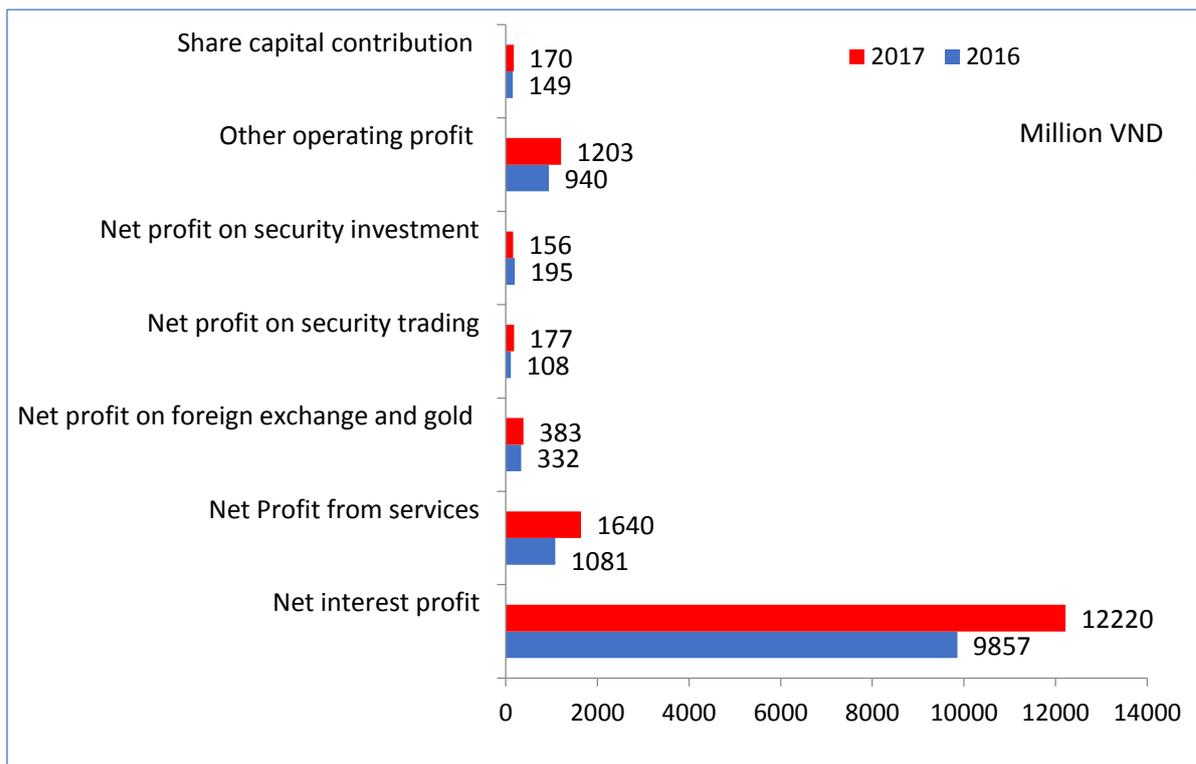
**Figure 3. Net interest income and non-interest income**

*Source: Annual report of commercial banks*

In the period of 2008-2017, commercial banks had a high rate of net interest income in total income including VPBank (87%), VIB (83%), Vietinbank (82%). Maritimebank and Sacombank have the highest proportion of non-interest income compared to other banks, which is 33% and 31% respectively. Commercial banks need to maintain and improve the quality by ensuring publicity, transparency, simple procedures, easy accessibility to attract more customers and maximize utilities and customer's choice.

Net interest income accounted for the highest proportion of total income at 76.6% in 2017, followed by income from other activities (10.3%), income from securities trading and income from equity contribution accounted for a small proportion of total income. Net interest income in 2017 increased by 24% to 2,364 million VND, net income from service activities increased by 51.7%, equivalent to VND 559 million, net income from securities investment in 2017 decreased by 19.8%, equivalent to VND 38.5 million compared to 2016.

Branches of foreign banks have lower interest income than domestic commercial banks. HSBC's net interest income is 61.62% in 2016, and 64.94% in 2017, ANZ's in 2016 was 62% and plummeted to 49.48% in 2017. Countries in the Euro area have a relatively high proportion of non-interest income in total income, which was 40.39% in 2013.



**Figure 4. Average income structure of commercial banks**

*Source: Annual report of commercial banks*

#### **4. Solutions to promote sustainable development of Vietnamese commercial banks**

##### ***4.1. Raise equity of commercial banks***

The objective of raising equity of banks is to meet the requirements and regulations on safety and expansion of banking business. According to Circular 36/2014/TT-NHNN and Circular No. 19/2017/TT-NHNN, there are quite a number of indicators calculated according to the bank's own capital such as minimum CAR (9%), the credit level for a customer or a group of related customer must not exceed 15% and 25% of the equity, respectively; The ratio of capital contribution to buy shares must not exceed 40% of charter capital and the reserve fund of the bank. Thus, if a bank wants to expand credit limit for customers, increase capital investment or improve IT system, facilities and risk management system, they must increase their charter capital.

In order to increase capital, it is necessary to take measures in the short-, medium- and long-term, including: retaining earnings, sources from reserve funds to supplement charter capital, issuing shares, increasing capital contribution from existing strategic shareholders, issuing long-term deposit certificates, issuing convertible bonds, mobilizing more strategic partners, issuing shares on international financial market.

Foreign investors simultaneously withdrawing capital in many credit institutions recently put pressure on CAR and equity. Thus, Vietnamese commercial banks need to have plans to increase their capital to ensure CAR according to international practices and sustainable development. Remaining sufficient capital helps the banks expand their business operations, such as opening more branches, diversifying products and services, contributing capital to joint ventures. Moreover, increasing the equity may ensure the ability to protect stakeholders' interests when facing risks or losses. In addition, to reach sustainable development, commercial banks need to have sufficient capital to finance green projects such as renewable energy, green technology, anti-climate change and biotechnology.

#### ***4.2. Improve assets quality of commercial banks***

The Government issues Resolution 42/2017/QH14 on pilot settlement of bad debt of credit institutions to deals with pilot policies for settlement of bad debts and treatment of assets tied to bad debts. New in the Resolution No. 42/2017/QH14 is that credit institutions, branches of foreign bank, trading organizations which handle bad debts can publicly and transparently sell bad debts and collaterals to the eligible credit institutions at market prices, probably greater or smaller than the principal balance of the debt.

Settlement of bad debts of the commercial banking system in past few years has witnessed positive changes from completing the policy mechanism, bad debt has reduced in term of rate but not in term of debt ratio, debt group 4 and 5 tend to increase in 2017. Solutions to resolve bad debts can be as follows:

(i) Completing the legal framework on debt trading market which still has many limitations, as the market participants are limited in accordance with the law, the seizure and handling of security property has many legal obstacles, rights and responsibilities. Debt and seller's responsibility have not been clearly defined. Currently, only VAMC and DATC of the Ministry of Finance operate effectively, while 28 Asset Management Companies (AMC) of commercial banks have very limited resources and most of them only handle internal debt for the parent banks themselves. Therefore, it is necessary to complete a legal framework on the debt trading market for various types of participants, continue to strengthen capital capacity for VAMC, DATC, optimize asset portfolio and sell at reasonable prices to increase the ability to convert these debts into cash. These solutions help to boost the debt trading market effectively.

(ii) The SBV has taken drastic measures to properly and adequately determine the size and structure of NPLs, including potential bad debts and forcing commercial banks to deal with bad debts, and selling bad debts at reasonable prices.

(iii) Implementing measures of securitizing bad debts, restructuring debts and issuing shares to companies, handling bad debts through cooperation and joint ventures with companies for the purpose of sharing risks and increase the ability to recover capital from handling these debts; Valuation, classification of bad debts and selling it on the stock market.

(iv) For some weak banks (e.g. poor asset quality and poor liquidity), strong measures need to be applied: forced to merger or closure.

#### ***4.3. Improve management and administration capacity of commercial banks, apply management methods according to international standards***

Strengthen management and administration capacity of commercial banks in accordance with international principles and standards. The bank's governance model must legitimate right and obligation of the Board of Directors (BOD), the Executive Board (EB), and the Supervisory Board (SB) to ensure all stakeholders' interests. The structure of the Steering Committee has to ensure the independence of the BOD to remain a clear separation between ownership and executive rights, and take advantage of management capacity and experience of the relevant members of the bank. Each bank identifies their stakeholders in different way, generally, the major stakeholders of commercial banks including shareholders, suppliers, customers, executives and management agencies. It is necessary to clearly separate the powers of SB and BOD, so that SB must be able to protect the rights and interests of other stakeholders when the bank's operations are at risk. Moreover, SB must be able to prevent and control conflicts of interests of related parties. In order to implement sustainable development, commercial banks need to be transparent and objective in information disclosure, improve the quality of explanation according to the transparency principle of ISO2600. Especially, transparency in decisions and activities that affect society and the environment. Commercial banks must clearly, accurately and fully present their policies, decisions and activities, including the understanding and impacts of banks on society and the environment.

Strengthening the governance apparatus, implementing transparency in information disclosure and accountability are key factors when implementing sustainable banking model. Currently many international investors consider quality of bank's management system and human resources as an important factor when choosing business partners. Financial safety, avoiding environmental and social risks, the interests of stakeholders has become key concerns instead of maximizing profit as before. The evident can be found in green investment funds, sustainable investments are increasing in both size and volume.

#### ***4.4. Diversify products and provide sustainable finance***

Diversify activities of commercial banks towards the purpose of reducing business risks, thereby increasing the bank's ability to accept and support risks. The main business activities of commercial banks focus on credit, investment, and other services such as payment, guarantee, fiduciary, foreign exchange trading. Vietnamese commercial banks' income mainly comes from interest because the bank's credit granting activities accounting for over 70%, this figure in some banks are up to nearly 90%, revenues from services and investment activities only accounting for a small proportion. Thus, banking business depends too much on granting credit when businesses encounter difficulties will cause bad debts. The asset quality of commercial banks depends on the quality of loans of customers, when customers face risks in payment, making risks in banking business increase. Therefore, commercial banks need to diversify types of services and products in order to increase competitiveness, penetrate into international markets and minimize risks due to diversification of product portfolio.

Promote the provision of non-credit services such as investment activities, diversify e-payment services, corporate and personal financial advisory services, and provide consulting services on environment and society for SMEs. Besides, commercial banks develop green financial products to enhance brand value and connect with customers.

Currently, the Government and ministries have policies to support the development of green economy, towards sustainability, commercial banks need to focus on resources to develop environmentally friendly products and socially responsible. To achieve this goal, commercial banks need to build the principles of sustainable implementation throughout the entire headquarters and branches. At present, there are many organizations that have developed principles of sustainable development for general and specific organization in financial sector, with a focus on environmental, labor and human rights principles, and anti-corruption. To provide green finance, commercial banks need to build and thoroughly implement environmental principles, including: raising awareness about environment, renewable energy, climate change for officials, bank staff, moving forward to support customers how to prevent environmental challenges, implement initiatives to promote environmental responsibility, especially in credit decisions and invest in environmentally friendly technologies. Green projects, renewable energy, energy saving technologies and energy conservation measures are often long-term investment and require large capital resources. Therefore, providing financial resources for these banks' product. There should be measures to support businesses in accessing capital.

Commercial banks need to conduct market research and analysis related to the environment and desires of each customer segment, in order to identify and classify their green financial needs, from which products are designed to be suitable for each customer group. For customers who are not highly aware of environmental issues, commercial banks need to take measures to stimulate customer demand for green financial products and services through marketing, media, and education campaigns. Sustainable banking products are not only about providing credit, supporting capital for green projects, but also positively impacting on the environment, but also expanding into savings products, insurance and consulting services. E&S issues, establishment and operation of green investment funds, mobilization from green bonds.

## **5. Conclusion**

The study evaluated sustainable development situation of 12 Vietnamese commercial banks. The results show that, although the legal framework for banking safety has been issued and amended, many banks still fail to meet the requirements of Basel II. Bad debt has decreased in proportion; however, the scale has increased. The bank's income is not sustainable because it relies much on credit activities, if customers fail to pay their debts, bad debts will be created for the bank. Based on the current situation of sustainable development process of Vietnamese commercial banks, the study proposes some solutions for Vietnamese commercial banks. First, these commercial banks need to improve their stability and health, including raising capital to protect shareholders, investors and customers from losses, improving asset quality. Secondly, improving governance capacity according to international practices and finally providing more sustainable financial products.

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# IMPROVING COMPETITIVENESS OF COMMERCIAL BANKS IN CONTEXT OF INTERNATIONAL ECONOMIC INTEGRATION

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## **Abstract**

*The paper examines competitive approach under the principle of determining competitive advantage mentioned by Michael E. Porter in two books "Competitive strategy" and "competitive advantage". Accordingly, the paper will examine the development of the competitive strategies of commercial banks in parallel with the development history of the banking industry in Vietnam. Then, the study applied a fuzzy-AHP method as well as game theory in order to evaluate and select the most competitive Vietnamese commercial banks . The final part of the study will provide numerous recommendation to improving competitiveness of commercial banks in the context of international economic integration.*

**Keywords:** *competition, improving competitiveness, international economic integration, commercial banks*

## **1. Introduction**

### **1.1. Definition of competitiveness of commercial banks**

Along with supply and demand, competition is one of the economics basis. However, due to many different approaches, there are many ways to understand what competition is. Accordingly, competition in business can be described as "*competitive activity among producers, traders in a market economy and it can be dominated by supply- demand relations in order to win the most favorable production and consumption conditions in the market*" (Vietnam Encyclopedia, p.69). Or, according to Michael E. Porter (1985), "*Competition is the rivalry between business firms in the same market to attract more customers, more profitable for themselves, usually by selling lowest price or provide the best quality of goods*". Thus, it can be understood that competition is an economic relationship in which economic entities compete to find all means to achieve their economic goals, usually to dominate the market, to win customers or market segments. The ultimate goal of economic entities in this process of competition is to maximize profit or other business' benefits.

In order to compete with other firms, businesses need to be competitive. It is understandable, *the competitiveness of enterprises is to show its strength and advantages compared to other competitors in satisfying the customers' requirements to gain higher and higher benefits for their businesses. in the domestic and international competitive environment* (Michael E.Porter, 1985). Accordingly, the competitiveness of a commercial bank will be established by 5 factors including: (i) cost advantages (ii) differentiation (iii) chain value (iv) Technology and (v) human resources. Improving the competitiveness of businesses is essentially the construction of competitive strategies to take advantage of their competitive advantages to win competitors in business.

### ***1.2. Determinant factors of competitiveness of commercial banks***

It is definitely that the competitiveness of commercial banks must to be built on competitive advantages:

#### ***First:*** Cost advantages

A bank will be called to have a cost advantage if the costs accrued from the performance of its value-creating activities are lower than its competitors. For example, the costs of management and maintenance of equipment, general costs for a transaction with customers... These costs will vary depending on their value chain structure compared to their competitors. paintings as well as depending on the size or operation of each bank. In general, there are a total of 10 factors that can affect a bank's cost. Therefore, focusing on optimizing costs through balancing asset structure, capital structure, scale, choosing how to manage and operate operations will be prerequisites for creating a good competitiveness for commercial banks.

#### ***Second:*** Differentiation

The differentiation could create the uniqueness of the bank. Factors such as the color of the logo, the color of the brand identity and the slogan are only a small part that creating differentiation of banks. In addition, factors that can also make a difference may include:

- Diversity Services provided
- Marketing activities
- Earn value to customers
- Operational process control (such as credit, investment, valuation activities)
- Skills and experience of personnel

In order to meet the competitive requirements in the new era, the bank needs to diversify products as a strong point and a key point to develop banking services,

especially personal banking services. In particular, focusing on products with high technology content, outstanding features in the market to create differences in competition; take advantage of new distribution channels to diversify products, expand and develop consumer credit

***Third*** : Chain value

Each bank is a collection of activities such as capital mobilization, credit, investment, ect. All of these activities are gathered in a unified cycle called that bank's chain value. The value chain represents the total value, including value and profit activities. Thus, banks with higher value chains will be able to generate more profits and it will eventually have greater competitiveness in the market. The ability to increase chain value depends on many factors such as cost structure, management process, network and distribution channels as well as industry structure.

***Fourth***: Technology

Recently, it has also witnessed a fierce competition to develop payment accounts, credit cards, electronic payment among banks, through attractive promotions when using real estate. Products. In the long term, banks that dominate the market share in electronic payment products not only get a stable base of customers but also have the opportunity to cross-sell other products. It can be said that technology plays a key role in the current competitive race of commercial banks. Banks that apply and adapt well to the development of new technologies in the industry will create tremendous advantages in retaining old customers as well as attracting new customers to them.

***Fifth***: Human resources

Even in the 4.0 era, when machines were expected to replace people in many stages of the economy, the role of human resources could never be replaced. Because people are still the center of development. The development of science and technology, including AI, still has its limits when machines cannot express emotions. In many studies have shown that customer actions depend on many factors such as emotions or interaction with bank employees.

However, in order to improve competitiveness, commercial banks need to ensure both quality and quantity, commercial banks need to develop a human resource development strategy in accordance with their development requirements. Accordingly, the creation of a friendly and harmonious working environment between both competitive and collaborative factors must be calculated and considered carefully.

## 2. Methodology

The scope of this study is to develop a fuzzy MCDM model to solve the customers' selection and evaluation about which is the best competitive bank in Vietnam. We asked 220 random customers (mostly in Hanoi) about their opinion toward various commercial banks, namely: The bank for foreign trade of Vietnam (VCB), Vietnam Bank for Industry and Trade (CTG), Joint Stock Commercial bank for Investment and Development of Vietnam (BIDV), Vietnam Technological and Commercial Joint Stock Bank (TCB), Northern Asia Commercial Joint Stock Bank (BAB), Saigon Hanoi Commercial Joint Stock Bank (SHB), Military Commercial Joint Stock Bank (MBB) and Vietnam International Commercial Joint Stock Bank (VIB).

The procedure of the proposed fuzzy MCDM method can be developed as follows:

### *Step 1: Determine the criteria*

In this study, a questionnaire survey is designed in order to determine the most competitive banks in Vietnam using statistical methods. The respondents will be policy makers or employees who relative to banking sector and customers.

### *Step 2: Aggregate importance weights of criteria using the new fuzzy AHP method*

Using the collected criteria from step 1, another questionnaire survey is developed based on pair wise comparisons between criteria. The shortcoming of existing fuzzy AHP approaches are mentioned in this step. Then, a new fuzzy AHP method is proposed to determine the importance weights of criteria. The committee assessed 8 commercial banks through the criteria based on scale for the scoring the banks of  $S = (VL, L, M, H, VH)$  where: VL= very low= (0,1,3), L=low=(1,3,5), M=medium=(3,5,7), H=high= (5,7,9) and VH=very high= (7,9,10).

### *Step 3: Normalize the fuzzy decision matrix*

To ensure compatibility between averaged ratings and averaged weights, the averaged ratings are normalized into comparable scales. Suppose  $r_{ij} = (a_{ij}, b_{ij}, c_{ij})$  is the performance of investor  $i$  on criteria  $j$ . The normalized value  $x_{ij}$  can then be denoted as:

$$x_{ij} = \left( \frac{a_{ij}}{c_j^*}, \frac{b_{ij}}{c_j^*}, \frac{c_{ij}}{c_j^*} \right), j \in B,$$

$$x_{ij} = \left( \frac{a_j^-}{c_{ij}}, \frac{a_j^-}{b_{ij}}, \frac{a_j^-}{a_{ij}} \right), j \in C,$$

where  $a_j^- = \min_i a_{ij}, c_j^* = \max_i c_{ij}, i = 1, \dots, m; j = 1, \dots, n$ ,  $B$  and  $C$  are benefit and cost criteria, respectively.

**Step 4:** Construct the weighted normalized fuzzy decision matrix

Considering the different weight of each criterion, the weighted normalized decision matrix can be computed by multiplying the importance weights of evaluation criteria and the values in the normalized fuzzy decision matrix. The weighted normalized decision matrixes  $S_{i1} = (d_{i1}, h_{i1}, i_{i1})$  and  $S_{i2} = (d_{i2}, h_{i2}, i_{i2})$  versus capabilities criteria  $(C_j, j=1, \dots, l)$  and willingness criteria  $(C_j, j=l+1, \dots, n)$  are respectively defined as:

$$S_{i1} = \frac{1}{n} \sum_{j=1}^l (s_{ij})_{m,l} = \frac{1}{n} \sum_{j=1}^l x_{ij} \otimes w_j, \quad i = 1, \dots, m; j = 1, \dots, l,$$

$$S_{i2} = \frac{1}{n} \sum_{j=l+1}^n (s_{ij})_{m,(n-l)} = \frac{1}{n} \sum_{j=l+1}^n x_{ij} \otimes w_j, \quad i = 1, \dots, m; j = l+1, \dots, n.$$

**Step 5:** Defuzzification

This paper applies a novel ranking approach proposed by Dat et al. (2011) to defuzzify the final evaluation value of each alternative. The ranking procedure of Dat et al.'s (2011) method is described as closeness coefficient.

### 3. Results

#### 3.1. Overview of development of commercial banks in Vietnam

The establishment of Vietnam's banking industry is closely linked to the growth of Vietnam economy. Accordingly, almost immediately after President Ho Chi Minh read the Declaration of Independence giving birth to the Democratic Republic of Vietnam, it was almost immediately done to take over Indochina bank to strengthen and empowering the young government. The establishment of the Credit Department in 1947 and the State Bank of Vietnam in 1951 were the first prerequisites for the future development of Vietnam's financial and banking sector. Since 1945 until now, the banking industry has experienced many events as well as its transformation. However, in this study, the author only considers the period of development after 1986 (Doi Moi) so far because in this period, the banking sector really operates under the market mechanism. Accordingly, the development of the industry can be divided from 1986 into 5 stages, as follows:

##### **Period 1986-1989**

On March 26, 1988, the Council of Ministers issued Decree 53 / HDBT with the basic orientation of "transforming the banking system completely". The organization and apparatus of the State Bank are strengthened and reorganized to perform the function of state management of money and credit and at the same time function as banks; specialized banks perform credit business and banking

services. Accordingly, four commercial banks were established on the basis of transfer and separation from the State Bank, including: The bank for foreign trade of Vietnam (VCB), Vietnam Bank for Industry and Trade (CTG), Joint Stock Commercial bank for Investment and Development of Vietnam (BIDV), Bank for Agricultural Development (Agribank).

During this period, the competition among banks was very low when the main task of banks was to ensure the smooth operation of the system.

### ***Period 1990-1996***

In May 1990, the State Council passed 2 Banking Ordinance. The banking system started a strong, fundamental and comprehensive transformation process in line with the policy of developing the foundation. The State Bank has implemented a positive interest rate policy, combining the use of indirect and direct control instruments in operating monetary policy; forming monetary markets; initially modernizing technology and strengthening human resource for the new banking systems. Credit is extended to all economic sectors and reaches an average growth rate of 36% per year, contributing to economic restructuring towards industrialization and modernization and promoting economic growth in many years.

During this period, the cooperation between Vietnam and international financial and monetary institutions (IMF, WB, ADB) was re-established. This is the period when banks start to shape and go into stable orbit. Competition between banks appeared and increased years by years. The main competitor in this period is to win good customers such as foreign trade enterprises, manufacturing enterprises with foreign factors.

### ***Period 1997-2007***

In 1997, the National Assembly through the Law on the State Bank of Vietnam and the Law on Credit Institutions, creating a more fundamental and strong legal foundation for the banking system to continue to innovate in accordance with the market mechanism and the association sacrifice.

The State Bank has implemented a flexible monetary policy, contributing to minimizing the negative impact of the Asian financial crisis in 1997; continue to improve the operating mechanism of monetary policy, especially the interest rate management mechanism. The system of credit institutions was rectified and strengthened, gradually handling outstanding debts and improving financial capacity. Banking technology has a strong development; The inter-bank electronic payment system was put into operation officially in May 2002, e-banking services appeared (E-Banking, Internet banking,...). The State Bank participated in

negotiations on WTO accession and actively implemented commitments on international integration in the banking sector.

This is a period that can be said to be an important hinge for the development of the banking industry in Vietnam when many joint-stock commercial banks are established, promoting the excitement and competition of the market. This period is also a period of relatively stable economic development of Vietnam. Therefore, the demand for capital for business and production has grown well over the years, creating conditions for the development of the banking and finance sector. Moreover, the fact that Vietnam has completed the necessary procedures for WTO accession has created a huge motivation for banks to receive many new competitors from abroad.

#### ***2008-2014 period***

The financial crisis and global economic recession in 2008 had a very negative impact on our economy. Implementing the Resolution of the National Assembly and the Government, the State Bank has operated a proactive and flexible monetary policy, from prioritizing to curb high inflation in 2008 to focusing on preventing economic decline in 2009, restore the growth momentum in 2010 and curb inflation, stabilize the macro economy, support economic growth in 2011 and 2012.

The financial crisis has had certain effects on Vietnam market when some weak competitive banks were forced to merge or restructure. This is considered to be a form of improving the competitiveness of banks in the context of their limited capacity.

#### ***2014-2018 period***

The period 2014 has now emerged with the industrial revolution 4.0. Accordingly, every industry in the economy will be linked together in a huge information network and the financial-banking industry is not out of that trend. Machines and artificial intelligence will promise to replace the role of people in many stages. New services tied to technology are expected to change customers' financial habits. With such a fast and unpredictable development, banks will have to be proactive in creating their own competitiveness if they want to survive and develop in the future.

### ***3.2. The evaluation and selection of the most competitive banks in Vietnam***

To evaluate the competition of banks, we asked 5 banking experts to help building the important weight of criteria. After that, over 200 questionnaires was used to ask about responses' opinion about which bank have the greatest competitive power. The ranking of banks based on the closeness coefficient and it is shown in below table

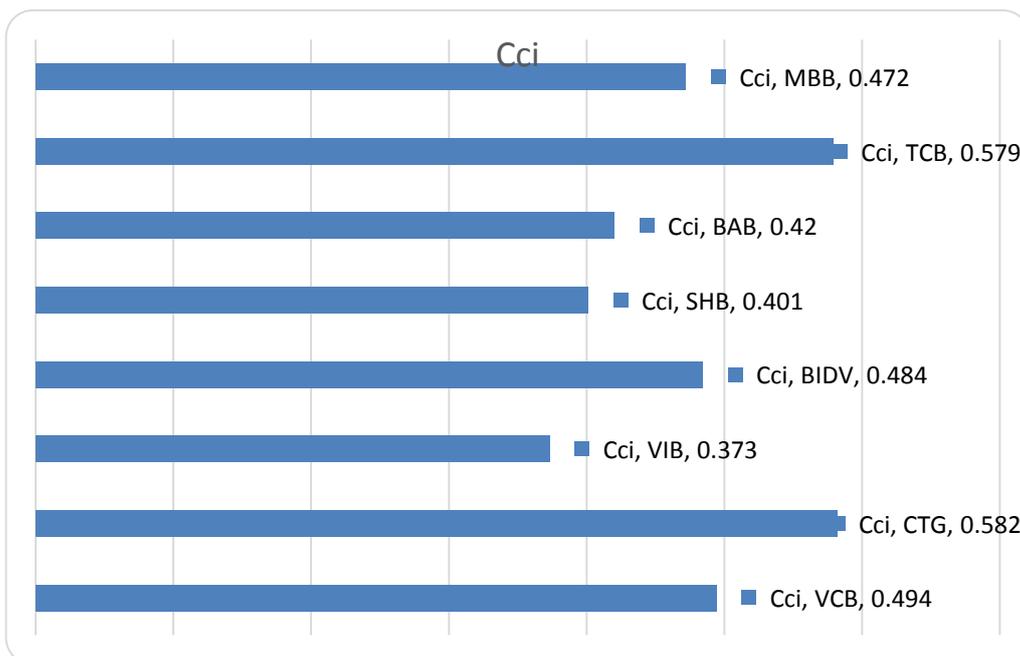
**Table 1: The score of each bank under 5 criteria**

Bank	Cost advantages	Differentiation	Chain value	Technology	Human resources
VCB	M	M	L	M	H
CTG	L	VH	L	VH	VH
VIB	VH	VL	L	VH	L
BIDV	L	VH	M	M	VH
SHB	L	L	L	VH	L
BAB	M	L	L	VH	M
TCB	L	VH	L	VH	VH
MBB	M	L	L	VH	VH

**Table 2: Aggregate weight of criteria and weight normalized decision matrix**

Criteria	Aggregated wights of decision makers matrix			
	D1	D2	D3	D4
Cost advantages	VI	AI	AI	AI
Differentiation	AI	AI	AI	AI
Chain value	I	VI	I	VI
Technology	VI	VI	I	VI
Human resources	AI	AI	AI	AI

**Figure 1: Ranking of the banks**



There are some main findings as follows:

**Firstly:** The *fuzzy-AHP* method show that the competitive ranking order is CTG, TCB, VCB, BIDV, MBB, BAB, SHB, VIB. It is quite easy to understand this result and it is consistent with the ranking report published by well known rate agencies such as Moody, Standard and Poors). Four out of eight are well-known and leading bank in Vietnam banking market.

**Secondly:** Techcombank (TCB) have nearly same score with CTG. It could be shown that privated-base commercial banks have equal competitive power as state-owner-base commercial banks. The findings also suggested that the State bank of Vietnam should establish fair and competitive market in the future.

#### **4. Recommendations to build the competitive strategy of Vietnamese commercial banks in the context of integration**

As Vietnam integrates toward international market more and more deeply, it will face more and more strong competitors and many difficult competitive strategies. Therefore, in order to deal with these rivals, Vietnamese commercial banks need to figure out what to do in assuming what the opponent will do. Applying game theory to the management of competitive operations of commercial banks can determine two competitive strategies including: defense or attack

##### **4.1. Defending strategy**

Defensive strategies aim to reduce the ability of other opponents to attack or divert opponents' attacks into less dangerous areas. It can be said, instead of seeking to improve the competitive advantage of a business, it becomes more sustainable. The most effective strategy must be a perfect combination of attack and defense. Defense strategies that may be considered for use include:

##### **First: Preventive strategy**

Preventive strategies are often more effective than other strategies because they are less expensive than handling consequences. This strategy works by identifying existing or potential competitors. It is necessary to determine which competitors are the most dangerous, along with their behavior and behavior. Specific ways include the following: (i) understand barriers to entry or exit from the market (ii) Identify opponents. The specifics include answering a series of questions such as who is the current opponent? and who are potential opponents? (iii) predict the opponent's "path" of attack. In this way, Vietnamese commercial banks may have ways to cope with their competitors in the future (iv) show a strong image of defense against

competitors. This is to create an impression for competitors that businesses always have clear determination and strategy to deal with competitors' competitive strategies.

***Second:*** Response strategy

Response strategy is the next step to be taken if the strategy to prevent failure. When blocking is no longer effective, the next strategy needs to cause the opponent the same damage as ours. It can be said that response strategies are unwanted businesses but need to be done if they want to compete with rivals. It is important to predict the opponent's possible reactions when response measures are taken. In order for the response strategy to be effective, it needs to adhere to some principles such as (i) respond as soon as possible (ii) find out the opponent's true move when responding (iii) pay attention to everything challenge both existing and potential (iv) to respond as a way to gain status.

***4.2. Attacking strategy***

Attack is a strategy that any bank must do if it wants to compete, dominate its market share. Attacks can be broken down into attacks and subjugate smaller, faster competitors than yourself or attack leading opponents. Here, the study only talks about attacking strong opponents more or less than the banks themselves. Because the integration of Vietnam has become more and more extensive, Vietnamese commercial banks have to deal with many competitors with strong capital potential, good management ability and a large coverage network. Attack strategies can be considered including:

***First:*** Reshaping

Reshaping is a competitive way through making a difference with competitors even when the products and services are similar. This strategy is extremely important in the banking and finance industry when retail products and services are easy to copy. The more reshaping activities, the higher the bank's competitiveness. Some ways to reshape Vietnamese commercial banks may include: (i) continuous changes in services. This is extremely important when the industrial revolution 4.0 completely changes consumer habits and financial use of customers. Banking services that want to be competitive need to be inextricably linked to technology and internet devices, while ensuring the consistency, compatibility and security of all the above platforms (ii) marketing changes. Marketing methods of banks also need to change constantly to meet customers' changes (iii) changes in the way of operation and operation. Need to strengthen the online platform, mobile banking and gradually reduce the traditional operation form. Adding information technology and artificial intelligence to more operational operations (iv) quickly dominate the new distribution channel. It can be said that the 4.0 revolution created a new playing field that is relatively equal for

competitors. The only problem here is who will quickly see new opportunities and who will quickly gain the most market share of that market.

***Second:*** Redefine

Definition is meant to change the market. Accordingly, banks can choose the most profitable segment for themselves to compete with rivals. There are 4 methods that can be used including (i) focusing on one segment. The bank will narrow and focus on a market that is the strongest and dominate the market share of that segment (ii) integration or separation. This strategy involves separating the market to expand or narrow the current activities. These decisions must be based on a benefit-cost analysis to ensure that the ratio reaches the highest level (iii) geographic redefinition . International economic integration and technology era 4.0 allow Vietnamese commercial banks to expand their markets to foreign markets. Currently, Vietnam has commercial banks with enough financial resources to expand markets to neighboring countries. Therefore, we need to consider this in our future competitive strategy (iv) horizontal strategy. The horizontal strategy is to expand the market through links with related industries such as the combination of banks and insurance into bancassurance. Such horizontal integration will create new markets for Vietnamese banks.

***Third:*** Forming alliances

In the condition that commercial banks in Vietnam are not really able to compete directly with strong rivals from abroad, the establishment of alliances is extremely necessary. A solid alliance will be a condition to take advantage of each other's comparative advantages to complement its weaknesses. The establishment of an alliance may be through acquisitions or unions. Whatever the form is, the prerequisite is to have a strong alliance with specific rules and clear constraints between the parties to avoid a conflict of interest that leads to the collapse.

It can be said that the application of the above methods needs to be very flexible because the market when there are many new competitors to join will make the competition strategies have to change. Therefore, Vietnam's commercial banks need to pay more attention to market research through either hiring independent consultants, or establishing specialized units for market research and determination. Competitive strategy for units by year or even quarterly.

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# THE BANK CREDIT FOR SMALL AND MEDIUMS ENTERPRISES (SMES): PERSPECTIVES AND CHALLENGES

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## **Abstract:**

*This paper will provide the overall of banking credit for private sector and particularly for Small and Mediums Enterprises (SMEs). This paper also focus analysis what the challenges for the bank credit to SMEs in the past and the future. In addition, this paper also explore what the limitation for SMEs to access the bank credit. After that, this research will discuss and provide suggestions for Laos government, Bank of the Lao P.D.R and commercial bank as well as Small and Mediums Enterprises (SMEs) to promote the banking credit for private sector and particularly for SMEs in Laos for the future. Therefore, this paper divide in to 3 sessions like as: (1). Introduction, (2). Methodology, (3). The bank credit for Small and Mediums Enterprises (SMEs): Perspectives and Challenges The prospective and the challenges, (4). Discussion and Conclusion and (5). References*

**Key words:** *bank credit, SMEs, private sector, bank, perspectives and challenges.*

## **Introduction**

The main purpose of this paper is to review and assess the bank credit for private sector especially for Small Medium Enterprise (SEMs) in the period of 2014-2018. In the recent year, the private sector has importance for development national economic and become a largest contributor to economic growth accounted for 16 percent of GDP, state owned enterprise (SOC) became the second contributor to economic growth accounted for 8.2 percent of GDP and the last contributor was state-private joint ventures accounted for 7.3 percent ([www.jclao.com](http://www.jclao.com)). These figures demonstrate that the private sector has the more important role to drive economic growth and therefore bank credit related to promote the private sector's high growth

and reduce the poverty of Laos in now day ( Sisomphou, Entitled “Lao PDR’s bank credit for private sector in the period of 1990-2017: Perspectives and Challenges”, 2018). To recognize the private sector’s role to push the economic growth, the Lao government focus to promote private sector for driving the national economic throughout reforms of national business environment like as: improve the legal system related enterprise areas like: amendment some legal related to enterprise areas: the promotion of investment law(2016), the accounting law (2013), the Value-added tax law (2018), tax law (2014), the enterprise law (2013), the promotion SMEs Law (2011), the commercial bank law (2006), the electronic transactions Law (2012), the competition enterprise law (2015), stock market law (2012),... ([www.na.gov.la](http://www.na.gov.la)). The 8th Five-Year National Socio-economic Development Plan (2016-2020) “8th NSEDP” also emphasizes the role of private sector to contribute for development economic and significantly contribute for reduction poverty and setup target to Reduce the household poverty rate to 5 percent and proportion of poor villages to 10 percent by 2020. To achieve the goal that set up in “8th NSEDP” so the total of investment in society will be achieved at approximately 30% of GDP (approximately 223 trillion kip) therefore (1) government budget financed investment 9-11% of total investment, (2) Loans and grants investment 12–16% of total investment, (3) Domestic and foreign private sector investment 54–57% of total investment, (4) Investment through bank credits 19–21% of total investment. According the above figure of target, the bank sector actively to improve and find the resolutions to reduce the barriers to promote the credit accession of society especially SMEs or Micro-enterprise to improve the management capacity and competitiveness.

Implementation was in pursuit of the Resolutions of IX Party Congress, particularly stability building for the People’s Democratic Republic state and promoting local ownership. Therefore, the Party’s Central Politburo issued the Resolution No.03/PCP dated 15 Feb 2012 regarding “Building province as a strategic unit, district as a strong comprehensive unit and village as a development unit” and the Government issued the Prime Minister’s Instruction No.16/PM dated 15 June 2012 regarding identification of 15 ministries, 51 districts and 108 villages for piloting from 2012 to 2013. Through three years of the implementation, various sectors at central and local levels, together with the population, have put their attention to the practical side of the 3-builds, which are the contributing factors in the development of local infrastructure and overall change, which can be seen as follows:

- Target ministries and all provinces developed legislation with regard to the division of responsibility between central and local levels, and between provinces, districts and villages, especially on benefit sharing on revenue and expenses management at the local level and budget allocation at the district level. There has

been a committee in charge of supervising piloting activities in each sector and locality, acting as a focal point for coordinating, supporting and monitoring the actual progress of target districts and villages, particularly the division of responsibility to each level that resulted in gradual increase in local ownership.

- Fifteen target ministries have sent their officials for local visits, both short and long term, in order to build stronger localities, especially in the areas of administration, justice, district- and village-level fund management, and to build a socio-economic development plan and manage government invested projects at village level.

- Patriotism competition was encouraged and development village built, to actively support the 3-builds works nationwide.

- 943 government-invested projects were implemented at the 3-builds district and village levels, with total investment funding of 248 billion kip, to support and build conditions for various developments.

- The Policy Bank has supplied loans to people for the amount of 261.65 billion kip to promote commercial productions.

- Party organization and those at village level as well as other working units within the experimented 3-builds villages have been reorganized for the sake of all aspects, strengthening political thinking, leadership and management working styles, implementation of support policy towards unwaged staff and encouraging greater sense of ownership and responsibility of staff at village level.

- The potential of localities has been explored and expanded, especially the increase in goods production; organization of production groups linking with professionals, bank credits and marketing also increased. Granting of ownership, responsibility and interest sharing to targeted districts and villages has been started; especially, the collection of income for the national budget increased in every district and the targeted 3-builds villages.

- Poverty reduction of the population and the construction of development villages have progressed, as shown in poverty evaluation and development results from Decree 309/PM in 2014, that there remained only four poor villages (Saiphuttana village, Sing district, Bokeo province; Phienghong 8th FIVE-YEAR NATIONAL SOCIO-ECONOMIC DEVELOPMENT PLAN (2016-2020) 68 village, Nonghad district, Xiengkhouang province; Pajudon village, Taoy district, Salavan province; and Xiengluang village, Dukkong district, Xekong province).

There are 1,322 poor families, 82 development villages, 109 crime-free villages and 98 traditional villages. Nevertheless, the actual implementation has been

slow and was not sufficiently effective due to the legislation on delegation of authority and responsibility of some central sectors still being too general, some localities did not take ownership at their local level and were waiting for instruction from the central level; there is limited capacity of district staff in developing financial management and a district staff plan; the identification of the pilot districts and villages was not in accordance with the conditions of the resolution and the instruction from the higher authorities; and, at the same time, the dissemination of the resolution and instruction at the local level was delayed, leading to weak practical implementation by local people (The 8th Five-Year National Socio-economic Development Plan (2016–2020) “8th NSEDP”). Therefore to ensure the implement of 3 built of Lao *People's Revolutionary Party* (LPRP) “Building province as a strategic unit, district as a strong comprehensive unit and village as a development unit” that the bank sector also become a necessary sector beside other sector. Particularly to supply credit for public project and private project as well as SMEs.

Characters of private enterprise of Lao PDR is Small Medium Enterprise (SMEs), the most SMEs limit to access financial resource due to low governance - business operation and small asset that reason to challenge for credit to private sector or SMEs (Phouphet Kyophilavong, 2008) and according to report SMEs around more than 90 percent of total register firm were faced the obstacles to access bank credit ([www.xinhuanet.com](http://www.xinhuanet.com), news on 28/6/2018).

In addition, *23rd August 2018*, H.E. Thongloun Sisoulith, Prime Minister of the Lao PDR had enacted the Order NO: 12/PN related the implement of 8 measures to push economic growth. The 5th measure of the Order to promote SMEs and domestic production and the detail like:

- 1). Continues amendment the Degree of the promotion fund for SMEs to improve the policies, mechanism and measures for development SMEs to implementing effective SME policies to push inclusive growth.

- 2). To develop the SMEs fund and push the owned commercial bank and the commercial bank to contribute credit for SMEs.

Thereby, authors chose to research “The bank credit for Small and Mediums Enterprises (SMEs) in the period of 2014-2018: Perspectives and Challenges” to explorer what perspectives and challenges as well as suggestions to promote bank credit to private sector in general and particularly to SMEs in future.

## **2. Methodology**

Authors will collect the statistic and figure about bank credit in the period of 2014-2018. The bank credit will collected from annually financial report of each

banks of Laos bank system but exclude the policy bank (PB). Author analyze and compare the amount of bank credit for SMEs to the total credit or to bank credit for public sector. To make clearly the trend of bank credit for SMEs in the future. Author focus to describe the status of bank credit for SMEs in the period of 2014-2018 like as prospective and challenges.

### **3. The bank credit for Small and Mediums Enterprises (SMEs): Perspectives and Challenges.**

#### ***3.1. The prospective.***

The bank credit for private sector which increasing trend year by year. The bank credit for private sector not only contribute to a large enterprise but also Small Medium Enterprise (SMEs). The bank credit for private sector not only provide credit for the large city and large province but also contribute credit to rural areas forward facilitate for enterprise and households access formal financial services and reducing poverty (ADB, 2015). Furthermore, the bank credit for private sector contribute directly to private enterprises improve themselves to enhance their efficiency, extend business operation and promote their competitive capacity on globalization context.

Moreover, the bank credit for the private sector has the role in reduction of imbalance of economic structure ownership (between state owned enterprise and private enterprise) toward reducing monopoly in national economy and promote domestic competition. In period 1975-1986, economy of Lao P.D.R was the centrally planned economy which support from Soviet. There was only state owned enterprise and no private enterprise, the economy was dominated 100 percent by state owned enterprise (SOE). There was a less completion and none credit for private sector. Therefore, in period 1983-1986, GDP average was approximately 53.77 billion kip (US\$ 6,437,978.93) and GDP growth rate average was around 4 percent (ADB, Key indicator, 1985-2017). In period between 1986 and 2017), Economic of Lao P.D.R had transited from the centrally planned economy to market-oriented economy under New Economic Mechanism (NEM). We recognized various of owned enterprise in economy. In this period, the bank credit for private sector had growth in every year.

The bank credit for private sector contributed to promote private sector improve themselves, enhance their competitive capacity and business operation, as well as promote Small Medium Enterprise (SMEs) and Micro Enterprise access formal financial services. Therefore, the private sector becomes a largest contributor to economic growth and plays a key role in creating economic. Average GDP increase as follow: 53.8 billion kip, 682,06 billion kip, 81,609.9 billion kip in 1982, 1992, 2012 and 2017 which growth rate average around 6.5 percent in period from 1990 to 2017 (ADB, key indicator, 1985-2017).

### ***3.2. The challenges for bank credit to Small Medium Enterprise (SME)***

#### ***3.2.1. The challenges from the bank system***

The banking system of Lao P.D.R has been dominated by the state-owned commercial bank (SCOBs) in assets, deposits as well as credits. More than 7 years after banking system reforms initiated in 1988, the state owned commercial (SCOBs) had a large Non Performing Loans which collected from the centrally planned economy. On the other hand, SCOBs a large Non Performing Loans due to a weak cooperation, business operation, risk management, governance, etc. In early 1990s the SCOBs were insolvency seriously. At the time, BOL continued to extend credit to support the government irrigation project throughout budget in 1998 which significant credit volume to government 171 billion kip and to irrigation project 147 billion kip they were around a half of the new credit extend 1998. (IMF,2000,2002).

Lao P.D.R always faces the a fiscal deficit and a current account deficit during in period between 1985 and 2017 which a fiscal deficit averaged approximately 5-6 percent of GDP and a current account deficit averaged approximately 300-350 percent of GDP (ADB, Key indicator, 1985-2017). In front of challenges, the government of Lao P.D.R used to intervene the banking system by lending direct to SOEs and refinancing budget by fund from banking sector (IMF, 2000, 2002, 2004). These problems increased significantly in recent years when slower economic growth due to government of Lao P.D.R conducted policies limit investment in forest and mining sector so the revenue may significantly affect. Therefore, the government could not play for public project then enterprise default with the commercial banks and SOCBs dominated and main contributor a credit to government project then SOCBs are faced insolvency seriously this situation authors call “***Triangular debt***” it mean that the government was debt to enterprise (contractors) and enterprise (contractors) were a debt to commercial banks. Before 2014, the situations occurred a lot, and now day Lao government of Lao P.D.R commitment to stop using baking refinancing the budget or limit lending direct to SOEs. Although, in practice the SOCBs provided credit to the private companies were contractor of the government project, but the real borrowers were the government. This situation call “***Disguised fiscal deficit financing by the banking sector***” (IMF,2017; JACA, 2005). The above challenges always affect directly and indirectly to the bank credit for private sector.

On the other hand, the banking system of characterize of the Lao P.D.R that the bank of the Lao PDR (BOL) less autonomy. According to previously BOL law (Enacted in 1990 and first amendment in 1995), BOL’s all key monetary policies, action plans and strategy before implementation it should be approved by the government normally this process take long time. To improve this situation, BOL law in 2018, as amended by the Second. However, BOL has less autonomy because the governor is a member of the Council of Ministers and is responsible before the

government for success and shortcomings in the implementation of his/her duties in accordance with the Law on the Government of Lao P.D.R. BOL has duties state management of monetary policy and banking sector across the country (BOL law, 2018). The domestic banking market were dominated by SCOBs the from 1988 to date, so the banking system has less competition inefficient therefore it will limit or challenge to contribute credit to economy and specifically credit to private sector.

The above situation, it deems the main cause to explain why the banking system of Lao PDR is uncompetitive and inefficient. The banking system was dominated by SOCBs over banking areas as follow: asset, deposit and credit. In practice the asset of SOCBs to total asset of banking system ratio has downtrend but still too high ratio (more than 40 percent). When compared between the state owned commercial banks (SOCBs) and the non state owned commercial banks (private bank, joint venture bank and foreign bank branch) about number bank, asset, deposit and credit as follow: SOCBs have only 3 banks but market share of asset, deposit and credit are over 50 percent and none SOCBs have 38 banks but market share of asset, deposit and credit are less than 49 percent.

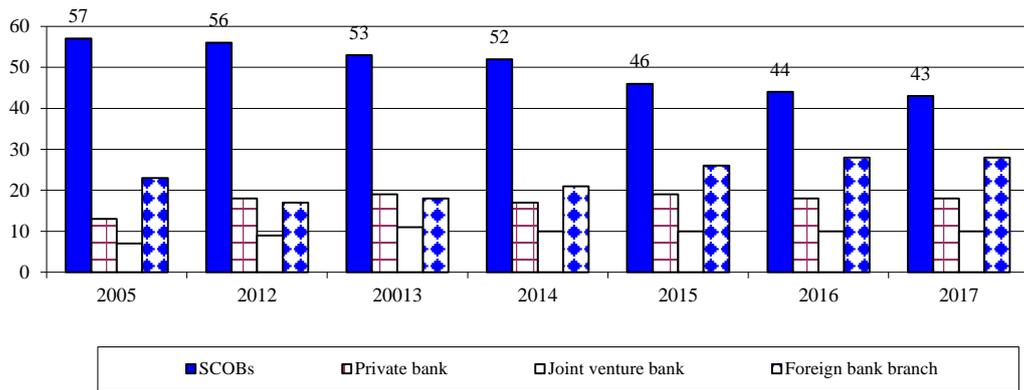
**Table1: Summary ratio of asset, deposit and credit of different type of ownership bank in 2005 and in period 2012-2017.**

*(Unit: percent to total)*

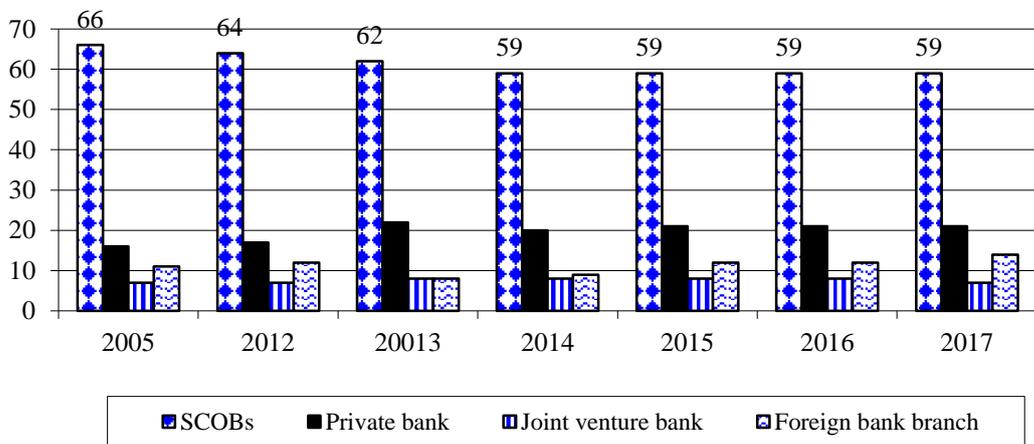
	2005	2012	20013	2014	2015	2016	2017
Asset	100	100	100	100	100	100	100
SCOBs	57	56	53	52	46	44	43
Private bank	13	18	19	17	19	18	18
Joint venture bank	7	9	11	10	10	10	10
Foreign bank branch	23	17	18	21	26	28	28
Deposit	100	100	100	100	100	100	100
SCOBs	66	64	62	59	59	59	59
Private bank	16	17	22	20	21	21	21
Joint venture bank	7	7	8	8	8	8	7
Foreign bank branch	11	12	8	9	12	12	14
Credit	100	100	100	100	100	100	100
SCOBs	67	65	59	54	47	5	49
Private bank	14	15	19	19	21	20	20
Joint venture bank	6	7	9	9	14	13	13
Foreign bank branch	13	13	14	17	17	17	17

*(www.bol.gov.com.la)*

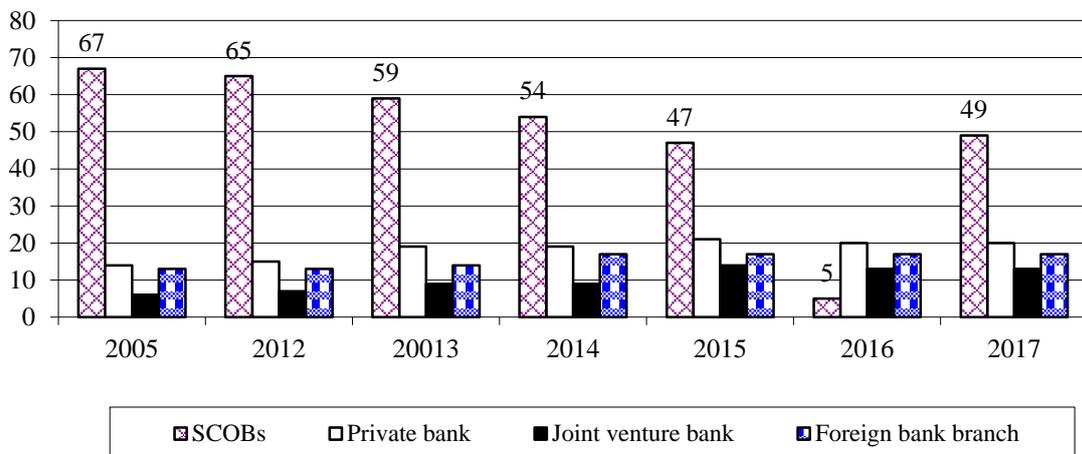
**Figure 1: Ratio of asset of bank in 2005 and in period 2012-2017.**



**Figure 2: Ratio of deposit of bank in 2005 and in period 2012-2017.**



**Figure 3: Ratio of credit of bank in 2005 and in period 2012-2017.**



However, the non performing loans (NPLs) increased main from state owned commercial banks account for 60% in 1999 and reduce to 35% in 2005 (Asian Pacific Rural and Agricultural Credit Association- APRA, 2006)

### *3.2.3. The challenges from Small Medium Enterprise (SMEs )*

Characters of private enterprise of Lao PDR is Small Medium Enterprise (SMEs), the most SMEs limit to access financial resource due to low governance - business operation and small asset that reason to challenge for credit to private sector or SMEs (Phouphet Kyophilavong, 2008) and according to report SMEs around more than 90 percent of total register firm were faced the obstacles to access bank credit (www.xinhuanet.com, news on 28/6/2018). However, in 2000, the commercial bank law was enacted to promote commercial bank. Impractical, the Lao financial - banking sector are dominated by state owned enterprise and state owned commercial bank and they are not active provide credit in rural areas nor microfinance (APRACA, 2006). Therefor, Small Medium Enterprise (SMEs) limit to access the formal financial sources as well as the bank's credit. It also reflected from Lao P.D.R was rank 116 of 189 rated countries in the category "getting credit" when some Asian countries like Cambodia, Thailand and Vietnam rank 12, 89, 36, respectively (Kristina Spang, 2015).

Authors summary the main characters of SMEs in Laos: (1). Poor cooperation, (2) Limit Marketing & Advertising, (4). The low value added goods, (5), The low skill, (6). Asset Limits, (7). The family business.

## **4. Discussion and Conclusion**

To promote bank credit for private sector, Lao government should develop economy which sustainable growth. Try to reduce budget deficit, current account deficit and inflation. Making policies focus on promotion of production goods and export and promote import goods/material for reproduction. Implement of commitment to stop lending direct to SOEs completely and refinancing budget deficit by banking system. Lao government should review the prudential regulator related promotion of SME access financial fund from the banking system to increase the bank's credit to private sector.

The bank of the Lao PDR (BOL) should consider to increase the autonomy in higher level to operate the monetary policy and continually improve inspection, supervision and credit risk management. As well as restructure early as possible for two state owned commercial banks (SOCBs) by privatization to enhance the bank's efficiency - operation and also promote more competitor in the banking market furthermore to promote the bank commercial contribute credit to private sector. To ensure SMEs could access the financial fund from the banking system, BOL should facilitate environment for SMEs development and improve their competitive capacity to ensure support consumer goods/service for domestic market and export in order to reduce import also improve the payment of balance (POB) as well as reduce current

account deficit in the future that the most challenge for the exchange rate and international reserve. Also, actively promote credit to rural area and private sector. Specially, the commercial banks should have a credit policy in order to promote the loan for SMEs.

The enterprise play the role of promotion credit to private sector because if the enterprise have a good performance or a good business operation, it would increase the enterprise's rating and let the enterprise access the bank's credit smoothly in particular and in general the private sector. Therefore, enterprise should develop and improve themself to meet the minimum credit criteria of the bank to enhance their efficiency and limit the non performing loan (NPL). Avoid using the credit which a wrong purpose, continually improve governance, internal management, credit management in order to more competitive capacity and profit capacity and it also contributes to promote the bank's credit to private sector.

## **5. Conclusion**

Based on The Eighth Five-Year National Socio- Economic Development Plan (2016-2020), April, 2016, author realized that Lao government has a priority for promotion of Small Medium Enterprise (SMEs) in order to be strengthening, development, more competitive and more contribute to socio-economy of Lao P.D.R in the future and to promote SMEs to access a financial sources is the priority framework. On the other hand, to achieve the goal of The Eighth Five-Year National Socio- Economic Development Plan (2016-2020), the total of investment is worth 223,000 trillion kip approximated 30 percent of GDP. Base on financial market context, Lao P.D.R is bank -based. Therefore, the bank system be main supply credit channel to investment so to ensure contribution credit to economy smoothly and efficiency the country need the bank system perform in a full function and more competition.

To day, private sector increase efficiency and contribute economic growth beside state owned sector reveal the negative inside their operation. However, private sector still weak and enterprise is major small medium enterprise account for 90% of total enterprise (Soukvina Philavanh, 2016). So authorities believed that through this paper will provide general of economic and banking reforms and evidence related credit to private sector about advantages and disadvantages will contribute more understanding of background of bank system and characteristic to help policy maker issue the policy and measure to promote bank credit for private sector as well as SMEs.

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# SOLUTIONS TO DEVELOP HIGH - TECH AGRICULTURE IN VIETNAM AT PRESENT

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## **Abstract:**

*Agriculture plays a special role in the economy, providing essential food for the country's survival and development, ensuring food security and the habitat of the majority of the population. In the today world's context with the trend of globalization and the explosion of technology, the development of high-tech agriculture is a decisive factor affecting the income and livelihood of farmers, and will increase competitiveness of agricultural products in the international market, protecting consumer's health and ecological environment.*

**Key word:** *High technology; Agriculture; High-tech agriculture; environment*

## **1. Introduction**

Developing high-tech agricultural is an irreversible trend of the world agriculture in general and Vietnam's agriculture in particular. That comes from the advantages of high-tech agriculture compared to traditional agriculture. High-tech agricultural production creates a large amount of agricultural products, high productivity, good quality and especially environmentally friendly products; High-tech agriculture will help farmers to be pro-active in production, reduce dependence on weather and climate, therefore the scale of production is expanded. High-tech agricultural development ensures production development associated with consumer health and ecological protection.

This article focuses on analyzing and assessing the need to develop high-tech agriculture in Vietnam; achievements and limitations in high-tech agricultural development in Vietnam at present, from which a number of solutions are proposed.

## **2. Research method**

The article is based on the most general methodology of materialist dialectics and historical materialism. The article uses specific research methods such as analysis, statistics, systematization, interpretation, inductive, etc.

### **3. Results**

#### ***3.1. The need to develop high-tech agriculture in Vietnam***

Vietnam's agriculture plays a special role in the economy. Agriculture still accounts for a large proportion of GDP and the labor force, the majority of population live in rural areas. Over the past years, agriculture has contributed to a large part of the export turnover of the economy, the value of agricultural exports in 2016 reached 32.1 billion dollar, exceeding the contribution of crude oil exports. Vietnam's agriculture has become a "lifesaving force" for the economy and society when the economy is in crisis, maintaining social stability and improving people's living standards; Vietnam has favorable natural conditions for agricultural development. However, Vietnam's agriculture has only increased in quantity, but the quality is still low, the value is not high, mainly exporting raw agricultural products and there are no strong brands for Vietnamese agricultural products in the world market. In terms of quantity, the scale of agricultural output is not large, yet unstable in volume and uneven in quality. The pursuit of long-term output targets has led to excessive use of inputs (fertilizers, pesticides, growth-stimulating chemicals). Residues of antibiotics, plant protection drugs, micro-organisms contaminated in agricultural products are still higher than international standards. The use of banned substances, chemicals of unknown origin in the production, preservation and processing of agricultural products is quite common. Quality issues and food hygiene and safety have become alarming issues. Vietnam has lost shares in some traditional agricultural markets because the quality of agricultural products does not meet international standards. Therefore, currently the urgent and necessary issue is to improve the quality and value of Vietnamese agricultural products through the development of high-tech agriculture. Regarding its numerous advantages, the development of high-tech agriculture will enhance the competitiveness of Vietnamese agricultural products to enter the world market. High-tech agricultural production will create products which meet the requirements of quantity, quality, standards of food hygiene and safety. The advantages of economy scale, quality and low cost of high-tech agricultural products are the factors ensuring that domestic products can compete with imported goods, at least in transportation and marketing costs.

#### ***3.2. Achievements and limitations in high-tech agricultural development in Vietnam at present***

From 2016 to 2018, high-tech agricultural production areas expanded rapidly in many localities, increasing the proportion of high-tech agricultural products in the total value of agricultural products of the country. However, high-tech agricultural

production areas are still limited. High technology has only been applied in a number of small stages in the chain of production, preliminary processing and preservation of products, leading to low productivity, quality and agricultural value, lack of competitiveness and unfriendliness with the environment. As follows:

### *3.2.1. Achievements*

*Firstly*, changing the face of Vietnam's agriculture, contributing to transforming from a small-scale and backward Vietnamese agriculture to a more large-scale and gradually modern agriculture

The emergence and strong investment in high-tech agriculture has changed the performance of Vietnam's agriculture, shifting from a small-scale, fragmented agriculture depending on households as a basic economic unit, mainly basing on manual labor to a commodity agriculture with initial increase in scale and more and more modern technology. Currently in the agricultural fields in Vietnam, there are more and more the fields in the region and those of tens, even hundreds of hectares, the greenhouse fields with modern irrigation technologies, new plant varieties, hydroponic techniques, using information technology in management and administration appearing more and more, contributing to improving the living environment, friendly to the environment. Agricultural products are more diversified, the scale of production and exchange of agricultural products is larger and the quality is also higher. The Ministry of Agriculture and Rural Development has confirmed that currently the contribution of science and technology to the added value of agriculture accounts for about 35%.

*Secondly*, contributing to improving labor productivity and economic efficiency in agriculture, improving people's income and living standards.

The emergence of many high-tech agricultural models has outstanding productivity and efficiency compared to traditional agricultural production. Therefore, it helps increase income and improve living standards of people in general and agricultural residents in particular. The application of modern scientific and technological achievements also increases the competitiveness of agricultural products, raises the proportion of commodity and export agricultural products, exports of agricultural products become a significant source of foreign currencies serving the demand for industrialization and modernization of the country. High-tech agricultural development also ensures food safety and improving public health.

*Thirdly*, contributing improving the competitiveness of Vietnamese agricultural products in the world market, increasing foreign currency revenues for the country.

Thanks to the development of high-tech agriculture in the past time, the product quality is higher, meeting many strict standards for agricultural products, therefore increasing the competitiveness of Vietnamese agricultural products in the world market. This is reflected in the increasing value of agricultural exports over the past years. In 2015, the agricultural sector had an export value of about 30.14 billion dollars. By 2017, the value of agricultural exports was 36 billion dollars and in 2018, the value of agricultural exports was worth 40 billion dollars, larger than the export value of 2017. Foreign currency revenue from agricultural exports tends to increase, surpassing the revenue from Vietnam's crude oil exports.

In addition, improving the competitiveness of Vietnamese agricultural products is reflected in the expansion of agricultural export markets: instead of focusing on traditional agricultural markets, which does not require too high quality like Chinese market. Vietnam is gradually expanding its market to other countries, target markets that require higher quality products and of course selling at higher prices such as the US, European, Australian, and Japanese markets, etc, namely exporting dragon fruits to the Australian market; star apples, cloth, mangoes to the US market; passion fruit to the French market, vegetables to the Arab market, etc, the growth rate of export volume of vegetables and fruits has increased at an amazing speed.

*Fourthly*, changing the thinking of managers, businesses and farmers in agricultural development.

The development of high-tech agriculture changes the ways of thinking for agricultural development of both the state, businesses and farmers.

For the state, agricultural development over the past years has shown that agriculture plays an important role in the economy, as a lifesaver for the economy when facing economic difficulties, the foundation for the stable economic development. Therefore, the Government recognizes that agriculture should not be overlooked, and investment in agriculture should be made, taking advantage of agriculture, developing agricultural production as a critical point for other development strategies of the economy. In recent years, the Government has discussed a lot about agricultural development policies, adjusting and restructuring agriculture in the direction of large commodity production and high technology application. Legal documents on planning high-tech agricultural zones and areas, the study of land law amendment, credit program of 100 trillion for high-tech agricultural development projects, criteria for identifying high-tech agricultural projects are clear evidence for this strategy.

For businesses, the application of technology in agriculture creates a new business area, a new investment opportunity which can bring high profitability for businesses. Also with the increase in living standards and income, the society's demand for clean, high quality and safe agricultural products is increasing, thus investing in organic agriculture and high-tech agriculture is one of potential investment opportunities, capable of increasing profits in the future. As a result, many large-scale enterprise corporations have been implementing large-scale investment projects in high-tech agriculture to step forward the development of this market.

### *3.2.2. Restrictions*

*Firstly*, high-tech agriculture in Vietnam is still small in scale, only expanding in the pilot model, not yet in mass-produced model, which is not yet considered as the main agricultural development trend of our country in the near future.

The current high-tech agricultural models have initially brought about practical economic efficiency and are gradually becoming a direction for Vietnam's agriculture. However, high-tech agriculture in Vietnam still reveals many difficulties and limitations in terms of scale, level and speed of development. The contribution of high-tech agriculture to the growth of the agricultural sector is not quite high (highest as Hanoi and Ho Chi Minh City, high-tech agricultural products only account for 10-15% of total export value agricultural export). Therefore, Vietnam's agricultural growth has been slowing down recently (accounting for 4.01% in the period of 1996-2000; 3.83% in the 2001-2005 period; 3.03% in 2006-2010 was; 2.9% in 2009-2013, 2.4% in 2016 and only 1.2% by 2017). Most agricultural products in Vietnam are being exported in raw, preliminary processing, with very low value added, many types of agricultural and forestry products have not been branded in the international market.

*Secondly*, the economic efficiency of high-tech agriculture has not been firmly confirmed due to the large initial investment capital, which faces difficulties in the product consumption market and involves high investment risks.

In order to develop high-tech agriculture, firstly there must be a large capital investment for the construction of infrastructure, environmental treatment, investment in plant and animal breeds, training of workers, introduction and consumption receptor products, etc. It is estimated that, in addition to the cost of capital for infrastructure construction, employee training, technology acquisition, etc., to build a medium-scale livestock farm according to the model of high-tech agriculture requires from 140 billion VND to 150 billion VND (4-5 times higher than traditional farms), one hectare of complete greenhouses with watering and fertilizing

systems and automatic control according to Israeli technology requires at least 10-15 billion VND. A typical example is Vietnam's first high-tech agricultural zone located in North Tu Liem district (Hanoi), which was put into operation in 2004 with a total investment of nearly 20 billion VND or a farming project TH True Milk dairy cow (in 2009) in Nghia Dan (Nghe An) with a total investment of nearly 1.2 billion dollar.

Meanwhile, due to limitations in the capacity to transfer and apply technology, the software to operate high-tech equipment is not suitable to the characteristics of each type of plants, animals, soil and climate conditions of each locality, therefore the productivity of crops and livestock has not promoted its inherent advantages. According to the models imported from abroad, crop productivity is 3-4 times higher than traditional cultivation technology in Vietnam, but only increasing from 30% to 100%. This leads to a fact that despite large investment of capital, high investment costs, productivity is not as high as expected, resulting in high product prices, high-tech agricultural products facing difficulties in product consumption.

*Thirdly*, high-tech agriculture also depends heavily on foreign countries

High-tech agriculture is a relatively new field in Vietnam. Therefore, models, construction and development of high-tech agriculture in Vietnam depend mainly on foreign countries: from input to output, from the hardware of the technology (greenhouses, machines, drip irrigation, mist spraying, etc) to operating software. This is a great difficulty for the development of high-tech agriculture in Vietnam today.

*Fourthly*, emerging social problems in the process of developing high-tech agriculture.

High-tech agricultural development in agriculture in Vietnam is only the first step but many social problems have arisen during the development process. The first social issue is *to create jobs for agricultural workers*. Over the past years, there has been a shift in labor force in agriculture to work in industry and services but the speed of the change is still slow. The cause of this slow shift is due to the weakness of the industrial and service sectors in the past years, which has pushed the burden of employment for the agricultural sector. Agriculture is still the workplace of nearly 50% of the workforce. When developing high-tech agriculture, accelerating the application of scientific and technological advances to agriculture, the surplus labor force will increase. For example, TH Group only uses 8 farmers working all day in 1 hectare of high-tech agricultural land compared to traditional agriculture of 20 people, if the industrial and service areas are not developed fast enough to employ this surplus workforce, the issue of employment for farmers will become a hindrance to the development of high-tech agriculture, creating increasing pressure for society.

*Rich and poor diversification takes place strongly in agriculture:* Developing high-tech agriculture requires a large investment, which creates the strong differentiation among people working in agriculture. Those who have a large amount of capital, apply high technology in agriculture, produce agricultural products with good quality, ensure food safety and hygiene are highly competitive, agricultural products are sold well and profitable. Those with small amount of capital cannot apply high-tech agriculture, producing products with low competitiveness, low value and ineffective production, and they will be forced to lease land or work for others to make a living.

*Conflicts of interest between businesses and farmers:* high-tech agriculture involves a sensitive asset in agriculture - land. Characteristics of land ownership in Vietnam is the land owned by the people, the state is the legal owner and assigned to the people to use, now the land is now mainly owned by farmers. High-tech agribusiness businesses who want to have land for business have to lease their use rights or cooperate with farmers in the production and consumption process. In the process, conflicts and disputes over economic interests between businesses and farmers may arise. The conflict is clearly reflected in land rent, land lease term, implementation of terms in the contract of production and consumption of products between businesses and farmers. In some cases, farmers' land is idle but when businesses ask for rent, they ask for very high prices for renting, but farmers also complain that enterprises rent land for a long time at low prices. If there is a case where the enterprise signs a contract to cover farmers' products but then does not buy or if they buy, the price is lower than the market value or the farmer spontaneously breaks the contract, bringing the farm produce to market when the market is in great demand and prices are high, etc.

### ***3.3. Solutions to develop high-tech agriculture in Vietnam today***

In the upcoming time, to develop high-tech agriculture and achieve good results, in my opinion, some basic solutions should be implemented as follows:

*Firstly, promote the propagation of high-tech agricultural development.*

Subjects of implementing high-tech agricultural development are farmers and enterprises. Therefore, in order to develop high-tech agriculture, the first solution is to raise the awareness of farmers and businesses about high-tech agriculture. On the basis of proper perceptions on developing high-tech agriculture, farmers and businesses will take appropriate actions.

To strengthen and innovate the form of propaganda, dissemination, thorough grasping and well implementing the guidelines, resolutions and directives of the Party, policies and laws of the State related to agricultural economic development

high-tech enterprises, aiming to create a dramatic change in awareness and consensus in action, change farming habits, resource allocation and coordination of the society's entire resources on agricultural development high-tech enterprises, especially in key agricultural areas.

Propaganda on high-tech agriculture should focus on the following contents:

- Propagating the development trend of world agriculture, the trend of changing domestic and international agricultural demand so that people can actively change the structure, production models and agricultural cultivation techniques to suit well.

- Propagating the opportunities and challenges of the development of high-tech agriculture in Vietnam.

- Propagating the orientation, objectives and development solutions of high-tech agriculture in Vietnam.

- Propagating the State's guidelines and preferential policies for high-tech agricultural development and administrative conditions and procedures to enjoy such preferences.

*Secondly, improve and perfect the quality of high-tech agricultural development planning.*

High-tech agricultural development is a new issue in agricultural development in recent years. Vietnam currently does not have its own strategy for developing high-tech agriculture, but only has the development of high-tech agriculture within the national socio-economic development strategy and agricultural development strategy. The Ministry of Agriculture and Rural Development has announced the planning of high-tech agricultural zones and high-tech agricultural areas until 2020, but the planning is still not uniform, in which the Prime Minister decides to establish high-tech agricultural zones, and the Chairman of the provincial People's Committee signed a decision to establish high-tech agricultural areas. In recent years, there has been a wave of localities submitting projects of planning high-tech agricultural zones and areas, leading to spontaneous high-tech agriculture development, not practicing centralized investment resources for high-tech agricultural development in regions and localities with advantages.

*Thirdly, increasing investment in infrastructure for rural agriculture, renewing investment mechanisms and exploit, manage and operate infrastructure projects in agriculture and rural areas.*

Infrastructure in agriculture is a fundamental condition to develop high-tech agriculture. In Vietnam, limitations in infrastructure are a huge development constraint of the economy in general and high-tech agriculture in particular.

Therefore, investing in infrastructure of the economy in general and agriculture in particular is an urgent need for economic development. In the context of limited state budget resources, the burden of large public debt creates pressure on the investment in infrastructure projects in agriculture. In the upcoming time, it is necessary to implement the following solutions: mobilizing investment capital for infrastructure projects from the private sector; investment in construction of infrastructure works should be carried out through public bidding, ensuring transparency and efficiency; It is necessary to implement investment projects in the form of public-private partnership (PPP) for infrastructure development; exploiting and using synchronous infrastructure assets, avoiding wasteful and ineffective capital investment, etc.

*Fourthly, training high quality human resources for agriculture and rural areas.*

In developing high-tech agricultural models, essential elements are capital and technology. However, using these factors effectively or not depends on people - quality human resources. As an agricultural country with many advantages from tropical products, but no yet turn that potential into reality, investing in the process of training high quality human resources, capable of mastering advanced technology, applying effectively to production is the decisive factor.

The demand for manpower in agriculture and rural areas is very large. Every year, the country needs more than one million workers, but only about 9% of the agricultural and rural staff have university and college degrees; 39.4% intermediate level and 9.8% primary level, etc. Therefore, in order to promote the development of high-tech agriculture, in parallel with the promulgation of mechanisms, attention should be paid to the training of qualified human resources.

*Fifthly, promoting research and application of science and technology into agriculture; renovating the mechanism of scientific and technological management, creating a driving force for the development of science and technology in rural agriculture.*

In order for high-tech agriculture to grow more steadily in the upcoming time, we need to have stronger and more synchronous policies.

*Firstly*, for the ministries and central authorities, it is necessary to complete synchronously the renewal mechanism and policies to promote scientific and technological application in agriculture and rural areas; including special policies for high-tech agriculture. Reviewing and transforming the operating mechanism of public agricultural science and technology organizations into autonomy and self-responsibility mechanisms. Research funding for these organizations should not be allocated annually according to the plan but should be built into a fund managed by representatives of farmers and management businessman.

*Secondly*, focusing on scientific research and technological development, strengthening the application of high-tech science in agriculture and rural areas. Science and technology is a very special type of investment, involving potentially high risk but at the same time promises to bring a large profit. Therefore, it is advisable to make a plan to set up venture capital funds for promoting technology research and development.

*Thirdly*, promote international and domestic cooperation in scientific research and high technology transfer in agriculture; promoting close links between farmers, businesses and organizations in the implementation of agricultural production value chains. Increasing the proportion of investment in science and technology activities in the agricultural sector.

*Fourthly*, for localities, it is necessary to plan the local network of public agricultural science and technology organizations in a proper and efficient manner. Creating all conditions for agricultural science and technology enterprises to enjoy maximum incentives and supports when investing in high-tech research and development, joining large-scale production, forming raw material areas, target output products, technology application, especially high-tech applications in agriculture.

*fifthly*, perfecting the role of the State in developing high-tech agriculture.

To develop both the quantity and quality of high-tech agricultural production types, the role of Government in setting up the policy environment is particularly important. The state needs to create a favorable environment and encourage the creation and application of high-tech advances in agriculture. Therefore, in the process of high-tech agricultural development, it is indispensable for the Government to improve the legal policy to develop high-tech agriculture.

#### **4. Conclusion**

Vietnam's agriculture is entering a in-depth development stage with a large scale of production. This arises the need for the agricultural sector to have a major revolution to completely change the old production methods. Therefore, the development of agriculture and rural development is an urgent requirement, the key to the successful implementation of Vietnam's agricultural restructuring towards increasing added value and sustainable development in the context of widespread international integration.

High-tech agricultural development is a way of resolving the conflict between low agricultural productivity, low quality products, high labor use, low economic efficiency of traditional agriculture with the application of scientific and technological achievements to ensure stable agricultural growth with high

productivity and output, high efficiency and quality; best improving the coordination between people and resources, taking the advantages of resources to achieve the greatest efficiency, harmonizing and unifying the social, economic and ecological environmental benefits.

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# DEVELOPMENT OF VIETNAMESE RICE INDUSTRY IN THE CONTEXT OF INTEGRATION

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## **Abstract**

*This study was conducted to analyze the current situation of the development of Vietnam's rice industry in the current context of international economic integration, research findings are used as a basis foundation for proposing and contributing to making Vietnam rice industry more developed. Data for the research were collected from the annual summary report of the Ministry of Agriculture and Rural Development, General statistics, data collected and analyzed to solve research problems.*

**Keywords:** *Rice industry, development, Vietnam*

## **1. Introduction**

In recent times, agricultural production in general and the rice industry in particular have achieved certain results; contribute to promoting economic growth and development, facilitating political stability for the country. According to the report of the General Statistics Office, period 2010-2017, Vietnam's rice production has continuously grown thanks to new rice varieties, short-term, meeting the need to expand the annual cultivation area.

First, Vietnamese rice industry still focuses on increasing output without focusing on quality and branding

Second, Vietnam rice exports are not always appreciated by international importers for quality. In fact, the weakest point of Vietnamese rice is the lack of uniformity in quality, mainly divided by fractured rice grains, commonly 5%, 15%, 25%, Vietnamese rice has an advantage in the market, mainly white rice, long-grain rice, but no proper name yet. Meanwhile, Vietnam rice export market has long been dominated by South Asian countries and Southeast Asia, the Middle East, Africa and Latin America - markets that demand low quality rice.

Third, Vietnam's rice does not yet ensure food safety, producers/ farmers still misuse of pesticides and fertilizers, making rice quality even more difficult to control.

In addition, when the level of integration of Vietnam becomes more and more extensive, bilateral and multilateral agreements signed and implemented will open up

great opportunities for Vietnam's rice industry to penetrate into fastidious markets like America, Japan, EU ...

But it will also face many challenges such as concerns about quality, food safety and the level of product positioning in the markets of countries, technical barriers in developed countries.

Because of the reasons above, research about the current development situation of Vietnam's rice industry in the context of international economic integration is now necessary, on that basis, the study will show the achievements and limitations of Vietnam's rice industry, since then, there is a basis to propose solutions to further develop Vietnam's rice industry.

## **2. Research Methodology**

### ***2.1. Data collection methods***

The data in the research were collected from the General Report of the General Statistics Office, the final reports of the Ministry of Agriculture and Rural Development, the General Statistics Office... The scientific research topic final report, scientific works published in Special journals related to the field: development of Vietnam rice sector is also used for research.

### ***2.2. Data analysis methods***

The research uses descriptive statistical methods, comparison methods, analytical methods according to the time series in this study to analyze the situation of development of Vietnam rice industry.

## **3. Research findings**

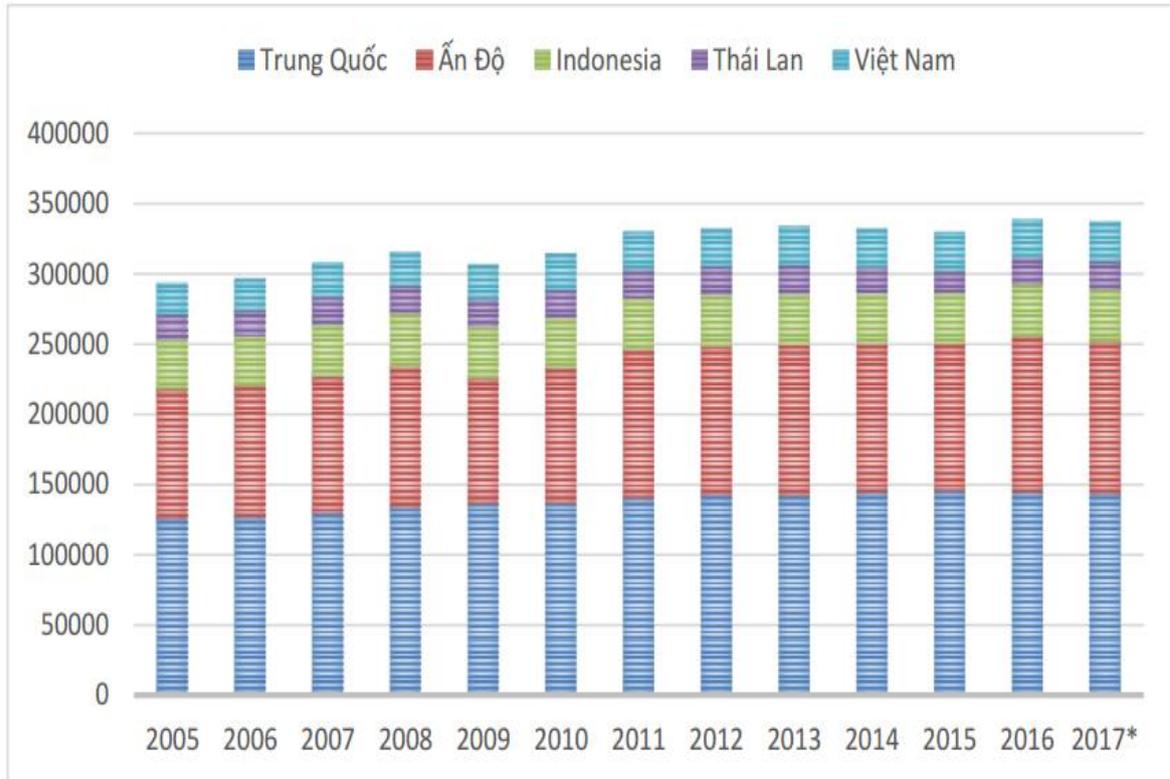
### ***3.1. The context of international rice supply and demand***

#### ***3.1.1. The situation of rice production***

According to USDA statistics, rice production worldwide has grown steadily over the past 10 years with an average annual growth rate of 1.37% / year. In 2016, the total rice output reached 478.65 million tons, up 15% from 417.87 million tons in 2005 which five countries with the largest rice output include: China, India, Indonesia, Bangladesh and Vietnam; The total rice production of these five countries accounts for 73% of the world's total rice production, led by China with 146 million tons, India with 104 million tons and Indonesia, Bangladesh, and Vietnam respectively 36.65 million tons, 35 million tons and 28.2 million tons.

**Figure 1: Rice production of the top 5 countries leader in the world**

*Unit: Thousand tons*



*Source: USDA, 2017*

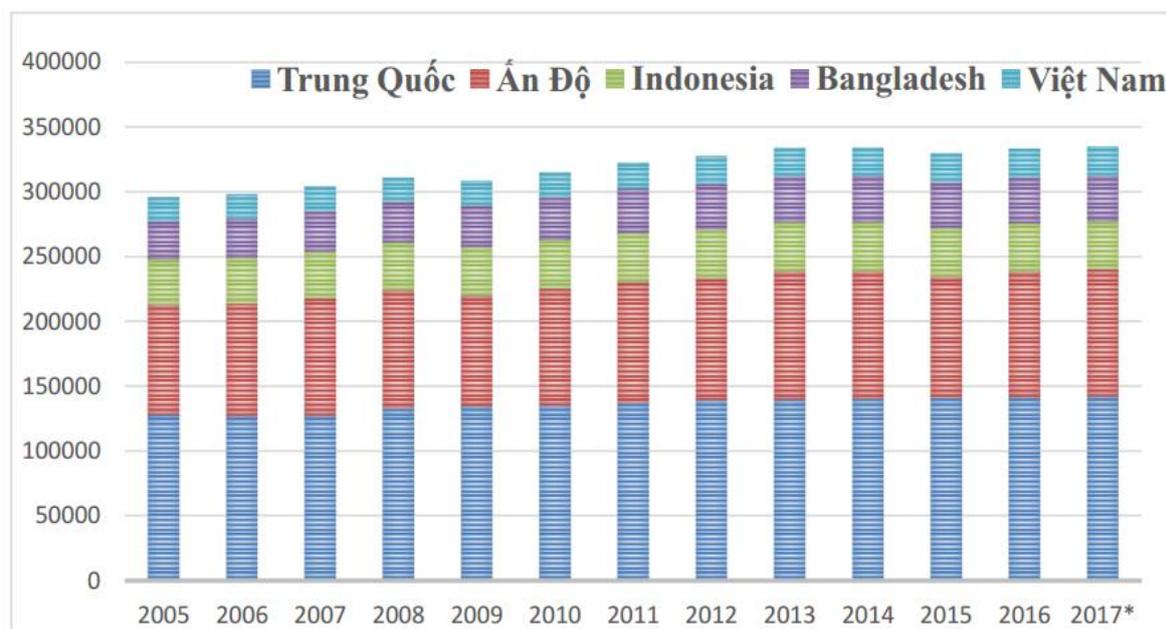
According to USDA, world paddy production in 2017 can reach 483.5 million tons, down 1% compared to 2016 due to a sharp decrease in production in Brazil, Bangladesh and the US. The main reason for the decline in production in these countries is due to narrowing the cultivated area and negative effects of weather such as floods in Bangladesh. The harvested area in the world is about 160.2 million hectares, decreasing by 0.6 million hectares compared to the previous year. World average productivity is about 4.46 tons / ha, lower than last year's 4.52 tons / ha.

### *3.1.2. Consumption situation*

According to calculated figures from the USDA, the demand for rice in the past 10 years has grown steadily, with an average growth rate reached 1.65% per year. According to estimates, the total rice consumption by country worldwide reached 485.58 million tons, the top 5 countries accounted for over 70% of the rice consumption by country worldwide. In particular, China's domestic consumption reached 141.35 million tons, India reached 99.2 million tons, Indonesia reached 38.65 million tons, Bangladesh reached 35.5 million tons and Vietnam was 22 million tons.

**Figure 2: Rice Domestic Consumption by top 5 Countries**

*Unit: Thousand tons*



*Source: USDA, 2017*

Rice consumption worldwide in 2017 was around 480.8 million tons, down by 0.6 million tons compared to 2016 and 2.7 million tons lower than output. According to USDA, rice consumption in this year in Indonesia, Thailand, Nigeria, and the United States decreased while rice consumption of Chinese, Egyptian, Indian, Vietnamese, and African increased. Rice consumption in China could reach 142.35 million tons this year, up nearly 1 million tons from the previous year.

Global rice reserves in 2017 can reach 140.7 million tons, up 2.7 million tons compared to 2016. This is the highest reserve since 2000, the amount of world rice reserves increased mainly by China. China's total rice reserves in 2017 accounted for two-thirds of the world's rice reserves (USDA).

### ***3.2. Development of Vietnam rice industry***

#### ***3.2.1. About Output***

From 2008 to 2015, due to rice productivity keep going up along with the expansion of cultivated area has increased rice production. In 2016 and 2017, rice productivity decreased slightly due to the impact of weather, sunshine, drought in 2016 and flood this year. In 2016, Vietnam's rice production was about 43.61 million tons. This success is due to the active innovation in farming methods, boldly applying science and technology, using productivity varieties to produce, constantly bringing Vietnam's rice productivity to increase.

**Table 1: Paddy output in whole year by region in the period of 2010 - 2017***Unit: Thousand tons*

Years	2010	2011	2012	2013	2014	2015	2016	2017
<b>Country</b>	40.005,6	42.398,5	43.737,8	44.039,1	44.974,6	45.091,0	43.165,1	42.763,4
<b>Red river delta</b>	6.805,4	6.965,9	6.881,3	6.655,4	6.759,8	6.729,5	6.545,0	6.083,3
<b>Northern midlands and mountains</b>	3.087,8	3.199,1	3.271,1	3.265,6	3.341,1	3.336,8	3.405,5	3.336,4
<b>North Central and South Central Coast</b>	6.152,0	6.535,1	6.727,2	6.599,7	7.034,0	6.855,1	6.842,2	6.997,9
<b>Southeast</b>	1.322,7	1.361,2	1.398,6	1.346,1	1.349,1	1.376,1	1.367,4	1.396,7
<b>Mekong Delta</b>	21.595,6	23.269,5	24.320,8	25.021,1	25.245,6	25.583,7	23.831,0	23.633,5
<b>Central Highlands</b>	1.042,1	1.067,7	1.138,8	1.151,2	1.245,0	1.209,8	1.174,0	1.315,6

*Source: General Statistics Office (GSO)*

In 2013 - 2015, Viet Nam rice production by year increased compared to previous years and the output reached from 44,039.1 to 45,091.0 thousand tons. Rice growing areas in whole country tend to increase in production during this period, however, in the North Central and Central Coast regions, rice production increases unevenly, for example in 2013 the amount of rice in this area was 6,599.7 thousand tons, in 2014 it increased to 7,034.0 thousand tons and in 2015 it was reduced to 6,855.1 thousand tons. Paddy output in 2015 is estimated at 45.2 million tons, an increase of 240.9 thousand tons compared to the year 2014 due to the planted area is estimated at 7.8 million hectares, an increase of 18.7 thousand hectares; productivity reaches 57.7 quintals / ha, an increase of 0.2 quintal / ha. According to a report of the Ministry of Agriculture and Rural Development, in 2017 rice output is estimated at 42.8 million tons, down 318.3 thousand tons compared to 2016.

In particular, rice production in the Mekong Delta region reached 23.7 million tons, accounting for 55.4% of the total rice production in the country.

### *3.2.2. About Productivity*

Currently, Vietnamese rice productivity is the highest in Southeast Asia, averaging 5.3 tons / ha / crop. Particularly in the winter-spring season, many provinces such as An Giang, Can Tho, and Dong Thap reach 7.2 - 7.3 tons / ha, equivalent to the world's largest rice producer like Japan and Korea.

**Table 2: Rice productivity in whole year by region in the period of 2010 - 2017***Unit: Quintals / ha*

Years	2010	2011	2012	2013	2014	2015	2016	2017
<b>COUNTRY</b>	53,4	55,4	56,4	55,7	57,5	57,6	55,8	55,5
<b>Red river delta</b>	59,2	60,9	60,4	58,9	60,2	60,6	59,8	56,8
<b>Northern midlands and mountains</b>	46,3	47,7	48,2	47,4	48,5	48,8	49,9	49,1
<b>North Central and South Central Coast</b>	50,7	53,2	54,4	53,6	56,6	56,2	56,3	55,8
<b>Central Highlands</b>	47,8	47,6	49,6	49,5	52,4	50,9	50,3	54,1
<b>South East</b>	44,8	46,4	47,5	48,0	49,4	50,4	50,6	51,4
<b>Mekong Delta</b>	54,7	56,8	58,1	57,6	59,4	59,5	56,2	56,4

*Source: General Statistics Office (GSO)*

Looking at the table above we can found that our rice productivity tends to increase throughout the study period but the amount of increase is uneven. Specifically, in 2010 the national rice productivity reached 53.4 quintals / ha, in 2011 rice productivity increased to 55.4 quintals / ha, and the trend of increasing productivity lasted until 2015 reached 57.6 quintals / ha, this is the year with the highest rice yields in the period, but the 2016 and 2017 national rice yields decreased respectively 55,8 quintals / ha and 55.5 quintals/ ha. In terms of regions, the rice yield of the Red River Delta region is the highest in country, and in 2011 and 2016 this region has a productivity of over 60 quintals / ha. In addition, the Northern Midlands and Mountains region appears to have lower rice yield than other regions in the country, the productivity of this area reaches 46 - 49 quintals / ha.

More specific, the region with the highest rice yield of winter-spring in our country is the Mekong Delta region, in the period of 2010 - 2017, this region has an average rice yield of 67.38 quintals / ha.

**Table 3: Rice productivity of winter - spring by region***Unit: quintals / ha*

Years	2010	2011	2012	2013	2014	2015	2016	2017
<b>Red river delta</b>	63.2	66.9	66.2	65.7	65.5	65.8	65.6	65.9
<b>Northern midlands and mountains</b>	54	56.8	56.3	56.6	56.1	56.6	57.5	57.5
<b>North Central and South Central Coast</b>	57.8	58.7	60.2	59.6	62.7	61.4	61.5	61.1
<b>Central Highlands</b>	56.9	52.2	58.1	56.2	61.2	56.8	53.7	61.3
<b>Southeast</b>	50.3	51.9	52.6	53.4	54.8	56.2	56.4	56.8
<b>Mekong Delta</b>	65.7	66.9	68.6	68.4	71.6	71.3	63.9	62.6

*Source: General Statistics Office (GSO)*

In the Northern area, the rice productivity of winter-spring is quite high, the average rice yield of winter-spring is over 56 quintals / ha, partly due to the water supply for the production of Winter-Spring crop in the Northern provinces, benefit of soil preparation, sowing in the right season of the locality. In order to improve the efficiency of rice production, farmers have selected suitable varieties with high yield quality, high quality, resistance pests and diseases.

At the same time, apply new technical advances, technical packages in rice care from fertilizing to forecasting, estimating and preventing pests etc.

### 3.2.3. About Area

Rice is cultivated in most provinces across the country, the most important rice producing region in the country is the Mekong Delta (accounting for 56% of production), the Red River Delta (accounting for 16% of production), and North Central region and Central coastal region (15% of output).

**Table 4: Rice area in year by region in the period of 2010 - 2017**

*Unit: thousand hectares*

	2010	2011	2012	2013	2014	2015	2016	2017
<b>COUNTRY</b>	7.489,4	7.655,4	7.761,2	7.902,5	7.816,2	7.828,0	7.737,1	7.708,7
<b>Red river delta</b>	1.150,1	1.144,5	1.138,7	1.129,9	1.122,7	1.110,9	1.094,4	1.071,4
<b>Northern midlands and mountains</b>	666,4	670,9	678,0	689,2	689,2	684,3	682,6	679,8
<b>North Central and South Central Coast</b>	1.214,1	1.228,8	1.236,4	1.230,4	1.243,8	1.220,5	1.215,3	1.253,4
<b>Central Highlands</b>	217,8	224,2	229,7	232,4	237,8	237,5	233,3	243,4
<b>Southeast</b>	295,1	293,1	294,4	280,3	273,2	273,3	270,4	271,9
<b>Mekong Delta</b>	3.945,9	4.093,9	4.184,0	4.340,3	4.249,5	4.301,5	4.241,1	4.188,8

*Source: General Statistics Office (GSO)*

The table shows that the rice area in 4 years from 2010 to 2013 has been continuously expanded, increasing from 7,489.4 thousand hectares to 7,902.5 thousand hectares, the average annual growth rate reached 2.72 %/year. However, from 2014 to 2017, the rice area tends to shrink, being from 7,902.5 thousand hectares in 2014 to 7,816.2 thousand hectares in 2015 and by 2017, the rice area will be reduced to 7,708.7 thousand hectares. This is also the lowest rice area in the country during the study period.

However, at present, the rice area cultivation in the Mekong Delta tends to narrow down compared to the 1980s and 1990s. Instead, the area of 3 season intensive crop land significantly increased. In the period of 2010 - 2014, the area of paddy land

of the region decreased by 14 thousand hectares (average reduction rate of 0.18% / year). In particular, paddy land decreased mainly in Ca Mau province (down 21.5 thousand hectares), Tien Giang (down 3.7 thousand hectares), 4 provinces (Tra Vinh, Can Tho, An Giang and Hau Giang decreased from 0, 1 - 0.4 thousand hectares), Bac Lieu has stable paddy land area (77.6 thousand hectares); The remaining 6 provinces have rice area increased from 0.1 to 4.9 thousand ha.

The reason for the reduction of paddy land in this area is because rice land has been strongly converted to non-agricultural land while unused land is no longer able to exploit to supplement the rice land region. In the long term, besides to the loss of paddy land due to the effects of climate change, the demand for non-agricultural land will increase and continue to be taken into paddy land, so there must be a reasonable plan to use. In the period 2005 - 2014, rice area of the region increased by 4.4 thousand ha (average growth rate of 0.03% / year).

#### **4. Recommendations**

To develop Vietnam rice industry, from the research findings, the author proposes some recommendations as follows:

First, the government needs to open more training courses on rice care techniques to help people access more modern techniques.

Secondly, for households, they also need to access market requirements for rice products.

Thirdly, famers also need to improve more professional and technical knowledge to meet the requirements of production, thereby creating products with high quality to meet market requirements.

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# SOME FEATURES OF TRADITIONAL WEAVING IN VIETNAM

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## **Abstract:**

*Vietnam is a traditional agricultural country, associated with the traditional village, the traditional handicraft industry, from the past up to now it has always in an important role in socio-economic structure. In many traditional handicraft industries, traditional silk weaving in Vietnam has been well known in the world for its silk products. During the French colonial period, Van Phuc Silk was present at major exhibitions of colonial countries in Marseille (1928), Paris (1931-1938), Cambodia, Indonesia, Laos... Today, traditional weaving is less the same but still plays an important role in the structure of import and export of Vietnam textile and apparel industry.*

**Key words:** *Traditional weaving, Silk, craft villages economic, handicrafts, villages.*

## **1. Introduction.**

Traditional weaving has a long history. In the records of feudal historians it has been evident from the post-independence era (10th century) that the silk carnation was very developed. By the middle of the eleventh century, silk had become an important economic sector for state income. The Ly dynasty was established the exchequer to oversee the production and taxation of silk as a manifestation of the strong development of silk weaving. Up to the Tran-Ho period, mulberry trees and silk weaving were closely associated with each Vietnamese family as an integral part of the agrarian economy. The old record says “every year the mulberry grows for silkworm rearing, each household has three hectares.” King Le has three times promoted for agricultural production and silkworm cultivation for weaving in 1461, 1485, and 1498. A mandarin guard system was organized to the commune level to promote the farming land, silkworm cultivation, weaving silk. Planting mulberry and silkworm cultivation for weaving are also strongly encouraged by the Nguyen dynasty. In 1834, he released a motto: “advise the farmer to be hardworking able to have enough to eat, to take care of the silkworm cultivation in order to have enough to wear” (2). Thus, feudal dynasties attach great importance to the silkworm trade, by which the weaving industry has developed conditions leading to the birth of famous weaving centers throughout our country, including Van Phuc. Over time, weaving is

growing. Originally from the traditional looms, traditional weaving techniques gradually developed from low to high, from primitive to sophisticated, from simple to complex, from the family occupation has become a professional village of weaving products for serving the upper class and export to foreign countries. Besides the improvement of looms, the process of creating patterns, searching for fibers combined with silk has created the diversity of traditional weaving products in Vietnam. In this article, the author will go more deeply about the silk weaving of Van Phuc village, now in the Van Phuc Ward, Ha Dong District, Hanoi is a well-known traditional silk weaving village with many products. It can be used at major trade fairs in the world.

## **2. Method**

The author collects historical data on the economic and social situation of traditional handicraft villages in general and silk weaving in particular, relevant documents for research problems.

Survey and fielding some nearby handicraft villages that are influential and related to economic and social development of traditional handicraft villages, especially Van Phuc silk weaving villages and neighboring traditional weaving villages, the author has an overview of the evolution of weaving through the ages in history.

Research on the main issues of Vietnamese traditional silk weaving on the investment of French capitalists with traditional weaving traditions, which led to the shift of economic sectors in the traditional weaving industry, led to the transformation of economic and social stratification in craft villages

The author uses the method of historical materialism to study the formation, existence and development of the traditional silk weaving village. Based on the natural conditions, social history, culture, factors affecting the economic, social and cultural transformation of traditional silk weaving in Vietnam.

In order to solve the problems, the author uses the historical method, logical method and combination with different methods.

*Historical methods, logical methods, comparative methods, survey methods, fieldwork, interview methods:* Retrospective interviews and in-depth contemporary interviews. The subjects we interviewed were diversified in terms of economic conditions, social status, age, gender, etc. Especially we interviewed well-known artisans and village elders to understand clear history of custom, experience in production and life

On that basis, to clarify the outstanding features of the socio-economic transformation of traditional craft villages in order to clarify the role of the handicraft

economy of the village, introducing traditional and characteristics of economic, sociality, politic, culture in order to further clarify the history of Vietnam's handicraft industry and at the present.

### **3. Results.**

Before the French colonial invasion, the silk industry in our country has developed strongly. In 1642, Alexandre de Rhodes was surprised at the production of silk and silk products in our country. So immediately after pacification our country, the French colonialists immediately thought of exploiting silk because it was “a matter of grave importance in terms of abundant technological and commercial resources in the North, because the production of fine silk will bring a great property, and chambers of commerce will increase prices compare to the present by 20 to 30%” said Paul Bert, Governor of Central-North Area at the meeting of August 31, 1886 of the Central and North Research Committee for Agriculture, Industry and Trade. In order to better serve the exploitation of silk, France has established a Silk Sub-Committee. In the report of December 2, 1886, the Silk Subcommittee said: “The problem of silk in North plays the second most important role after rice, so you could find that there is less produce which is more worth considering and thinking than silks”(8). During the French colonial period, silk was encouraged for support. The silkworm in the first decade of the twentieth century was “strongly encouraged for support”. In 1894, the Governor Delanessan issued a decree granting subsidies to silk producers. From 1905 to 1909, the French government exempted tax from silkworm cultivation, then set up model silkworm cultivation, and set up good silkworm farms to supply silk producer...

Why is there such a positive help? This is because during this time, the silkworm craft, the French silkworm, has difficulty in supplying silk to silk mills, so they have to promote silk worming in Vietnam to supply raw materials for factories in the country.

Silk worming, silk weaving can be said to have developed in history in many rural areas of Vietnam. After 1905 the French government took many measures to support and encourage the silk industry by exempting and reducing taxes. The French invested and established many silk quilting facilities from the North to the South such as Phu Lang Thuong (1905), Bach Hac (1914), Kien An (1916)... Since 1926, the French have spent 38.000 VND (piaster) to encourage silk worming, opened 3 models silkworm factories in Hue, Vinh, Binh Dinh. As can be seen in the French domination, the French have identified and soon seen the silk worming, silk weaving could develop and brought great benefits for French capitalists. French capitalists have actively invested capital and expanded production. Until 1923, the sum of money from the entire Indochinese budget for silk weaving in the North was 702.000 francs.

in the Central was 123.000 francs. in the South was 129.000 Francs....With this source of capital, it has promoted the development of silk factories and companies throughout Vietnam such as Nam Dinh Silk Textile Joint Stock Company, Phu Phong (Binh Dinh), Tan Chau (Chau Doc), Dong Ich (Thai Binh).... It was clear that the French authorities really wanted to restore and develop the silk weaving industry in the hope of earning more for the French and some bourgeoisie in Vietnam. In 1926, the amount of silk exports was 68.000 kg of raw silk and 85.000 kg of wasted silk, worth 11.500.000 francs. In 1919, the value of the exported silk was only 4.237.000 francs. That meant almost three times the reduction. 80% of this silk was exported to France and 20% to Thailand (1). Looking at the export of silk from silkworm, from 1909 to 1929 this number proved a relatively good development.

**Table 1: Export silk**  
(Calculated by Kg)

<b>Year</b>	<b>South</b>	<b>North</b>	<b>Central</b>	<b>Vietnam</b>
<b>1909</b>	1.064	3.847	4.575	9.486
<b>1910</b>	724	4.255	6.008	10.987
<b>1911</b>	1.510	4.265	6.688	12.463
<b>1912</b>	6.439	1.741	9.407	17.577
<b>1913</b>	1.031	1.406	12.741	15.178
<b>1929</b>	-	-	-	39.400

(Source: Cited follow Phan Gia Ben. (1995). *Preliminary history of Vietnamese handicraft development, Publishers of literature, history and geography, p.15*)

Export silk in 1929 increased more than two times, the highest in 1912. However, it was only export, not official production. Production numbers are unfortunately very rare, but if true, there is a significant increase in the production of silkworm and weaving. The number of silk types produced in 1918 is as follows (7).

**Table 2: The number of silk types produced in 1918**  
(Calculated by Kg)

<b>Type of silk</b>	<b>South</b>	<b>North</b>	<b>Central</b>	<b>Vietnam</b>
<b>Fresh silkworm</b>	2.940.000	1.800.000	751.000	4.491.000
<b>Raw silkworm</b>	117.600	72.000	30.040	219.640
<b>Rag</b>	147.000	90.000	37.550	274.550
<b>Original silk</b>				

(Source: Cited follow Phan Gia Ben. (1995). *Preliminary history of Vietnamese handicraft development, Publishers of literature, history and geography, p.11*)

In general, in the period 1919-1930, silk weaving in Vietnam was maintained and developed despite the recession (1923 - 1924) caused by the competition for artificial silk, because the international market price is lower and because of the war. This profession was not actually demolished and the French government actually created good conditions for the maintenance and development of silk worming and weaving. Basically, this occupation is still widespread among the people, but a number of localities have been sub-techized, with few new machines and new improved technology. Some Vietnamese participate in this profession as bourgeois owners. These are new features of this historical period, and in terms of production, silk output has grown more than in the previous period.

For textile fabrics

The cultivation of cotton plant and weaving is a very popular traditional crafts in every villages. Historical periods have shown that French bourgeoisies have penetrated very early in cotton and weaving industry with companies such as Société Cotonniere du Tonkin, Société Cotonniere de Saigon, Delignon v .v... France wanted to gain dominance in this industry, so Dupré's Tonkin Cotton Group was granted exclusive rights to produce yarns in Indochina. French companies have exclusive rights to cotton and cotton textile, so Vietnamese textile factories have to rely on French companies for raw materials. Therefore, only the family at the countryside or villages in the specialized weaving can be possible to take advantage of the raw material through scattered cotton planting in all areas. In other words, cotton cultivation in rural Vietnam is sufficient for self-growers and for specialized weaving villages with close ties to rural areas. The textile manufacturers of the French bourgeoisies and a large bourgeoisie in Vietnam must use cotton fiber imported from abroad.

As for silk weaving, after the First World War was promoted more strongly. French colonialists in Indochina held fairs, exhibitions, examinations... and awarded certificates of merit... at the same time spreading the propaganda for the “revival of technology” of them. Due to this, weaving is encouraged because this profession only has to invest a little money, cheap labor to exploit the skillful skills workmanship so the profits are very high. A deep cause for France's support for the development of traditional villages is to make the villages “peaceful”, not stand up against French domination, without the inexperienced and vulnerable; Hoang Trong Phu himself once remarked that “during the 1930s (all the traditional craft villages stand out for their peaceful character” (5). With such a goal, Hoang Trong Phu opened a local art handicraft school in Ha Dong and encouraged most of the province to promote handicraft, especially traditional crafts. The governor of Ha Dong Hoang Trong Phu then Vi Van Dinh (as the governor from 1938 to 1941) and son in law of Hoang Trong Phu named Ho Dac Diem (1941 - August 1945) selected some leading villages

become “model village” and apply the policy “technology revival”. Van Phuc Village is a traditional silk weaving village, located near the provincial capital, so it was quickly chosen and built into a model village.

Van Phuc textile village has long been popular with kings and people. “We met Mr. Do Van Ai, the grandson of Mr. Do Van Suu. Mr. Ai is just a normal craftsman in Van Phuc village. Poor and without property, he just had only a few tools used to weave was left by his grandfather at the bottom of a rotted box. Mr. Ai was given the necessary help to restore this precious technology” (4). In 1921, it was considered to be the year of renaissance of the weaving business in Van Phuc village. The village has two textile workshops going into production. One is directed by Mr. Do Van Ai, one is in charged by Mr. Nguyen Manh Khang with Van Phuc village

The achievements of the above mentioned need to mention the role of the governor Hoang Trong Phu in the “technology revival” in Ha Dong, Especially in Van Phuc weaving profession he was most interested. In his commentary on Ha Dong province, Ha Dong Trade Center has commented on the work of Hoang Trong Phu as follows: “By the development of handicrafts brought by him, facilitate the initiative, help with cash, often raising the individual's profit for the small capital that artisans need to practice their profession, he tightens his family relationship with benefits, making people busy working against the keeping one’s hands in pockets situation. The economic prosperity of the province has helped the local head of this locality a lot in its political activities.” (3)

Hoang Trong Phu actively encouraged the propagation of silk weaving in Van Phuc with French rulers, the Governor-General of Indochina, the governor of Tonkin and foreigners. He took them to visit the traditional weaving of Van Phuc. He suggested to the French Government and the government to grant certificates of merit and dignity to the skilled workers.

Hoang Trong Phu also asked the French Government to pay all expenses for Van Phuc to display the goods for sale at exhibitions inside and outside the country: Ha Dong Fair (1935), Auction in Hanoi, The Nam Vang fairs in Cambodia, Vientiane in Laos, Bolavia in Indonesia (1939), the Marseille exhibition (1928) in France, the French colonial handicrafts exhibition in Paris for the first time (1931), Paris for the second times (1938).

Hoang Trong Phu also built “Ha Dong Museum House” (later the Ha Tay Party Committee), including: a beautifully built saleshouse to display Ha Dong's handicrafts including silk, brocade of Van Phuc for selling, two blocks divided into many rooms to display the sophisticated crafts, where it is always produced and ordered on demand. Van Phuc alone is equipped with a weaving loom for customer

to watch directly. The museum was inaugurated in 1925. The weekdays, especially on Sunday foreign visitors to watch the technology of production and purchase is very crowded. Van Phuc's traditional weaving loom is very noticeable.

- The famous Silk Center, where the most famous textile weave at this time.

In order to serve the growing demand of the textile market in Van Phuc village, it is more open than the previous looms, which have been improved from the rudimentary frame, stomping legs, low productivity into yarn-pulling looms, 40 cm to 60 cm to silk sheet weave of 80cm. From the puller looms are replaced with loathes using the Zatkan Hong Kong locomotive. As a result, productivity and quality increase. Productivity rises from 3 yards of medium size to 8 yard of large size in one day of a loom. From the 30s to before World War II, the number of looms in the village increased rapidly.

**Table 3: Development board of Number of looms in Van Phuc village**

<b>Duration</b>	<b>Number of looms</b>	<b>Increase (compare to the previous)</b>
<b>Before 1930</b>	320	
<b>From 1930 - 1935</b>	500	1.56 times
<b>From 1936 - 1940</b>	1500	3 times

*(Source: Van Phuc Ward People's Committee)*

Within four years, from 1930 to 1935, the number of looms increased from 320 looms to 500 looms, an increase of 180 looms, equivalent to  $\approx 1.56$  times. Over the next five years (1936 - 1939), an increased more 1.000 looms, raising the total number of looms to 1.500 looms, increased three times. Compared with La Khe village (Ha Dong) - a village that in 1884 was King Thieu Tri the official fabric weaving silk for the State at this time there were only 600 to 700 weaving looms (6).

In addition to domestic sources, Van Phuc imported a large volume of silk from Britain, France, Japan, China... annually consumes tens of tons of silk, the highest production of more than million meters of silk.

Van Phuc village was first weaving the, silk, later weaving, satin and silk weaving, the Van Phuc also used to make clothes to export to Paris. From 1935 to 1936 Van Phuc weaving more wicks. The item is more and more diversified. Men and women in the village from 16 years old and above all know weaving. The 13-year-old was able to weave the first silk. However, there are still 3.000 people from other localities coming to learn and work with 3.000 Van Phuc people every year.

Van Phuc silk started to compete with the world market, opening up a new possibility for the village's textile industry. In the feudal period, Van Phuc silk textiles

were mostly sold or exchanged at the village's Dinh market. As the textile industry grows, silk is sold in Do Market (Ha Dong) - a regional market. In the French colonial period, capitalist elements entered the market in a step by step, breaking the narrow trading boundaries of a regional nature. At that time, the goods were sold at Hang Ngang, Hang Dao (Hanoi). Since then, Dinh market and Ha Dong market is no longer the place to trade silk as bustling as before, Van Phuc textile products mainly sold in Hanoi. The mode of exchange is conducted in the family unit. The market schedule is as follows:

**Table 4: The regional market schedule**

<b>Markets</b>	<b>Market Day (lunar calendar)</b>
<b>Hang Ngang, Hang Dao (Hanoi)</b>	1,6
<b>Do Market</b>	5,10
<b>Dinh Market</b>	2,7

*(Source: Van Phuc Ward People's Committee)*

In addition to the form of selling in each family is common also in the form of several families linked together to sell goods. This form appeared in the 30s of the twentieth century due to the fact that capital goods developed strongly, which made some small-sized owners in Van Phuc have a lot of capital and a large volume of textiles, together, they started selling bases for the launch of "Phuc Hop Shop" and then "Long Van Company".

Phuc Hop Shop was established in 1930 - 1931, based on ten households in Van Phuc village with many looms (5-7 looms) linked together for sale in Hanoi. With a large number of items, the products are diverse: ribbons, tapes, cinnamon, silk, sa... so their goods are easier to sell and more expensive than those who doing retail. In the evening, when they return, they divided the turnover amount. The prestige of this family group is increasing, there are many merchants ordering. At this time they do not go to Hanoi anymore but their customers from many place came to Van Phuc to purchase (Hanoi, Hai Phong, Saigon ...) For convenience of trading, they opened the shop right at the village named Phuc Hop Shop. Sourcing for the initial sale was weaved by these families. Later on, due to the demand in volume of goods they bought more in Ha Dong market and in the village. There were guests at Saigon demanding "Phuc Hop" transport products to there. A trading agent named Long Van Company of Phuc Hop Shop was born at No. 229 Lagrange Street (behind Ba Den Pagoda) Saigon

After a period of strong development (1930-1939), until the Second World War broke out, the import and export of French goods was limited, silk weaving began to encounter difficulties. Source of raw materials and consumption of products is weak,

weaving industry tend to go down. By 1945, the August Revolution was successful, opening a new stage of development for the textile industry.

#### **4. Discussion and conclusion.**

Although many traditional villages have disappeared with time, nowadays statistics show that Vietnam has nearly 2.000 trade villages of the main occupations: lacquer, ceramics, gold, silver, embroidery, paper, stone wood.... In the silkworm and silk weaving industry have always played an important role in the level of traditional handicrafts competition in Vietnam through historical routes. Today, before the integration period, silk weaving has opened up new opportunities for development, but facing many challenges before the impact of the goods applied modern science and technology. The traditional silk weaving industry in Vietnam has benefited from the competition in the context of major agreements such as AFTA (ASEAN Free Trade Area) as a multilateral free trade agreement among ASEAN countries in the spirit of the agreement, the tariff reduction will be reduced to 0- 5%, gradual elimination of tariff barriers for the majority of commodity groups and harmonization of customs procedures between such countries so that the goods of Vietnam in general and traditional textiles in particular will have many opportunities to target large markets in the region.

In particular, the TPP Agreement (Trans-Pacific Strategic Partnership Agreement) with the elimination of tariff barriers for tariff lines for Vietnamese textiles and clothing, the agreement, when put into effect, will create conditions for these products to penetrate the large market, integrate into the world economy, contribute significantly to the import-export turnover for Vietnam, generate revenue. The textile and garment development solves many problems of employment, cheap labor in the Vietnamese market.

In the conference “Trans-Pacific Strategic Partnership Agreement (TPP) and impact on Vietnamese garment enterprises” was held in Dong Nai by the Vietnam Textile Association and Dong Nai People's Committee. There are many opinions of experts that the advantages of the TPP is the wide freedom of goods and import duties are eliminated completely when the Agreement is in effect.

Textile and garment exports to the US market, the tax rate of 17.5% in the European market the tax rate is 9.6% in case the output of textile and garment of Vietnam to this market accounts for less than 17%, if Export turnover exceeds 17%, the tax rate will automatically adjust to 17.5% the same as the US market.

Vietnam Textile and Garment Association said that the textile and garment industry is currently conducting surveys on six areas including market, materials, labor, equipment, management and finance of domestic textiles and garments

enterprises, to have detailed aggregate data to further participate in negotiations on the TPP integration process.

Nguyen Van Tuan, Deputy General Secretary of the Vietnam Textile and Garment Association, said that the export turnover of the textile and garment industry is now ranked second in the total export turnover of the whole country.

If the textile and garment export turnover in 2011 reached nearly 2 billion USD, the turnover in 2012 have reached 17.1 billion USD, making Vietnam became the fifth largest textile and garment exporter in the world.

However, Mr. Tuan also said that the major challenge of Vietnam's textile and garment industry is the dependence on foreign materials, backward technology equipment, much dependence on processing.

Some raw materials such as cotton must be imported 99% from the countries' market; fabric must be imported from 6 billion meters on the total demand is 6.8 billion meters; Fiber material must be imported 50%.

According to the Vietnam Textile and Garment Association, the tariffs for key export markets of Vietnam are too high. Specifically, in the US textile and garment export market, the US accounts for 50%, Europe accounts for 17%, Japan 12%, South Korea 6%, and accounts for 2% for the rest other markets. In particular, the US market is subject to a tax rate of 17.5% and Europe is 9.6%.

Mr. Nguyen Van Tuan analysis, if after Vietnam signed the TPP Agreement, the export tax rate of textile and garment products in the United States and markets of TPP countries will be lifted.

On the other hand, through the TPP Agreement, Vietnam will have the opportunity to negotiate for the United States and its member countries to open markets for Vietnamese goods, creating strong leverage to the development of export and curb trade deficits.

In theory, any country has state-owned enterprises, just different in size and field of activity. Many people say that the provisions on state-owned enterprises are aimed at Vietnam and Malaysia, the two countries have regional and world-class state-owned enterprises, playing an important role in the economy. Malaysia's constitution provides more favorable conditions for economic activities involving indigenous peoples, which create many difficult to negotiate the economy. Vietnam has long been emboldened by state-owned enterprises to take advantage of bank loans, using resources such as land and a number of monopoly sectors. In this regard, Vietnam's chief negotiator, Deputy Minister of the Ministry of Industry and Trade, Mr. Tran Quoc Khanh said that when joining the WTO, we have firm commitments

on state-owned enterprises. The TPP commitments remain fully aligned with the reform roadmap for transparency in state-owned enterprises in line with the Party's and State guidelines and guidelines.

In particular, we need to take note on the problem of the principle of origin of goods in the TPP: Only items using raw materials within the TPP are entitled to a preferential tax rate of 0%. The regulation will strike directly in Vietnam's key export sector is textile and garment.

So far we have relied on cheap labor to compete in the textile and garment market. The auxiliary industries are almost abandoned to the fact that materials from China are flooding the Vietnamese market with this situation, the textile and garment industry - and possibly many other industries - will not be entitled to benefit from the TPP Agreement. As we are still struggling, many Chinese and Taiwanese businesses have quickly invested in Vietnam, investing in textile auxiliaries, doubling the investment of China compare with 2012. From that, Chinese businesses will most benefit from the commitments of Vietnam, while Vietnamese businesses must outsource for surface profits.

We do not accept a higher principle of origin for tariff preferences, so in the short term, Vietnamese enterprises will entitled to benefit, even if that benefits are not worth much compared with foreign companies holding 98% of the market share of raw materials. This is a chance, a motivation for businesses to change their thinking in a comprehensive manner so as not to be eliminated right in the country. In the textile industry, the textile industry requires huge capital and most polluting. We have to carefully consider trade-offs to take advantage of this opportunity.

The issues mentioned above are only a small part of the challenges and opportunities that TPP will bring to Vietnam's textile and garment industry. In the long term, the strategic agreement of the century will push Vietnam to make strong changes and reforms in a better direction. In addition to having to compete with “strong” foreign competitors in many areas, we will have access to a whole new generation of technology, machinery and materials are huge capital flows into the economy after the signing of the agreement. The handicraft items in general and traditional crafts in particular face many opportunities and face many challenges in the process of integration.

Some recommended solutions to preserve and develop traditional weaving in the integration process

It is necessary to promote the role of the subject, ready to prepare for the integration of traditional craft villages in general and textile and garment in particular; must always take the initiative in the process of integration by promoting nimble dynamism and willingness to compete with major countries. The craftsman must constantly make effort and creativity from the change of technology and techniques to produce high quality products but still retain the traditional elements and meet the tastes of the current market.

It is necessary to have policy support from state management agencies, mass organizations and social organizations to preserve and develop traditional craft villages by finding stable output for products of traditional handicraft weaving, production capital support, production expansion of a larger scope.

The mass organizations should pay attention to the propaganda and education to raise the awareness of the community in protecting and promoting the village traditions, enhancing funding for the cultural and historical relics of the village. Need to introduce the culture and products of the trade village by building up brands, there is a gallery showcasing the famous products of artisans. There should be a mechanism to encourage skilled artisans by giving and rewarding merit.

It is necessary to associate craft villages with tourism development and services such as the preservation of historical and cultural relics, traditional cultural space, promoting the branding of traditional craft villages to localities in the country as well as in the world.

It can be said that the preservation and development of traditional craft villages in the current context have many opportunities and challenges in the process of competition with industrial goods in the period of industrialization and modernization. Along with a number of solutions in general, the State needs a lot of supportive policies to promote handicraft villages by giving priority to loans, tax incentives... Production space is also a difficulty that traditional villages want to expand the scale of production is encountering. Therefore, the State should have mechanisms and policies to allocate land and contracts to lease land in a stable manner so that production establishments in traditional craft villages can expand production scale. It is necessary to create conditions for traditional craft villages to have access to information on technology, science and technology and markets; to support capital and create conditions for trade villages to participate in fairs, exhibitions, seminars... so that they can access information actively in the process of integration

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# **SOLUTIONS TO IMPROVE THE PRODUCTIVITY OF VIETNAM'S MINING INDUSTRY FROM THE EXPERIENCE OF THE WORLD MINING INDUSTRY**

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## **Abstract**

*In terms of theoretical basis, methods of calculating labor productivity such as labor productivity by value, overall equipment efficiency, factor productivity, and mine productivity index (MPI) are mentioned in an integrated way. On that basis, the study focused on assessing the status of productivity of the mining industry in the US, Australia and some regions in the world according to the mine productivity index method. Finally, the study proposes a solution to improve the productivity of Vietnam's mining industry such as changing thinking in increasing productivity, building an effective human management system and applying appropriate technology.*

**Keywords:** *Mining, Productivity, Industry*

## **1. Introduction**

Competition is becoming increasingly fierce in a market economy, enterprises are always trying to find solutions to improve the competitiveness of businesses. One of the strategic solutions is to improve productivity or labor productivity. This is also a general picture of enterprises in the mining industry in Vietnam when facing a sharp decline in the selling price of minerals in the world market. Many solutions to improve productivity have been introduced by mining enterprises such as increasing production and reducing production costs. However, these solutions still seem to be insufficient to help enterprises effectively solve productivity problems. Therefore, based on research on the productivity of the mineral industry in the world, especially the mining industry of Australia, the study proposes some solutions to improve productivity in the Vietnam mining industry.

## **2. Methodology**

Currently, many methods have been applied to calculate the productivity of a country, an industry or a business. The author summarizes and presents 4 methods of productivity and labor productivity in the industry / enterprise that have been applied in the mining industry in Vietnam and in the world.

### ***2.1. Value based method***

According to this method, the labor productivity is calculated by sum up the output value of money of all products produced by the enterprise or industry. Hence, labor productivity is calculated by the following formula:

$$W = Q / T$$

Where

W: Labor productivity level

Q: is the value of total output, value added or revenue

+ Value of total output is the value of all products produced, including costs and profits

+ Value added: is the newly created value

+ Revenue is the value earned after selling products

T: employees in enterprises, calculated by day, hour, minute, day-person, person-hour

Advantages: This method can be used for different types of products including unfinished products. Overcoming the disadvantages of the method of calculating labor productivity in kind

Disadvantage:

+ Not encouraging saving materials and using cheap supplies. Where more expensive supplies or supplies are used, higher productivity levels will be achieved

+ Affected by the calculation of total output by the industrial method. If the volume of products cooperates with the outside, the structure of products changes will distort the productivity level of the enterprise itself.

+ Only used in the case of constituting products that do not change or change little because the composition of products changes will lead to a difference in the level and speed of labor productivity. When changing from low-cost labor products with high value to high-labor-consuming products with low value, labor productivity decreases and vice versa labor productivity increases.

Minerals mining and processing companies are often interested in labor productivity, measured by output / quantity of labor, but have not paid much attention to the movement of total materials. The drawback of this measure is that it does not take into account that the output may be affected by geological conditions such as reduced ore levels, investment in machinery or the use of tires and explosives, etc.

## ***2.2. Overall Equipment Effectiveness***

Overall equipment effectiveness (OEE) is calculated based on data on operating and stopping times of machinery.

OEE = Device availability (Availability) x Device performance (Performance)  
x Product quality level (Quality)

$$\mathbf{OEE = A \times P \times Q}$$

Where

- A = (Actual machine running time / Scheduled running time) x 100%
- P = (Actual capacity / Design capacity) x 100%
- Q = (Quantity of quality products / Quantity of products produced) x 100%

Studies around the world indicate that the average OEE of manufacturing plants is about 60%. For world-class well-managed factories, OEE must be around 85% or more, with the following components:

- A: the readiness of the device needs to reach 90%
- P: equipment performance needs to reach 95%
- Q: product quality level must reach 99.99%
- + No defective products
- + There is no problem stopping the plan
- + No accidents occurred during operation
- + Enticing all employees into group activities to voluntarily maintain and improve equipment.

Although this method helps us with meaningful values of machinery performance such as availability, operation and speed - but this measure focuses on only one part of the operation. production, not the whole process.

## ***2.3. Total Factor Productivity***

To overcome the disadvantages of the above two methods of measuring productivity, economists also apply a more effective measurement method which is the total factor productivity (TFP).

TFP is a complex indicator that measures the combination of capital, labor, inputs and effective management, so the calculation of TFP will indicate the productivity of all inputs as weak. How much labor, capital, technology and management factors contribute, how much in productivity growth so that we can

analyze and offer solutions and recommendations to improve efficiency. business production of enterprises.

Thus, it can be understood that TFP is an indicator to measure the productivity of both "labor" and "capital" in a specific activity or for the whole economy. TFP reflects the progress of science, technology and technology, whereby the increase in output depends not only on the increase in the quantity of inputs (traditional mode) but also on the quality of the inputs are labor and capital.

Accordingly, improving TFP is a measure to increase output by improving the quality of inputs and labor and capital. Along with the same amount of inputs, the output may be larger thanks to improving the quality of labor, capital and effective use of these resources. Therefore, TFP increase is associated with the application of technical advances, technological innovation, improvement of management methods, improving skills and skills of workers ....

Currently, there are many ways of calculating TFP, but it is common to apply it under the Cobb-Douglas production function which is considered technically effective when the output level produced is the maximum that can be obtained from a set combination of given inputs.

$$Q = AK^{\alpha}L^{\beta}$$

Where:

- Q: output
- K: capital
- L: labor
- A,  $\alpha$ ,  $\beta$ : coefficient

Based on the research results, Asia Productivity Organization (APO) pointed out that TFP's growth source is mainly based on 5 main factors as follows:

i) Labor quality: Labor quality includes educational qualifications related to the ability to absorb and apply scientific and technological advances. Therefore, to improve the quality of labor, enterprises need to focus on; training to improve skills and skills of workers as well as technology transfer training. Investing in human resources increases the ability and capacity of the workforce in producing high quality products and services, which is a very important contributor to the loss of TFP.

ii) Changing demand for goods and services: This factor affects TFP through increasing domestic and export demand for products and goods as an important basis for optimal use of resources.

iii) Capital structure changes: This factor requires businesses to increase investment in advanced technology such as information and communication technology, modern technology and automation. Thus, capital is invested in high-productivity fields, thereby improving the efficiency of the economy.

iv) Economic structural change: Economic structural changes related to the allocation of economic development resources between sectors and economic sectors. This leads to more resources being allocated to higher productivity sectors or sectors, thereby contributing to the increase in TFP.

v) Application of scientific and technical advances: The application of scientific and technical advances will promote creative and innovative activities; research and develop new products, improve production processes; Advanced management technology (systems, advanced management tools...). This factor includes activities such as innovation, research and development, positive working attitudes, management systems, organizational systems... impact to improve productivity.

Among the 5 main factors contributing to the increase of TFP as mentioned above, 03 factors are determined to be in the field of science and technology, direct and strong impacts on organizations and enterprises, namely: Pressure use of technical advances; Labor quality and capital structure change.

However, for this mineral mining industry, the output is calculated by value added so it does not take into account two important factors that are the impact of changes in geological conditions such as ore levels and price of input goods (usually tends to increase). Mining companies cannot control these two factors, so the calculation of TFP does not fully reflect the performance and productivity.

#### ***2.4. MineLens Productivity Index***

In early 2015, in a study on labor productivity in the world mining industry, experts of McKinsey Consulting Company developed a method to calculate productivity in mineral mining and processing industry according to mine productivity index. (MPI-MineLens Productivity Index) to calculate the world mining industry's productivity, as well as the mining industry of some countries, by eliminating the decline in ore level and input costs (often trending up).

According to this yield calculation method, the world mining industry's productivity has decreased by 28% compared to 10 years ago (2004).

Experts say that the mining industry needs a method that can help managers know whether the company has been operating effectively and can measure productivity by controllable factors.

The factors that companies in the field of mineral mining and processing can control are investment capital, labor, production processes, spending on purchases of goods, services

and organizational methods. manage. This method of measuring productivity has eliminated the factors affecting productivity such as the fluctuation of ore levels, or further and further exploitation. These are factors that increase production costs.

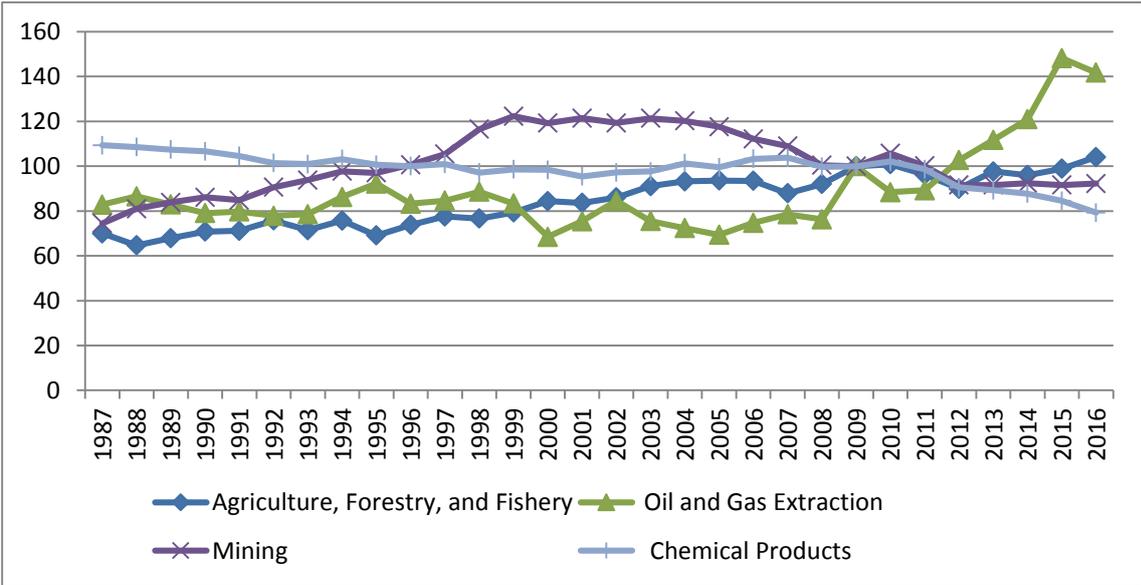
The mine productivity index (MPI) is based on the Cobb-Douglas production function (the production function used to measure the efficiency of the economy). However, when applied to the mining industry, this production function has been adapted to be applicable by using variables such as tangible output, number of employees, net asset value and non-labor costs. The tangible output is measured by the movement of the overall material so the MPI index is not affected by factors such as changes in ore levels, stripping rates or prices of goods. These are the factors that the mining industry cannot control.

**3. Current situation of productivity of the mining industry in the world**

**3.1. The decline in productivity of the mining industry in the world**

According to the MineLens Productivity Index Report (MineLens Productivity Index - MPI) of McKinsey company announced in early 2015 clearly shows the decline in the ranking of the mining industry's productivity compared to other industries such as umbrella production. Yields, chemicals, ... Productivity of the world mining industry has decreased by 28% compared to 10 years ago.

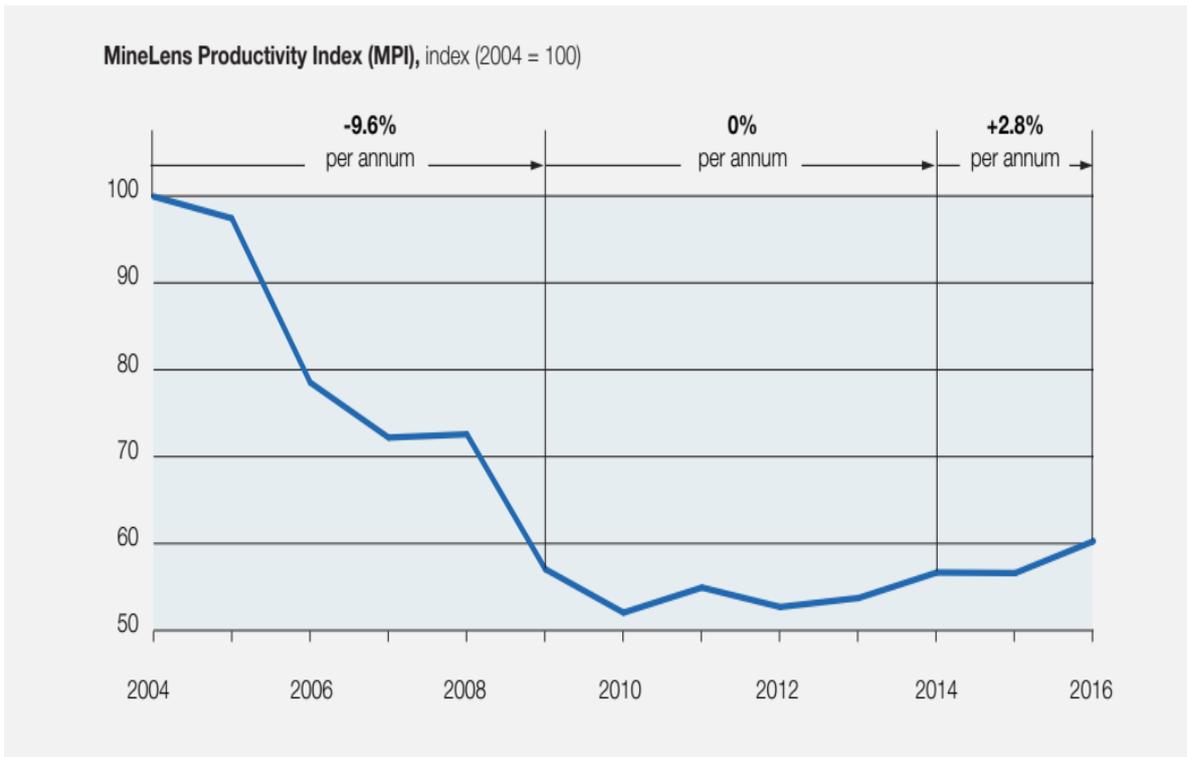
This can be seen clearly when analyzing the productivity of mining, oil & gas, agriculture and chemical industries in the United States. If taking the labor productivity index in 2009 is 100, the labor productivity index of the US mining industry is only 92.2 in 2016. While this index of oil and gas industry in 2016 is 141.7 (figure 1).



**Figure 1: Labor productivity in some industries in USA in period 1987-2016**

*Source: Bureau of Labor Statistics of USA*

When analyzing the productivity of the world mining industry according to the MPI index, the industry's productivity decreased by 6% / year in the period 2004-2009 and 0.4% / year in the period of 2010-2013. Thus, the average mining industry in the world has reduced productivity by 3.5% / year in the period 2004-2009. MPI data show that the sector is making some headway: its 2014 to 2016 MPI score is starting to move up from the period of stagnant productivity in the five-year period from 2009 to 2014 (Figure 2).



**Figure 2: Productivity of the world mining industry is calculated according to the MPI index period 2004-2016**

*Source: Company Annual Report of McKinsey*

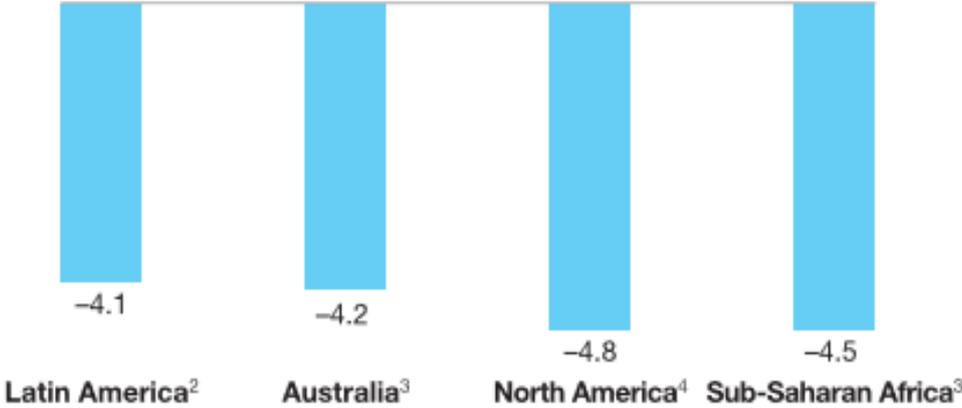
The main factor leading to the decline in productivity of the world mining industry is that the mining industry has just come out of the price cycle of minerals that have increased by more than 50% for 10 years. Higher mineral prices and increased production lead to mining companies not interested in productivity targets. This means that increasing production costs to increase output to meet demand is not a problem that mining companies care about.

The annual average yield decline in the mining industry varies from region to region (figure 3). The North American region experienced the largest decrease in productivity by 4.8% per year during the period 2004-2013, followed by the Sub-

Saharan Africa, with a rate of 4.5%. The mining industry of Australia is also not out of this trend when the average reduction of 4.2% per year during this period.

... as well as across most major mining geographies.

**MineLens Productivity Index,<sup>1</sup>**  
compound annual growth rate



<sup>1</sup>Productivity performance is calculated from cost data (for capital expenditures and nonlabor operating costs) using the reported currencies of the mine operators.

<sup>2</sup>Compound annual growth rate (CAGR) is for 2005 to 2012.

<sup>3</sup>CAGR is for 2004 to 2013.

<sup>4</sup>CAGR is for 2006 to 2013.

McKinsey&Company | Source: Company annual reports; McKinsey analysis

**Figure 3: Labor productivity in the mining sector decreased by regions**

*Source: Company Annual Report of McKinsey*

**3.2. Productivity in the Australian mining industry**

Applying MPI index to calculate world mining industry productivity, as well as mining industry of countries such as America, Australia,... and mining sectors in regions such as Latin America, North America, Sub-Saharan,... Industry research mines of a specific country like Australia will help to be able to better identify the industry's trend of changing productivity.

During the period of 2008-2009 when world mineral demand increased, Australia's mining industry contributed 9.8% to the country's gross domestic product (GDP). In the early 2000s, the Australian mining industry, as well as those of other countries, did not face an effective decline as China's demand for minerals increased, causing prices to rise artificially. However, this growth cannot be sustained and then the demand for minerals has fallen rapidly worldwide, making the Australian mining industry lose billions of US dollars.

Australia is assessed to have a developed mining industry and a major contribution to GDP. Australia's mining industry ranks third in the world in terms of revenue and has a high growth rate during the booming mineral prices. In the early 2000s, the Australian mining industry accounted for about 5% of GDP. However, during the period of high mineral prices, this rate increased to 9.8% in 2008, 2009. When applying the MPI index for the Australian mineral industry, the yield only reached the highest score of 104 points. In 2007, it was only 88 points in 2013, ranked second in terms of low productivity in the world.

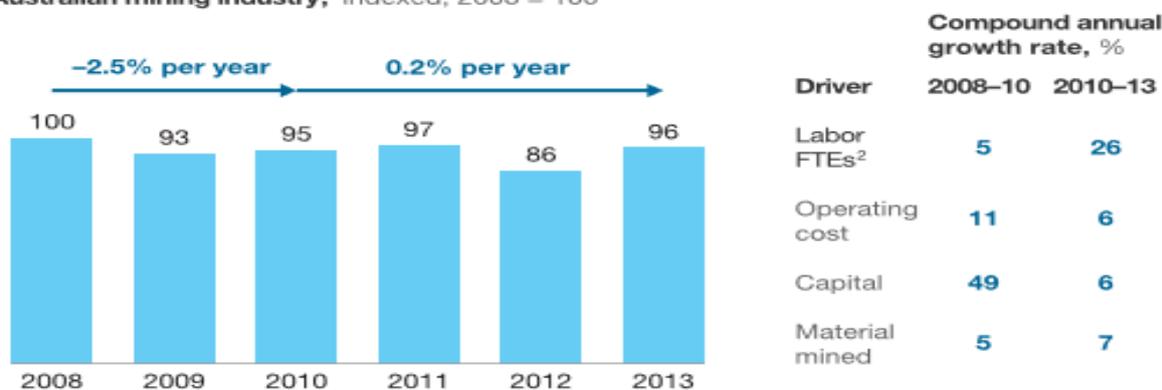
Rising mineral prices in this period led to a rapid increase in the value of output. However, the volume of output does not increase corresponding to the value. Therefore, when applying the MPI index to calculate the productivity of the Australian mining industry, in the period 2008-2010, the productivity decreased by 2.5% / year. Factors that reduce productivity are the cost of borrowing increased by 49% and the operating cost increased by 11%. In addition, investment projects in the mining industry need time to go into operation, leading to an increase in loans that do not correspond to output.

Demand for minerals declined in the global market since 2011, leading to a sharp fall in the prices of minerals that have caused difficulties for the Australian mining industry. To cope with this problem, mining companies have implemented many measures such as cutting production costs, reducing borrowing costs, reducing investments, preserving cash flow and balancing balance sheets. The math has been imbalanced from procurement and implementation of inefficient investment projects.

Thanks to the effective and resolute application of these solutions, through analysis of the MPI index, the Australian mining industry's productivity began to increase steadily from 2010 to 2013 at the rate of 0.2% per year when the companies increased cost and loan cuts. The ratio of capital decreased significantly from 49% / year in the period of 2008-2010 to 6% / year and operating costs decreased from 11% to 6% in the period of 2010-2013. Meanwhile, the number of employees increased from 5% to 26% and material costs increased from 5% to 7%. However, this period increased by 7% / year compared to 5% / year in the period of 2008-2010 when investment projects started to operate (Figure 4).

Mining productivity in Australia saw a decline, but aggressive cost and capital cuts have started to reverse the trend.

**MineLens Productivity Index performance for aggregated Australian mining industry,<sup>1</sup> indexed, 2008 = 100**



<sup>1</sup>Based on Australian coal, copper, gold, iron ore, lead, nickel, and zinc mining. Cost evolution of coal is used as a proxy for the industry. Capital evolution of the top 50 mines are used as a proxy for the industry.

<sup>2</sup>Full-time equivalents.

McKinsey&Company | Source: AME; Australia Bureau of Statistics; Energy Information Administration

**Figure 4: Factors affecting the productivity of the Australian mining industry in the 2008-2013 period**

*Source: McKinsey Company Annual Report*

Note:

- Data based on coal, copper, gold, iron, lead, nickel, and zinc minerals. The increase in coal mining costs is considered to represent the entire Australian mining industry. The capital cost of the 50 largest mining companies is considered to represent the entire Australian mining industry.

- Number of employees converted to full-time work

#### **4. Solutions to improve productivity in mineral exploitation in Vietnam**

The mining industry enterprises, including mineral exploitation enterprises in Vietnam use measures to increase productivity by reducing production costs and increasing output but do not care about exactly how rationalization of key solutions to improve productivity.

In the current mining industry, productivity decreases when mining operations are expanded rapidly to scale, thus leading to difficulties in managing and operating large and complex companies. Besides, it is a problem of high mining companies' turnover but lacking experienced staff in improving production efficiency.

Through practical research in the mining industry in Vietnam, as well as referring to the mining industry experience in the world, besides the traditional

solutions that domestic enterprises are applying to increase productivity is to cut down cost and increase in output, companies need to implement some solutions as follows:

**Firstly**, it is necessary to change thinking in increasing productivity, not just about reducing costs and increasing output.

When mineral resources can be easily exploited, a new approach is needed to improve productivity. Mining companies not only implement solutions related to reducing costs and increasing output, but also need to apply the latest solutions in innovation of production and business activities. Companies cannot just implement single solutions but need to apply comprehensive solutions to transform their business operations. That is to ensure that each stage of the production process is optimized but not only improved at one stage but throughout the system.

**Secondly:** need to build effective management system and talented people

Human factor is very important. Labor productivity is a matter of executives, so they need to be talented people to direct and lead the innovation process from the beginning to the end.

Improving efficiency in contract management is one of the key factors to improve productivity. One of the effective solutions to increase productivity but often not interested in it is managing contractors.

**Thirdly**, it is necessary to apply appropriate technology in the mining industry

Currently, the 4th industrial revolution has helped enterprises in the mining industry improve production efficiency in many stages of the mining process. However, when to apply, how to apply, when to apply it needs to be studied and evaluated carefully to avoid inefficient investment.

Automation in mining and processing is considered an important element of the mining industry. However, it is not a curative remedy for productivity problems. The huge amount of information can help motivate, make management decisions more accurately thanks to more detailed information but it cannot solve all problems. However, in reality it is not so because many businesses have applied automation, but labor productivity has not improved much. Therefore, solutions to technological innovation must be implemented appropriately depending on the actual conditions of each enterprise, depending on natural conditions and especially human resources.

## **5. Conclusion**

The mining industry in Vietnam, as well as other countries in the world, is having problems with productivity decline. Facing this challenge, businesses have quickly launched a series of effective solutions such as restructuring the organization and

management model; improve cost management, human resource management; Application of science and technology in production ... Over the past time, the synchronous solutions mentioned above have proved effective in improving the productivity of Vietnamese mineral mining enterprises. However, the solutions proposed by the article may be meaningful suggestions for enterprises in this sector of Vietnam to increase productivity to improve product competitiveness and price. quality.

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# DEVELOPING THE SYSTEM OF BUSINESS PERFORMANCE ANALYSIS INDICATORS OF PAPER ENTERPRISES IN VIETNAM

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## **Abstract**

*This study aims to develop a system of performance analysis indicators for Vietnam's paper enterprises. The research results developed a system of 34 indicators analyzed according to the horizontal information analysis process of Brown (1996). The analytical indicators focus on economic efficiency but also refer to factors of social efficiency and ecological efficiency. At first, the study used a technique of in-depth interviews with 15 paper industry experts to discover new problems. Then, the study used EFA and ANOVA to analyze data from the survey of 206 Vietnamese paper enterprises of different sizes. Research results are the basis for proposing recommendations for Vietnam's paper enterprises on the use of these analytical indicators.*

**Keywords:** *efficiency, Vietnam's paper enterprises, analytical indicators\*

## **1. Introduction**

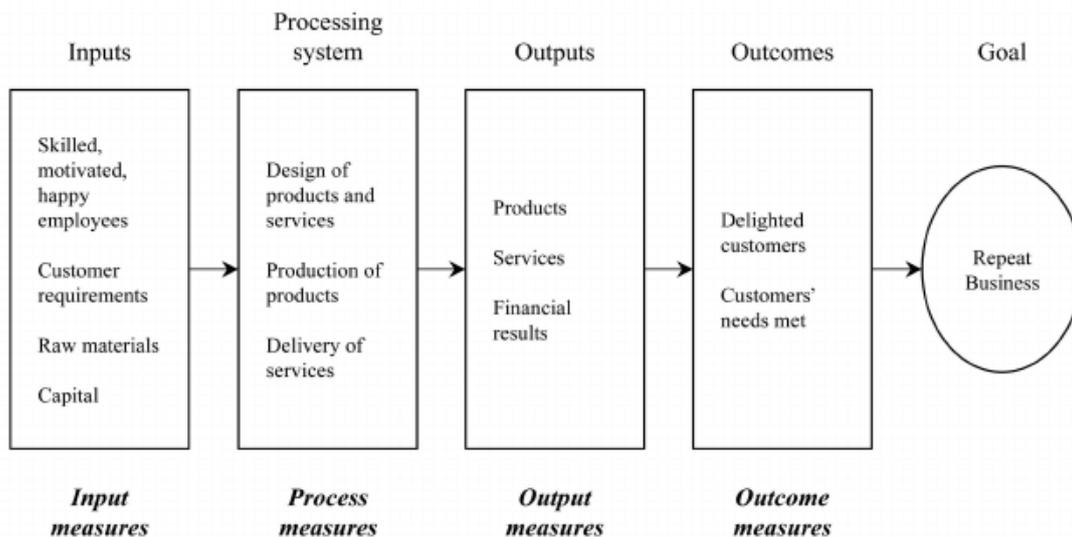
Effective business is the goal during the operation of enterprises. Analysis of business performance has urgent meaning for the sustainable development of enterprises in the current competitive and global economy. The analytical criteria are considered useful when performance's analysis has been verified with a number of specific purposes (Beaver (1966), George E. Pinches, Kent A. Mingo et al. 1973, Chen and Shimerda 1981). The system of analysis indicators will be more comprehensive when there is a combination of financial and non-financial indicators (Kaplan 1996, Kaplan 2001, Ittner and Larcker 2003). The system of business performance analysis indicators is not comprehensive if only analyzing the overall efficiency of enterprises. From the perspective of the internal value chain of the enterprise, the product will go through all the activities of the chain and for each activity the product will accumulate some value (Porter 1985). The main activities in the chain such as supply, production and consumption are linked. The output of this operation is the input of the next activity. Therefore, in addition to the overall

efficiency, it is necessary to analyze the efficiency of the stages in the business process as input - the production process - output - results.

The Vietnam's paper industry was formed very early, playing a very important role in the growth and development of the education, economics and social culture of the country. Although production has increased significantly so far, however, the profitability ratios of Vietnam's paper enterprises in recent years tends to decrease, contributing a small contribution to the total national production value. The Vietnam's paper industry is facing a big problem from its internal industry such as: high product prices, not meet the demand for quantity and quality, the product category is not diversified, the output of all kinds of products is not balanced. The paper production process will consume a lot of energy, so it depends on imported raw materials; heterogeneous and outdated production equipment has resulted in the paper production in Vietnam having high levels of pollution, causing significant impacts on people and the surrounding environment. Therefore, the business performance of paper enterprises is assessed not only in economic perspective but also with consideration of ecological efficiency.

The view of efficiency is very wide and complex, but in this study, the author gives the following viewpoint of efficiency: "Business efficiency of an enterprise is an economic category, reflecting the ability to reach the intended goal through the use of real resources and maximizing the benefits of potential resources, is shown by comparing the correlation between the outputs with the inputs. Business performance of enterprises is a process of causal connection, the overall efficiency is generated from the business performance of different departments of the enterprise associated with the production and business process of the enterprise".

The theoretical model in this study is the Input - Process - Output model - Result (Brown 1996). Brown's model was officially born as a theoretical model to measure performance based on horizontal analysis of information, that is, focus on an organization's business process (Figure 1). Input Model - Process - Output - Result - Brown's results are very useful because it highlights the difference when measuring inputs, processes, outputs and outcomes based on causal relationships. Brown took the illustration of baking to clarify this. Measuring the input of baking will involve the amount of flour, egg quality... that is related to the quantity and quality of the input materials. Process measurement will involve oven temperature and baking time. Measurement output will be concerned with the quality of the cake, that is the quality of products or services created. Measuring the output will be related to the satisfaction of cake eaters (Brown 1996).



Source: Brown, 1996

## 2. Method

After synthesizing previous studies on indicators of business performance analysis, the author has built a system of indicators for analyzing business performance, including indicators for analyzing department efficiency and indicators for general efficiency analysis with expected expectations of stakeholders in the analysis process. The system of proposed indicators includes 41 indicators, divided into 4 groups: Group of indicators to analyze the efficiency of input supply activities; Group of indicators to analyze the efficiency of production and business activities; Group of indicators to analyze the efficiency of consumption activities and indicators' group analyzing the efficiency of overall operations.

After that, the author started the process of experimental research with 2 phases: Qualitative research phase and Quantitative research phase.

Qualitative research is carried out in the first stage of the research process of the indicator system to analyze the efficiency of business operations, to eliminate targets that most experts consider inappropriate or duplicated when based on business characteristics of Vietnam's paper enterprises. Qualitative research techniques used are in-depth interviews (semi-structured). Experts participating in in-depth interviews are researchers and experts at the Research Institute for Paper Technology and Xenluylo, managers of paper enterprises... The main content is interested in in-depth interviews around the system of 41 indicators to analyze the efficiency of business performance: What is the assessment of the appropriateness of the system of indicators of business performance analysis? What is the importance indicators of business performance analysis? What is the frequency of using indicators in the analysis?

Quantitative research: The purpose of the quantitative research method in this step is to provide a complete system of indicators for analyzing business performance,

meeting the needs of information analysis of Vietnam's paper enterprises. The scales selected from qualitative research results will be included in the survey to collect data on a wider scale. According to the survey data of the General Statistics Office of Vietnam in 2017, Vietnam has 2,485 paper enterprises of different types and sizes, often scattered or concentrated in industrial clusters and trade village clusters. The author will base on the requirement of a sufficiently reliable sample size for analysis based on the experience of previous studies to be able to use the appropriate method in this study. Specifically, with the method of exploratory factor analysis EFA, the sample size is at least 5 times the number of measurement variables. The results of qualitative research give 40 measurement variables, so the minimum sample size is  $5 \times 40$  with 200 samples (Hair, Anderson et al. 1998). To ensure minimum collection of 200 samples, the author issued 280 survey forms. Sampling method in the study is convenient sampling in Yen Bai, Phu Tho, Vinh Phuc, Hanoi, Hung Yen, Bac Ninh and Thanh Hoa provinces. The form of the survey questionnaire is directly, via email and by phone.

Variables used in the study are qualitative variables measured through Likert scale (5 options). Research question: Please give a view on the importance of indicators in analyzing business performance in units with 5 levels of selection: 1. Do not use, 2. Less use (once a year), 3. Periodically (every 6 months), 4. Regularly used (quarterly), 5. Very often used (monthly).

The collected survey data will be cleaned of information, data entry and statistical analysis of sample description on SPSS 20 software. Then, the analysis steps are as follows:

- Remove variables that are not reliable enough by Cronbach's Alpha index and Corrected Item - Total Correlation. According to (Hair, Anderson et al. 1998) eligible variables are variables with Cronbach's Alpha coefficient of 0.6 or higher, and according to (Nunnally and Bernstein 1978), the coefficient Corrected Item - Total Correlation is 0.3 or higher. Unqualified scales will be removed.

- Exploratory factor analysis (EFA) to assess convergence value, discriminant value of scale. The method of extracting the principal component combines varimax rotation. Conditions for EFA analysis according to (Hair et al., 1998) are to meet the requirements:

- + Factor Loading > 0.5;
- + Index  $0.5 \leq \text{KMO} \leq 1$ ;
- + The Bartlett test has statistical significance (Sig. <0.05);
- + Percentage of variance > 50%

- Testing ANOVA to consider the difference in the indicator system between manufacturing enterprises and distribution enterprises, between enterprises of different sizes by comparing the weighted mean among enterprises.

### 3. Results

Research shows that the suitability of the division of group indicators, after adjusting based on qualitative results, the indicator system has changed from 41 initial indicators with 38 indicators as shown in Table 1:

**Table 1. Indicator system for analyzing business performance of Vietnam's paper enterprises after qualitative research**

Encode	Indicator system for analyzing business performance
<b>1. Group of indicators to analyze the efficiency of input supply activities</b>	
CTDV01	Efficiency in providing quality materials
CTDV02	Efficiency in providing materials types
CTDV03	Coefficient of capacity to supply energy for paper production
CTDV04	Coefficient of water supply capacity for paper production
CTDV05	The degree of completion of the indicator "average purchase price per unit of material or goods each type"
CTDV06	Time to ensure materials or goods for paper production and business activities
CTDV07	Procurement costs per unit of raw materials supplied
CTDV08	Innovation coefficient of fixed assets
CTDV09	Coefficient of fixed asset equipment for paper production per a worker
CTDV10	Cost rate of chemical additives
CTDV11	Rate of trained workers
CTDV12	The average training time per employee
<b>2. Group of indicators to analyze the efficiency of production and business activities</b>	
CTSX13	Rate of consumption of raw materials / energy / water per unit of finished paper
CTSX14	Average labor productivity
CTSX15	Coefficient of using existing equipment and machinery

<b>Encode</b>	<b>Indicator system for analyzing business performance</b>
CTSX16	Average productivity of one hour of machine
CTSX17	The rate of broken paper products
CTSX18	Rate of cost repairing and maintaining the equipment.
<b>3. Group of indicators to analyze the efficiency of consumption activities</b>	
CTDR19	Ratio of net revenue compared to cost
CTDR20	Cost for 1,000 VND of paper products
CTDR21	Efficiency ratio of sold goods' cost
CTDR22	Efficiency ratio of sales' cost
CTDR23	Efficiency ratio of enterprise management's costs
<b>4. Group of indicators to analyze the efficiency of overall operations</b>	
CTKQ24	The add value per each employee
CTKQ25	Performance of using materials
CTKQ26	Energy, water consumption productivity
CTKQ27	Production capacity of fixed assets
CTKQ28	Profitability ratio of fixed assets
CTKQ29	Return on investment (ROI)
CTKQ30	Return on equity (ROE)
CTKQ31	Return on assets (ROA)
CTKQ32	Number of asset revolutions
CTKQ33	Return on revenue
CTKQ34	Number of inventory rotations
CTKQ35	Time for one inventory rotation
CTKQ36	Income of a stock
CTKQ37	Contribution index of enterprises for the state budget
CTKQ38	Index of environmental improvement

*(Source: Author's investigation and synthesis)*

In the research sample, number of operation's years of the business paper ranged from 1 year to 57 years, in which, the number of enterprises with less than 10 years of operation accounted for 46% (95 enterprises), the number of enterprises

operating from 10 to less than 15 years accounted for 41,7% (86 enterprises) and the number of enterprises operating over 15 years accounted for 12,3% (25 enterprises) (*Table 2*).

**Table 2: Age and business form of the survey sample**

<b>Variable</b>	<b>Number of observations</b>	<b>Average value</b>	<b>Standard deviation</b>	<b>Minimum value</b>	<b>Maximum value</b>
<b>Age of enterprise</b>	206	10,65534	7,219394	1	57
< 10 years	95				
10 =< 15 years	86				
> 15 years	25				
<b>Capacity (tons / year)</b>	206	7.172,35	177.589,90	1	200.000

*(Source: Author's synthesis)*

**\* Test the reliability of the scale**

The author evaluates the reliability of the scale according to each group of analysis indicators, including: (1) Group of indicators to analyze the efficiency of input supply activities; (2) Group of indicators to analyze the efficiency of production and business activities; (3) Group of indicators to analyze the efficiency of consumption activities; (4) Group of indicators to analyze the efficiency of overall operations.

+ Testing in groups (1):

After performing group tests (1), The cronbach's Alpha coefficient of the scale in the group of indicators to analyze the efficiency of input supply activities is  $0.895 > 0.6$ , ensuring reliability. However, indicators with the correlation coefficient of total variables  $< 0.3$  are indicators such as CTDV02 and CTDV12 with coefficient of 0.044 and 0.086 respectively, which will be eliminated. The author who performs the reliability test of the 2nd measurement scale has a Cronbach's Alpha coefficient of 0.943 which shows a very good measurement scale, all scales satisfy the condition of the total correlation coefficient  $> 0.3$ . Thus, the results of reliability testing of scales in group (1) show that scales have an internally consistent group's reliability (*Table 3*).

**Table 3: Results of testing the reliability of the scale of the indicators' group (1) - 2<sup>nd</sup>**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.943	10

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTDV01	32.02	76.541	.752	.938
CTDV03	31.99	76.751	.749	.938
CTDV04	31.91	76.178	.765	.937
CTDV05	31.73	77.096	.729	.939
CTDV06	31.92	74.720	.808	.935
CTDV07	31.87	76.817	.796	.936
CTDV08	31.86	75.396	.829	.934
CTDV09	32.11	78.051	.590	.946
CTDV10	31.84	76.038	.806	.935
CTDV11	31.89	74.076	.846	.933

+ Testing in groups (2):

The results in the first test showed that in this group Cronbach's Alpha = 0.917 showed good measurement scale. In Table 4, the scales in group (2) are closely correlated.

**Table 4: Results of testing the reliability of the scale of the indicators' group (2) – 1<sup>st</sup>**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.917	6

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTSX13	17.27	28.441	.713	.909
CTSX14	16.93	27.765	.813	.895
CTSX15	16.93	29.000	.784	.900
CTSX16	17.41	28.584	.664	.916
CTSX17	17.12	27.190	.819	.894
CTSX18	17.23	27.028	.806	.895

+ Testing in groups (3):

Group (3) includes 05 criteria equivalent to 05 scales for analyzing consumption efficiency. The results show that Cronbach's Alpha coefficient is 0.887, indicating the measurement scale is good. Correlation coefficients of all scales are  $> 0.3$  and Cronbach's Alpha if Item Deleted Coefficient of all scales  $<$  Cronbach's Alpha coefficient. This proves that group (3) has converged, scales are reliable.

**Table 5: Results of testing the reliability of the scale of the indicators' group (3) – 1<sup>st</sup> Reliability Statistics**

Cronbach's Alpha	N of Items
.887	5

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTDR19	12.40	7.286	.758	.858
CTDR20	12.35	6.892	.737	.861
CTDR21	12.33	7.050	.684	.874
CTDR22	12.30	7.168	.659	.879
CTDR23	12.33	6.759	.812	.843

+ Testing in groups (4):

Group (4) includes 15 indicators equivalent to 15 scales in the analysis of overall efficiency. After testing in group (4), the cronbach's Alpha coefficient of the scale in the group of indicators to analyze the efficiency of overall operations is  $0.920 > 0.6$ , which is highly reliable. To improve reliability and ensure maximum correlation between the analytical variables, the author removed the scale of CTKQ36 due to the total correlation coefficient of  $0,013 < 0.3$ . After that, the author checked the 2nd Cronbach's Alpha coefficient for Group 4 and found that the Cronbach's Alpha coefficient increased to 0.947 (Table 6), and the coefficients were satisfactory for factor analysis.

**Table 6: Results of testing the reliability of the scale of the indicators' group (4) - 2<sup>nd</sup>**

### Reliability Statistics

Cronbach's Alpha	N of Items
.947	14

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTKQ24	43.07	71.365	.767	.942
CTKQ25	43.26	73.102	.686	.944
CTKQ26	43.20	73.939	.645	.945
CTKQ27	42.82	72.714	.668	.945
CTKQ28	43.03	71.521	.759	.943
CTKQ29	43.10	71.790	.748	.943
CTKQ30	43.13	71.890	.771	.942
CTKQ31	43.06	71.601	.807	.941
CTKQ32	43.10	73.097	.719	.944
CTKQ33	43.09	72.435	.732	.943
CTKQ34	43.08	71.988	.746	.943
CTKQ35	43.09	73.036	.727	.943
CTKQ37	43.04	71.930	.721	.944
CTKQ38	43.09	72.470	.701	.944

### \* Exploratory factors analysis (EFA)

After testing Cronbach's Alpha, the author removes 4 unsatisfactory scales. The set of scales included in the exploratory factor analysis consists of 35 scales. The results of the first EFA removed the CTDV09 scale because of the load factor at the same time in both groups. After the second EFA, all factors have a load factor greater than 0.5 and converge to the first four factor groups (Table 7).

**Table 7: Results of the EFA - 2<sup>nd</sup>**

### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
	Approx. Chi-Square	5068.137
Bartlett's Test of Sphericity	Df	561
	Sig.	.000

### Rotated Component Matrix<sup>a</sup>

	Component			
	1	2	3	4
CTKQ31	.814			
CTKQ24	.810			
CTKQ28	.788			
CTKQ30	.782			
CTKQ29	.777			
CTKQ34	.765			
CTKQ33	.756			
CTKQ35	.749			
CTKQ37	.748			
CTKQ32	.725			
CTKQ38	.722			
CTKQ25	.700			
CTKQ27	.700			
CTKQ26	.685			
CTDV11		.869		
CTDV08		.862		
CTDV10		.841		
CTDV06		.832		
CTDV07		.830		
CTDV01		.800		
CTDV03		.792		
CTDV04		.779		
CTDV05		.750		
CTSX18			.877	
CTSX17			.864	
CTSX14			.863	
CTSX15			.809	
CTSX13			.786	
CTSX16			.750	
CTDR23				.878
CTDR19				.838
CTDR20				.827
CTDR21				.781
CTDR22				.751

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

*(Source: Author's analysis)*

**\* ANOVA analysis of differences between enterprise's groups**

In the qualitative research process, the author found a difference between manufacturing enterprises and commercial enterprises on the interest in 4 groups of analytical indicators. Therefore, after analyzing the factors, the researcher continues to analyze the differences between enterprises of different sizes.

The analysis results in Table 8 show that, in indicators' group 1, indicators' group 2, and indicators' group 3 there are no difference. For the indicators' group 4, it has not been concluded because the variance is not uniform.

**Table 8: Results of analysis of differences in indicators in 4 groups between large scale enterprises and Small and medium enterprises**

**Test of Homogeneity of Variances**

	Levene Statistic	df1	df2	Sig.
CTDV	1.928	1	204	.166
CTSX	1.442	1	204	.231
CTDR	.440	1	204	.508
CTKQ	5.110	1	204	.025

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
CTDV	Between Groups	.230	1	.230	.238	.626
	Within Groups	197.306	204	.967		
	Total	197.536	205			
CTSX	Between Groups	3.974	1	3.974	3.654	.057
	Within Groups	221.866	204	1.088		
	Total	225.840	205			
CTDR	Between Groups	1.398	1	1.398	3.308	.070
	Within Groups	86.218	204	.423		
	Total	87.616	205			
CTKQ	Between Groups	.027	1	.027	.064	.800
	Within Groups	87.377	204	.428		
	Total	87.405	205			

Besides considering the difference in type of business production, the author continue to analyze whether there are differences in the indicators between

enterprises in large scale and enterprises in small and medium scale or not. Testing has shown that there is no difference between these two groups of enterprises in terms of usage indicator.

#### **4. Discussion and Conclusion**

On the basis of understanding the nature of operational efficiency in enterprises is a process of causal connection, the author has developed a system of 33 indicators of business performance analysis of Vietnam's paper enterprises including 4 groups: Group of indicators to analyze the efficiency of input supply activities; Group of indicators to analyze the efficiency of production and business activities; Group of indicators to analyze the efficiency of consumption activities and indicators' group analyzing the efficiency of overall operations.

From the research results, the author proposes some recommendations for Vietnam's Paper Enterprises as follows:

Firstly, it is recommended to use indicators to analyze the performance and needed resources for analysis. Analytical department should closely organize from the stage of collecting data to serve analysis. The source of the data can be based on financial statements and management reports, depending on the nature of the indicator. Determining the exact source of data for analysis right from the organization of accounting activities in the enterprise is necessary, this will help save costs by gathering information at the same time for related reporting and analyzing objectives.

Secondly, need to analyze the business performance efficiency of enterprises annually. Paper enterprises should apply a system of indicators to analyze the business performance that has been surveyed and select from businesses in the same field. Enterprises are aware of the significance of analytical performance, but maintain regular analysis requires an understanding of the management department and the department participated in the analysis. From this study, the author recommends that enterprises should organize an analysis of each department and the overall analysis. Information data after analysis needs to be evaluated, compared between periods, find out the causes of the departments which operating ineffectively. There should be clear reward and punishment policies for departments to promote the effectiveness of each department and create general efficiency.

Thirdly perform comparisons of the level of efficiency with other enterprises to determine the efficiency of own enterprises. Information transparency is one of the prerequisites for conducting business performance analysis. The higher the quality of the information used in the analysis, the more significant the indicators are in

controlling risks, will help attract investors, improve the ability of enterprises to access capital.

Fourthly, enhancing social responsibility of enterprises through practical action as green production, saving and contributing to environmental improvement costs, contribute positively to the state budget, guiding consumers to classify waste paper correctly, training professional staffs. These activities are not only effective but also enhance the public image of enterprise.

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# THE EFFECTS OF CUSTOMER EQUITY ON CUSTOMER LOYALTY FOR CHAIN RESTAURANTS: CASE STUDY OF KFC VIETNAM

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## **Abstract**

*This study aims to examine the relationship between customer equity and customer loyalty in fast-food chain restaurant in Vietnam. A survey of 352 customers of KFC restaurant was conducted in March 2019 to collect data. Structural Equation Model (SEM) is used to test the hypothesis on the relationship between three key determinants of customer equity - brand equity, value equity, relationship equity and customer loyalty. Research results confirm that brand equity, value equity, relationship equity have a positive impact on customer loyalty. The managerial implications are also discussed in the paper.*

**Keywords:** *Customer equity, Brand equity, value equity, relationship equity, customer loyalty*

## **1. Introduction**

Marketing is applied not only to generate sales and profits in the short term but also to create customer loyalty in the long term. The problem for researchers as well as businesses is how to measure marketing performance, how to quantify and measure the long-term impact of marketing. One of the ways that researchers use to measure the impact of marketing is to measure customer equity.

Customer equity is defined as the total long-term value that customers can bring to businesses. From the financial approach, customer equity is synonymous with the lifetime value of customers and are determined by the value that customers bring to the enterprise during the time of being a customer of that enterprise. From the marketing approach, customer equity is understood as attitudes and perceptions of customers to businesses. Accordingly, customer equity is determined based on the customers' assessment of the components that constitute the customer equity: value equity, brand equity and relationship equity. Through customer surveys, we can possibly measure customer evaluations of these three elements.

In the chain restaurant industry, it is not too difficult for marketing efforts to attract new customers but the life or death problem lines in the ability of the business to maintain customer loyalty, then it is necessary to understand the effects of current marketing efforts in generating customer equity on the customer loyalty of the chain restaurant. This study was conducted to explore the impact of customer equity components (value equity, brand equity and relationship equity) on customer loyalty of chain fast-food restaurants. KFC - one of the most famous fast-food restaurant chain in Vietnam, is chosen as the case study in this research.

### ***Value Equity***

Value equity is defined as the customer's objective assessment of the utility of a brand based on perceptions of what is given up by the customer for what is received (Rust et al, 2000). Customers' evaluations of a product/service are highly influenced by perceptions of value. Value equity is the keystone of customer equity, since if a company's product value does not meet the customers' assessment, the firm's brand strategy and relationship marketing strategy will be insufficient to enhance customer equity.

In the restaurant industry, value equity is defined as the customer's objective assesment of the utility of a brand based on perceptions of what is given up for location when they select restaurants. Location has been used to measure a restaurant's value in the sense that a convenient location can help to save time for patrons (Auty, 1992; Heung, 2002; Law et al., 2008). Lastly, the aesthetic factor is important in value equity (Holbrook, 1999). In the restaurant industry, environment is an important attribute that influences customers' aesthetic evaluation of the restaurant (Bitner, 1992; Foster, 1997; Kivela, 1997; Soriano, 2002). Bitner (1992) mentioned that because a service provider communicates with customers in the restaurant environment, that environment greatly influences the perceived value in a restaurant. In this sense, a nice environment can enhance perceived value of

customers. Moreover, the price, food and service quality are very important factors influencing to customer repurchase intention.

### ***Brand Equity***

Brand equity is defined as the customer's subjective and intangible assessment of the brand above and beyond its objectively perceived value (Rust, Zeithaml, & Lemon, 2000). Brand equity influences customer equity formation in three ways: it provides a stimulus to consumers and helps to attract new consumers to the company, it provides a reminder to customers concerning the company's products/services in order to encourage repurchases/revisits, and it provides an emotional bridge between the customer and the brand (Rust et al., 2000).

Brand equity creates specific brand associations in consumers' minds and indicates a general market signal about the credibility of a particular brand (Erdem & Swait, 1998). Consequently, it helps to create a customer's desire to continue a relationship with a seller (Moorman et al., 1992; Bolton et al., 2002; Martenson, 2007; Tepeci, 1999). Martenson (2007) has stated that a brand consists of perceptions about a specific company, and influences consumer behavior regarding the maintenance of a relationship with that company. Tepeci (1999) has stated that branding is a prerequisite of relationship building.

Aaker (1991, 1996) proposed four dimensions of brand equity: (1) brand loyalty, (2) brand awareness, (3) perceived quality, and (4) brand image. These four dimensions are widely accepted and empirically tested in later studies (e.g. Keller, 1993; Yoo and Donthu, 2001). Brand equity motivates patrons in their restaurant selection and decision-making, consequently it has been considered as an important capital in the restaurant industry (Kim and Kim, 2004). In spite of the importance of branding, the restaurant industry is far behind other industries in terms of brand research. Therefore, attention should be paid to adapting existing dimensions of measuring brand equity in restaurant marketing research. Based on the definition of brand equity, dimensions should be adapted to enable customers' effective assessment of a restaurant. Among Aaker (1991, 1996)'s four dimensions, perceived quality of restaurant should be grouped with value equity rather than brand equity because perceived quality of restaurant is an objective assessment (Lemon et al., 2001; Rust et al., 2004). Another dimension – brand loyalty – should be grouped with relationship equity rather than brand equity because loyalty is defined as “a deeply held commitment to buy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior” (Oliver, 1999, p. 34). This is relevant to the concept of relationship equity (Lemon et al., 2001).

Two dimensions remain and are the ones used in this study: brand awareness and brand image. Items to use in measuring two subconstructs are derived from the food-service literature

### ***Relationship Equity***

Relationship equity is defined as a customer's tendency to continue purchasing a particular brand above and beyond the objective and subjective assessment of the brand (Lemon et al., 2001). The concept of relationship equity includes the belief that significant brand and value equity may not be sufficient to maintain a customer. In other words, even though customers evaluated a product objectively and subjectively, they might not rebuy it in the future for several reasons, including changes in individual situations and the effects of marketing efforts from other companies (Oliver, 1999). With the evolution of customer-oriented marketing, relationship equity has been in the spotlight by many researchers (Berry, 1995; Liljander and Strandvik, 1995; Storbacka et al., 1994), and relationship equity's interactions with other constructs have been examined.

According to Rust et al. (2001), there are four key measures of relationship equity: loyalty programs, special recognition and treatment programs, community-building programs, and knowledge-building programs (Lemon, Rust, and Zeithaml 2001, Rust, Zeithaml, and Lemon 2000, 2004, Leone, Rao, Keller, Luo, McAlister, Srivastava 2006). Moreover, Crosby et al. in their research, they proposed other four drivers: (1) trust, (2) commitment, (3) Affective conflict; (4) satisfaction ((Crosby, Evans, & Cowles, 1990; Dorsche, Swanson, & Kelley, 1998; Dwyer, Schurr, & Oh, 1987; Hennig-Thurau & Klee, 1997; Roberts, Varki, & Brodie, 2003). In this paper, we've used combined these approaches.

In summary, there are three key drivers of customer equity that operate both independently and all together. By improving these three elements, businesses can enhance the overall customer equity.

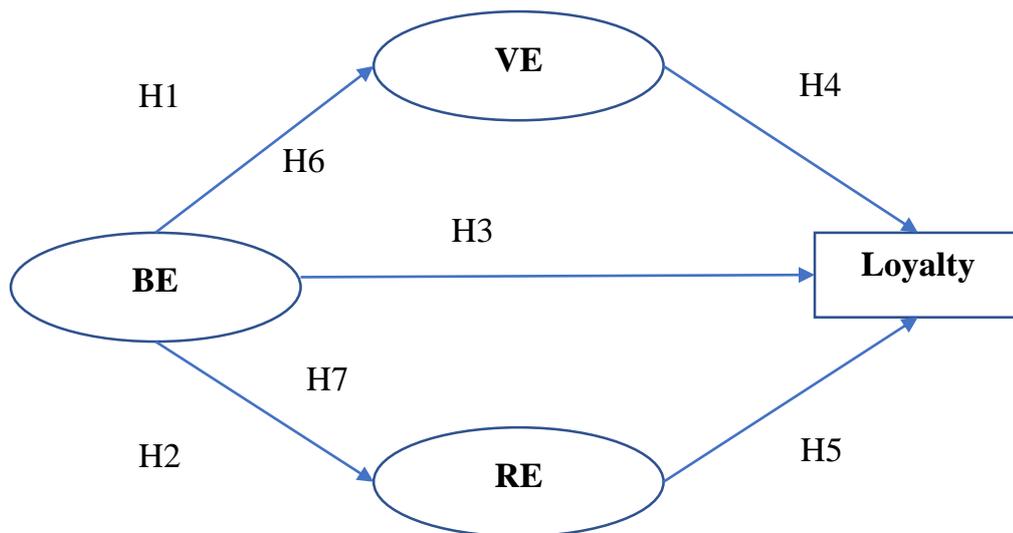
### ***Customer loyalty***

Loyalty can be defined as a deep commitment to repurchase or repeat purchase behavior for a consistently preferred product/service in the future, which causes repeat purchase of the same brand or set of brands despite situational influences and marketing efforts which have the potential to bring about changes in behavior (Oliver, 1999). The definition in Oliver (1999) is based on attitude-behavior consistency and relative attitude toward an organization (Dick & Basu, 1994). Oliver (1999) identifies four phases in the construction of loyalty: cognitive loyalty, affective

loyalty, intentional loyalty and behavioral loyalty. The first occurs when the ties between the brand and the consumer are based on rational criteria such as price or quality. Affective loyalty is based on cognitive loyalty, satisfaction and the establishment of affective links between the two parties. Intentional loyalty is a relative evaluation based on affective loyalty and a predisposition to purchase the brand. Behavioral loyalty is real behavior and is observed in repeated purchases over time and word-of-mouth recommendations (components of CLV).

Loyalty has been widely regarded as being of utmost importance in marketing literature (e.g. Oliver, 1999). Loyal customers tend to pay less attention to competing brands and advertising, are less price sensitive and create positive word-of-mouth (WOM) (Desai and Mahajan, 1998). Oliver (1999) defined loyalty as a deeply held commitment to re-patronize a preferred product/service consistently in the future, thereby causing repeat purchase despite situational influences and marketing efforts having potentials to induce switching. Loyalty in a business context is less likely to be derived from routine or habit, as in some low involvement products/services. Rather references arisen out of positive word-of-mouth play a very important role for the firm (Kumar et.al.,2003). Thus, we consider behavioral facets such as actual word-of-mouth and purchase behavioral intention as items of our loyalty construct.

To study the impact of brand equity, value equity, relationship equity on customer loyalty, the following research model is proposed to conduct the survey.



**Figure 1: Proposed Research Model**

### ***Research Hypothesis***

H1: Brand equity positively influences Value equity for a chain fastfood restaurant brand

H2: Brand equity positively influences relationship equity for a chain fastfood restaurant brand

H3: Brand equity positively influences customer loyalty for a chain fastfood restaurant brand

H4: Value equity positively influences customer loyalty for a chain fastfood restaurant brand

H5: Relationship equity positively influences customer loyalty for a chain fastfood restaurant brand

H6: Value equity positively mediate the relationship between brand equity and customer loyalty

H7: Value equity positively mediate the relationship between brand equity and customer loyalty

### **2. Research Method**

We use both qualitative and quantitative research method in this study. Qualitative research was conducted with the aim of testing and indentifying items of model factors of brand equity, value equity, relationship equity and customer loyalty. The data collection method used is in-depth interviews with 5 groups (from 3-5 customers of KFC). On the basis of the sub factors indicated from the theoretical review results, the qualitative research process aimed to identify items from which to design quantitative surveys. There is one sub-factor of "Affective conflict" within the Relationship equity element that is totally not mentioned by the interviewee, hence no item in sub-factor Affective conflict has been developed and included in the quantitative survey.

Preliminary quantitative research was carried out through survey with self-report questionnaire in the sample of 50 KFC customers. Collected data were processed by SPSS software 22, exploratory factor analysis (EFA) and Cronbach's Alpha reliability coefficients used in data analysis. The data processing results have eliminated inappropriate variables and help us complete the questionnaire for official research.

Official quantitative research was conducted in March 2019 with a sample size of 400 KFC restaurant survey customers. After removing invalid responses, the remaining valid responses are 352. Collected data were processed by SPSS software version 22 and AMOS software.

### 3. Results

#### EFA results

The results of EFA and Cronbach's Alpha analysis show that the aggregate coefficient of all scales is greater than 0.6 and the the total covariance deviation is greater than 50%. and qualified. Accordingly, the brand equity variable (BREQ) are extracted into the following sub-factors:

**Table 1: EFA results for factor "Brand equity"**

No	Sub factor	Items	Factor loading
1	Top of mind (TOM)	I think of KFC first when mentioning fast food restaurant	0.757
		When choosing fast food restaurant, KFC is one of the restaurants I think of	0.815
		I often support my friend when they suggest KFC restaurants	0.753
2	Perceived Differences (DEFE)	When I think about the brand, some of the features of the restaurant quickly appeared in my mind	0.765
		I can recognize this brand among other fast food chains	0.814
		Restaurants in KFC chain have distinguished style	0.659
3	Associated image (IML)	Restaurants in KFC chain always have stable quality	0.604
		When think of FKC, I think of a crowded and fun place	0.794
		When mentioning KFC, I envisioned a modern, youthful, foreign-style place	0.712
		KFC restaurant chain has a very specific taste of fried chicken that other restaurants do not have	0.721
4	Image of benefit (IMI)	When I want to find a clean place, I often think of restaurants like KFC	0.649
		When I want to have a good time with friends and relatives, KFC is one of the first choices I think of.	0.763
		When I want to find a fancy space to relax with friends, I often think of KFC	0.897

Factor "Value equity" (VEEQ) composed of 4 sub factors as follows:

**Table 2: EFA results of factor “Value equity”**

No	Sub factor	Items	Factor loading
1	Food quality (FOQ)	KFC food presentation is attractive	0.646
		Raw materials for making dishes of KFC are fresh	0.792
		KFC's food ensures nutrition	0.585
		The temperature of the dish is appropriate	0.635
2	Drink quality (DRQ)	Drinks look attractive	0.521
		Beverages origin is guaranteed	0.799
		Drinks are fit my taste (delicious)	0.735
3	Service staff quality (SSQ)	Staff is friendly, well behave	0.797
		Staff are always ready to help	0.866
		Staffs always serve customers' requests promptly and thoughtfully	0.834
		Knowledgeable and enthusiastic staffs advise customers in ordering	0.731
		KFC staffs brings a sense of peace of mind and trust	0.560
4	Service process quality (SPR)	Waiting time to be served short	0.713
		Reasonable service process	0.669
5	Convenience (CONVI)	KFC stores are conveniently located in terms of traffic	0.634
		KFC stores have enough parking space	0.736
		I can contact to book a table easily	0.801
		KFC delivery service is good	0.737
		KFC stores have a variety of payment methods	0.577
6	Price (PRICE)	The quantity of foods match the price	0.772
		The quantity of drinks match the price	0.761
		KFC's price is reasonable compared to restaurant quality	0.825

No	Sub factor	Items	Factor loading
		The average spending for a meal at KFC is reasonable	0.873
		KFC's price is reasonable compared to other fast food chains	0.728
7	Service environment cleanness (CLEAN)	Food containers (bowls, chopsticks, cups ...) of KFC are always clean	0.828
		KFC tables and chairs are always clean	0.699
		The restaurant floor is always clean	0.601
8	Service environment comfortability (COMFO)	The atmosphere of KFC comforts me	0.580
		The design of KFC tables and chairs are comfortable	0.823
		KFC's premises are designed to create comfort for the customers	0.644
		Interior decoration brings comfort	0.751

Factor “Relationship equity” (REEQ) composed of 3 sub factors as follows:

**Table 3: Table 2: EFA results of factor “Relationship equity”**

No	Sub factor	Items	Factor loading
1	Trustworthy (TRUST)	I believe that KFC always considers and solves arising problems honestly	0.649
		I believe that KFC always shows their understanding of customers and offers appropriate programs to customers	0.789
		I believe that KFC will treat customers fairly	0.865
2	Satisfaction (SATIS)	I'm happy with KFC performance	0.688
		I'm delighted with KFC performance	0.829
		I'm content with KFC performance	0.745
3	Affective commitment (AFFEC)	I feel emotionally attached to KFC	0.620
		I like being associated with KFC	0.862
		I genuinely enjoy my relationship with KFC	0.829

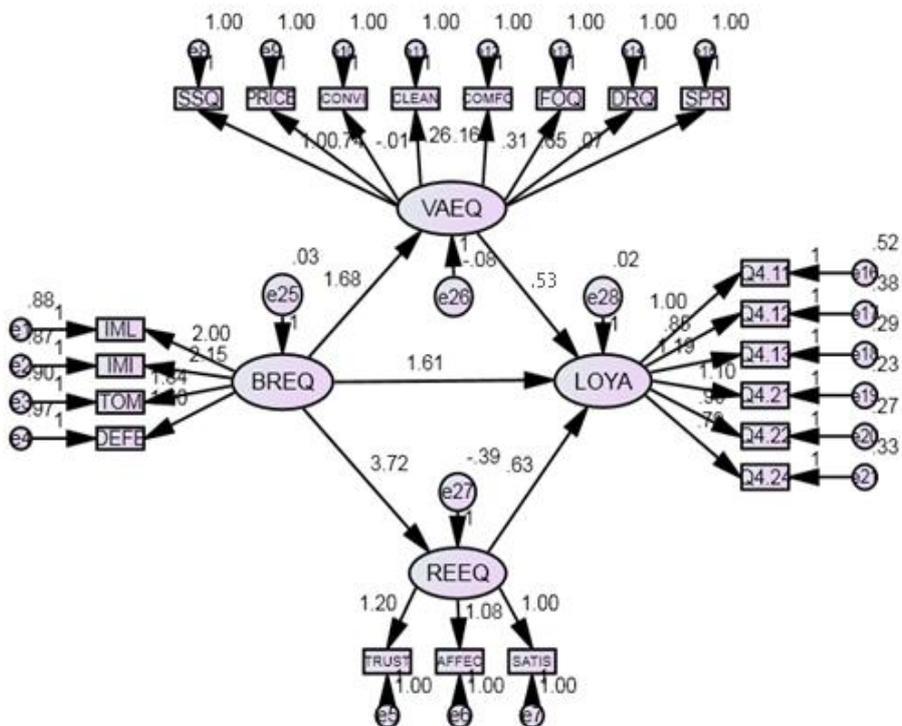
Items describing factor “customer loyalty” are indentified as:

**Table 4: Table 2: EFA results of factor “Customer loyalty”**

No	Sub factor	Items	Factor loading
1	Customer loyalty (LOYA)	When I intend to go to a restaurant, KFC is the first brand I think of (Q4.11)	0.655
		I will definitely continue to go to KFC restaurant chain (Q4.12)	0.69
		I will suggest my friend to choose KFC restaurant chain when eating out (Q4.13)	0.832
		I will say good things about KFC restaurant chains with others (Q4.21)	0.821
		I will give positive information about KFC restaurant chain on social networks	0.765
		I will leave good comments on the KFC restaurant chain online (websites, online applications ...) (Q4.24)	0.672

**Structural model**

The result of data process by AMOS showed the estimated structural model as bellow:



**Figure 2: Structural model**

Note: BREQ – Brand equity, VAEQ – Value equity, REEQ – Relationship equity, LOYA – Customer loyalty

Fit indices provided by AMOS indicated that the model had an acceptable fit. Chi-Square was 653.942 and Chi-Square/DF = 1.353 and CFI = .922, IFI = .827., TLI = .883 and a root mean square error of approximation (RMSEA) = .085 Values of CFI, IFI, and TLI ranged from 0 to 1 with a value close to 1.00 indicating good fit (Byrne, 1998). RMSEA should be less than .10; however, ideally, it should be between .04 and .08 (Turner and Reisinger, 2001). In this structural model, almost of fit indices are approached with good value and all the hypotheses are supported. The results show in the table 5 as bellow:

**Table 5: Hypotheses testifying results**

Hypotheses	Linkage	Estimate	P value	Result
H1	BEEQ → VAEQ	1.683	***	Supported
H2	BEEQ → REEQ	3.716	***	Supported
H3	BEEQ → LOYA	1.608	0.006	Supported
H4	VAEQ → LOYA	0.526	0.026	Supported
H5	REEQ → LOYA	0.632	***	Supported
H6	BEEQ → VAEQ → LOYA	0.885		Supported
H7	BEEQ → REEQ → LOYA	2.348		Supported

#### 4. Discussion and Conclusion

The purpose of this study is to explore the impact of brand equity, value equity and relationship equity on customer loyalty in chain restaurant industry. The results of research on fast-food restaurant chains support the hypothesis that brand equity, value equity and relationship equity have a positive impact on customer loyalty. Brand equity positively affect value equity and relationship equity. This result indicates that customers' evaluation on restaurant brands positively affects customer perception of the value they receive from restaurant chains (value equity), customer commitment with the restaurant chain (relationship equity) and these factors all positively affect customer loyalty. This suggests that the marketing activities of the chain restaurants should pay special attention to branding along with creating a good perception of customers on what customers receive (customer experience) and build relationships with customers. Marketing efforts for these activities will contribute positively to maintain customer loyalty - the core factor that dominates the success of the chain restaurants.

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# E-COMMERCE IN VIETNAM: OPPORTUNITIES AND CHALLENGES

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## **Abstract**

*In recent years, e-commerce in Vietnam has been growing rapidly and is expected to reach US \$ 33 billion by 2025. Vietnam is a potential e-commerce market with a population of more than 90 million people and people's income is increasing. Therefore, it attracted many domestic and foreign enterprises to invest. Thus it creates many opportunities for businesses, consumers and society. But at the same time, it poses many challenges for both them. The paper presents an analysis of the status of Vietnam's e-commerce according to the approach of businesses, consumers and society in order to point out opportunities and challenges, and proposes some suggestions for more benefits for businesses, consumers and society.*

**Key words:** *E-Commerce, Opportunities, Challenges, Supply Chain.*

## **1. Introduction**

In recent years, thanks to the strong development of the Internet, online shopping becomes more and more popular and growing in the world (Ramachandran and partners, 2011; Wu and partners, 2011). Many international retail corporations and Vietnamese enterprises have entered the market to provide more choices for consumers. At the same time, it created fierce competition challenges for businesses. According to the EBI Report (2019), Vietnam's e-commerce has been growing rapidly with high speed, the growth rate of Vietnam's e-commerce in 2018 was over 30% (market size 7.8 billion USD) and is still increasing in the following years.

According to the World Trade Organization (WTO), "E-commerce includes the production, advertising, sales and distribution of products traded and paid on the Internet, but delivered tangibly. All products delivered as well as information are digitalized through the Internet". Subjects participating in e-commerce can be divided

into: Government (G), Business (B) and Customer (C). At that time, combining a couple of these 3 objects will have 9 forms of participating in smaller e-commerce: B2C, B2B, B2G, G2B, G2G, G2C, C2G, C2B and C2C (Zorayda Ruth Andam, 2003). One of the most popular types of e-commerce in the world is B2C (Business-to-Consumer), which is a form of business between businesses and customers through e-commerce.

One of the characteristics of e-commerce is that the seller and the buyer will make virtual transactions with each other through intermediaries or e-commerce sites. Therefore, e-commerce will erase the space and time gap between sellers and buyers, benefiting both parties while contributing to commercial development. But beside that, e-commerce also creates information for consumers about products and services. Especially consumers do not have the opportunity to experience service products before transaction. This is a problem for consumers and e-commerce.

Moreover, according to EBI (2019), there are still many obstacles for e-commerce to make a breakthrough in the coming period. The biggest obstacles include a low consumer confidence in online buying and selling, logistics services, final delivery, completing orders are limited, especially the digital gap between localities is still very high.

## **2. Research method**

Researching is based on the secondary data such as books, newspapers and statistical records originated from reports of domestic and international consulting agents. Based on these data, the group of writers have generalized, remarked and analyzed in order to find out opportunities and challenge, approaching from perspective of enterprise (organizer), customer and sociality in Vn. Thus, a few proposals are produced with the aim of increasing profits for enterprises, customers and communities.

## **3. Working reality of Viet Nam ecommerce**

### ***3.1. The volume of growing of VN ecommerce***

According to VN ecommerce association (2019), ecommerce of VN remains developing rapidly with a high speed, VN ecommerce increased above 30% in 2018, (market size stay at \$7,8 million) and it certainly grows up in the next years.

Surveying 1000 VN ecommerce enterprises of Iprice has shown that VN is taking part in ecommerce with a high speed and get almost trend of the area.

The amount of online customers on mobile phone in VN raised significantly, gain 26% in 2017. Besides, Vn keep the first stand in South East in ratio of transfer or the volume ò number of visitors and the decision to delivery. In specific, the

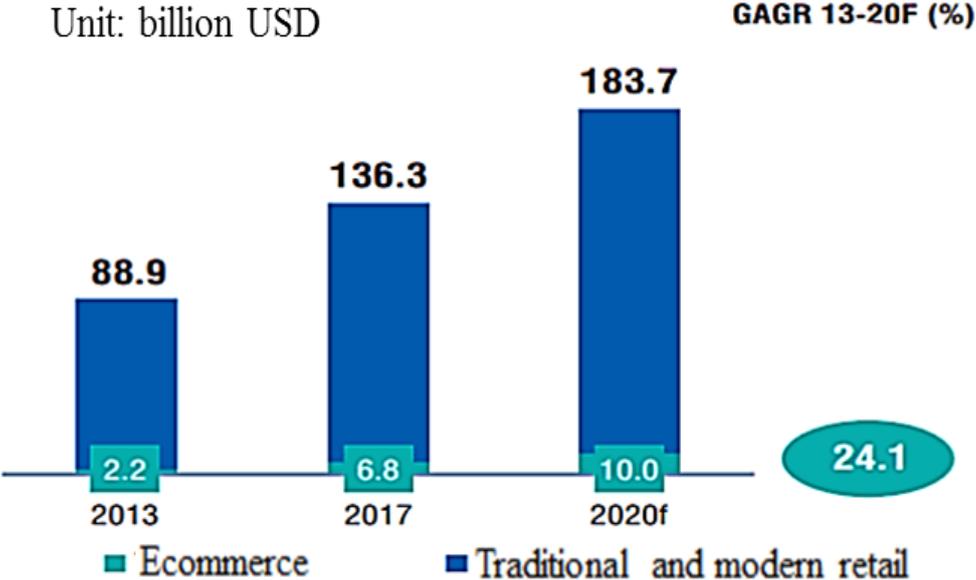
ecommerce enterprises in VN show the ratio of delivering at 65%, remain the highest one in the South East.

According to the survey of EBI (2019), in recent years, with coming up of a number of ecommerce websites such as lazada, tiki, shoppee... shopping online become not strange for VN customer. Online shopping market presents more lively when more and more the young customer take part in shopping on social network.

Apart from that, e-conomy Sea report of Google and Teamasek, VN ecommerce market size in 2018 gets \$9 million. The report also predicted that compound average growth rate of the period 2015-2018 would reach at 25% and the market gain \$33 million in 2015. Thus, VN ecommerce market size in 2025 will stay the third in Southeast Asia, followed by Indonesia (\$100 billion) and Thai Lan (\$43 billion).

Moreover, according to EBi (2019), the volume of Business to customer in the total business still gets lowly and it í expected in 2020 to gain 5,4% and compound average growth rate in the period of 2013-2020 will get 21,4%.

**Figure 3.1 The value of ecommerce compared with the total retail trade sector**



*Source: Vietnam E-commerce Association, 2019*

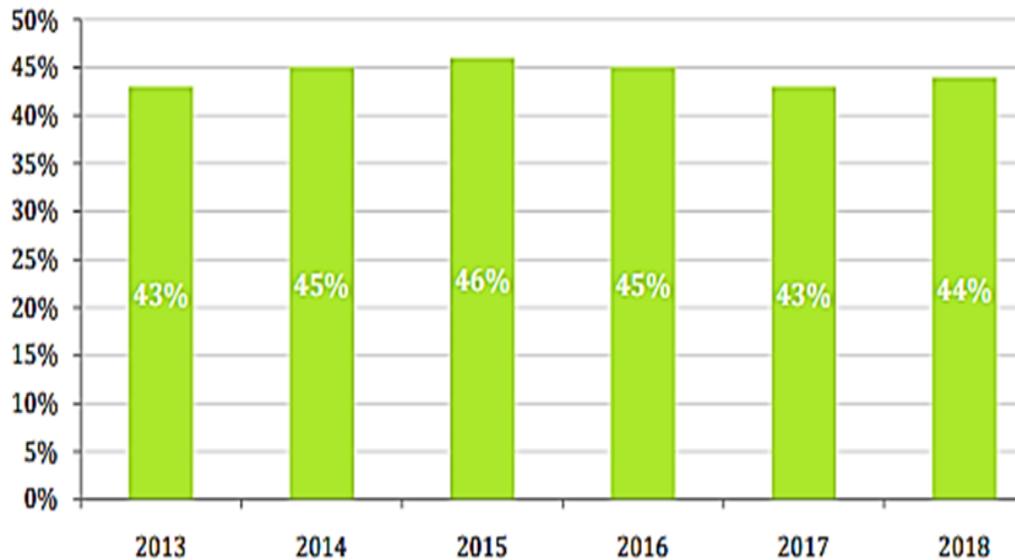
The developing speed of ecommerce in VN is shown specified as following:

- Ecommerce throughout enterprise website.

The survey of EBI in 2018 showed that, the average of 6 years, the volume of enterprises having website nearly stay unchanged., nevertheless, due to the number of ones raises, a number of ones owing website also grow up. Moreover, the agents says that they pay more attention of communicate with their customers through

website, in specific: 47% business says that they usually update information daily and 23% ones state that they do it weekly.

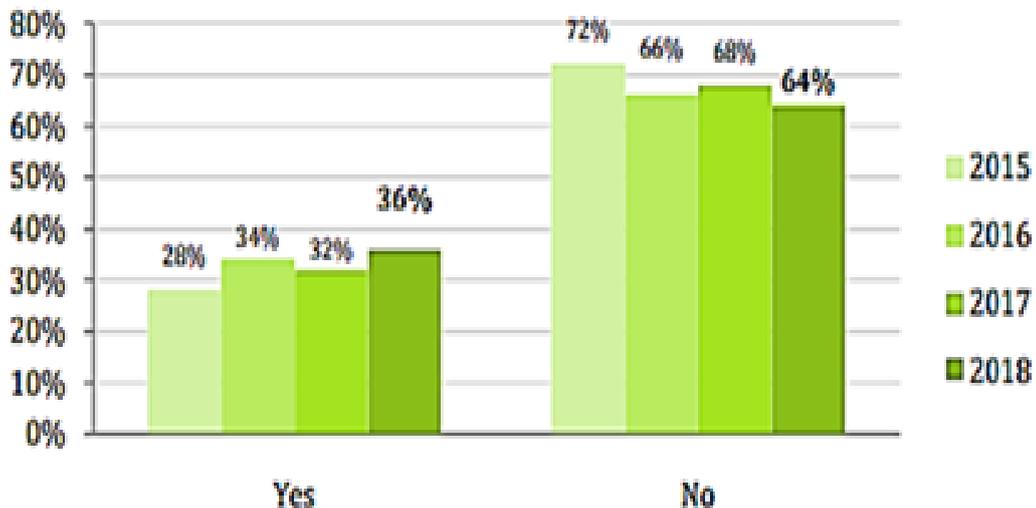
**Figure 3.2. Ecommerce through business website**



*Source: Vietnam E-commerce Association, 2019*

- Ecommerce through social network

**Figure 3.3. Ecommerce through social network**



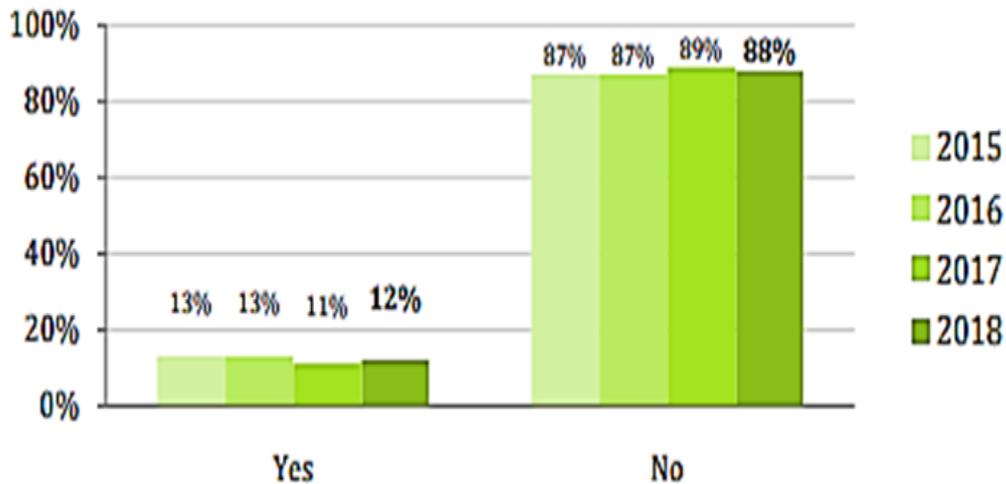
*Source: Vietnam E-commerce Association, 2019*

The survey of EBI represents that the trend that enterprises use social network in order to do e-commerce seems to raise in 4 years 2015-2018. It is caused from low cost profit and the ability of approaching customer privately. This form of business is usually used by super tiny organizations, small ones, family businesses or individuals.

- Taking part in ecommerce exchange

Although these years there is burst in ecommerce with the invest of huge group such as vingroup, Alibaba... but the ratio of organizations appear in these exchanges is not high. Therefore, it needs more time for results from ecommerce.

**Figure 3.4. Ecommerce through ecommerce exchange**

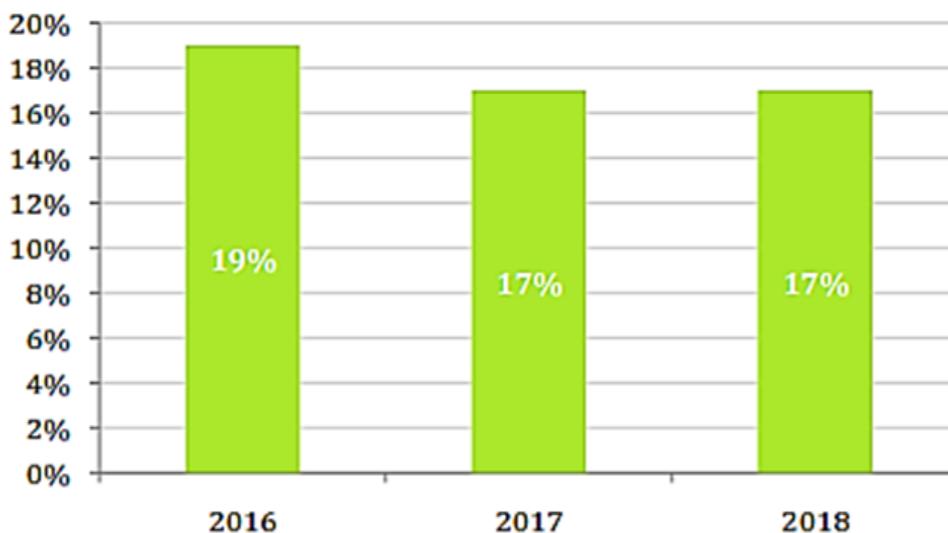


*Source: Vietnam E-commerce Association, 2019*

- Ecommerce through mobile phone floor

For developing ecommerce all over the world, the trend of using mobile phone remains to get invest significantly. Nevertheless, there is some from 17% to 19% organizes interesting ecommerce through website with cell phone version.

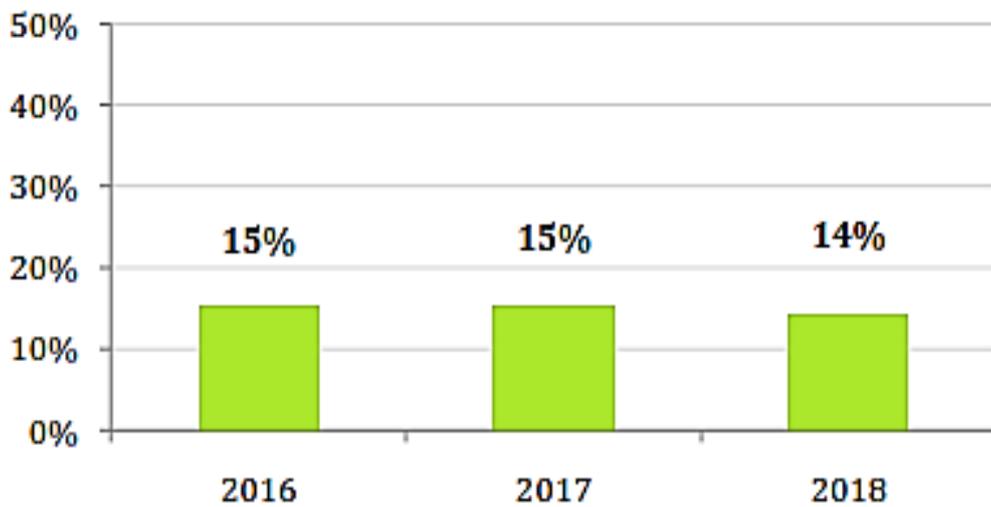
**Figure 3.5. E-commerce through website with cell phone version**



*Source: Vietnam E-commerce Association, 2019*

This rate is also low.

**Figure 3.6. Ecommerce through applications on cell phone**



*Source: Vietnam E- commerce Association, 2019*

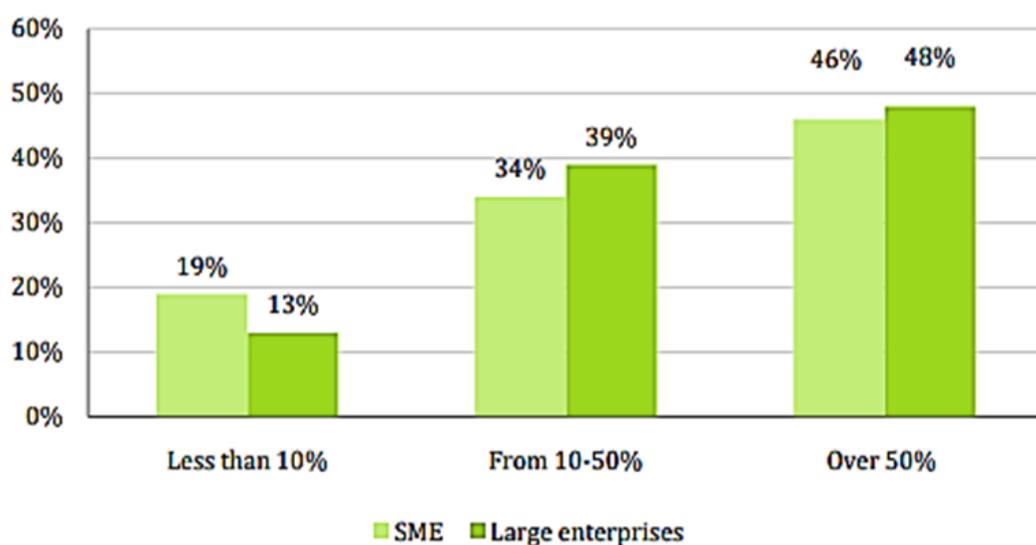
### **3.2. Infrastructure**

#### **3.2.1. Email- means**

Email appears as a means of pushing work of ecommerce effectively in time, cost and individualizing users.

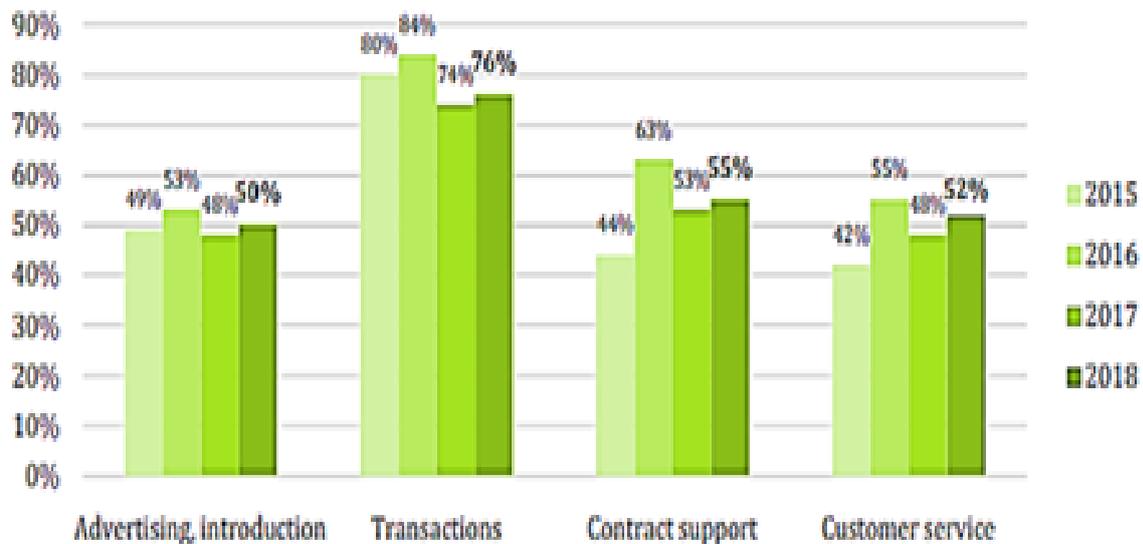
The survey of EBI showed that the bigger the organization is the more the employees use email in ecommerce.

**Figure 3.7. Ecommerce through email at business level**



*Source: Vietnam E- commerce Association, 2019*

**Figure 3.8 The purpose of ecommerce email**



*Source: Vietnam E-commerce Association, 2019*

EBI (2019), according to the purpose of ecommerce emails, delivery emails are use the most and customer care emails stay less popular. Besides, in order to take advantage effectively industry technology in ecommerce, the organizations also use different tools such as : viber, zalo...

### 3.2.2. Specialist at ecommerce

The man always stays the most important element in every body. In the other hand, due to the characters of ecommerce, the specialize group need to have both technology knowledge and understanding of business in order to get the application trends effectively. Therefore, the organizations always pay attention of training specialists of ecommerce.

According to the survey of EBI, based on the size of business, it can be said that the rate of specialized employees working in big enterprises is higher than it is in 2017 (increase from 42% to 45% in 2018). However, in the group small and medium business, it declines (from 29% in 2017 down to 26\$ in 2018). The main reason is that the staff in small and medium organizations must get much work at the same time. The survey also showed the difficulties of organizations in employing suitable staff, Specially, it is the skill at finding and using the ecommerce applications. This is the skill getting the most interest and also the hardest one to have (49% bodies taking part in surveying affirmed). Besides, the bodies also meet difficulty in:

### 3.2.3. shopping cost, equip and apply information technology and ecommerce

The survey of EBI shows that: from 2015 to 2018 almost enterprises invested into infrastructure of hard ware, next software and the third meet employers and training.

**Figure 3.9 Investing capital of organizer in technology**



Source: Vietnam E-commerce Association, 2019

### **3.3. Ecommerce delivery**

According to EBI ecommerce acting in VN represents mainly follow three forms: B2C, B2B, G2B.

B2C: according to EBI 2019, the main pattern of ecommerce delivery B2B in VN includes: through enterprises' website, social network (specially facebook), cell phone, email, ecommerce floor and mobile application. From this report, it is expected that the rate of ecommerce business in 2013-2020 only get from 2% to 5,1% among total value of retail trade sector.

B2B: B2B's turnover still play a huge role in economy in general and ecommerce individually. VN B@B commerce concentrate mainly in: using admin software, using electron sign, using electron contract; receiving order through online tools; order items through online tools, the rate of investing, building and operating website/ application of mobile of enterprises.

G2B: this act show delivery between government organizations and business ones. The main work:

Tax declaration procedure, register business, supply certificates...

## **4. Opportunities and challenges of e-commerce in Vietnam**

E-commerce has created many opportunities and challenges for businesses, consumers and society in Vietnam, especially during the period of developing economy in the current 4th industrial revolution.

## ***4.1. Opportunities of e-commerce in Vietnam***

### ***a. Organization***

- Expanding markets: Enterprises are able to expand markets easier and simpler than before thanks to e-commerce. With smaller investment costs than traditional trade, companies can expand their markets, search for and reach customers and partners both locally and internationally. Expanding the network of suppliers and customers will enable organizations or businesses to buy at a more affordable price and sell more products.

- Reducing costs: E-commerce with internet connection, especially with participation in global e-commerce chain, will make sharing information be quicker, simpler and easier, minimizing information costs. Moreover, receiving information about orders will help businesses plan production and business more effectively to optimize storage costs and excess production. In addition, it also helps to optimize the production and supply time of materials; create more effective management of customer and supplier relationships; reduce paper costs, printing costs, costs of sending traditional documents or management costs.

- Improving the distribution system in terms of both quality and quantity: Reducing inventory and latency in distribution to increase customer value through distribution channels. The product store system is replaced or supported by online stores. Moreover, the ability to reach customers through different methods becomes also more diverse and richer.

- Manufacturing on demand: Through e-commerce businesses can produce according to customer requirements or differentiate customers with appropriate production costs. At the same time, it increases the competitiveness of businesses.

- New business model: Through e-commerce, there can be new business models with new advantages and values for customers. Examples of this success are Amazon.com's model, group buying or online agricultural auction to B2B exchanges.

- Other benefits: Enhancement of brand of the enterprise; improvement of customer service quality; new business partners; simplification and standardization of transaction processes; increasing productivity, reducing paper costs; increasing potential of sharing, access to information and reducing transportation costs; many flexible methods in trading and business operations.

E-commerce offers many opportunities for businesses but also creates opportunities for consumers.

## ***b. Consumers***

- Customers have the opportunity to overcome the limits of space and time to participate in e-commerce transactions:

Due to the characteristics of e-commerce, virtual transactions should allow customers to buy anywhere, anytime in the shops all over the world, the thing that traditional commerce cannot do.

- Customers have more opportunities to choose products and services:

E-commerce allows buyers to have more options because of reaching more suppliers. With the number, the variety and diversity of countries of origin, prices, designs, sizes and quality vary.

- Customers have the opportunity to buy products or services at a more suitable price:

Since finding information about products and services via e-commerce is more convenient, easier and richer in a short time, customers can easily compare prices, quality, size, models of suppliers and thereby find the most suitable price.

- Customers have the opportunity to receive goods faster with digital goods: The characteristics of some products and services that can be digitized such as movies, music, books, software .... make delivery of goods easier via the internet. This is also an advantage of e-commerce compared to the traditional trade. It saves time and efforts for customers especially in terms of waiting for products.

- Customers have the opportunity to participate in the auction:

Through e-commerce, the online auction model was created to allow people in all different countries to participate in buying and selling on auction and at the same time finding and collecting wanted items everywhere in the world with low costs, the thing that traditional trade cannot do.

- E-commerce community:

According to EBI (2019) and Nielsen (2017), connected consumers or consumer communities form e-commerce social communities. This community allows all participants to collaborate, share information and experience effectively and quickly when participating in e-commerce transactions.

- Customers have the opportunity to meet all needs:

The application of advanced science (automation capabilities) into production and personalization of e-commerce has enabled businesses to accept different orders from every customer.

- Customers have the opportunity to get tax reduction:

In the first phase of e-commerce, many countries encouraged e-commerce transactions by tax exemption or tax reduction for online transactions. Therefore, with the money in the hands, customers have more opportunities to shop.

### *c. Society*

- Online activities: E-commerce creates virtual environments or virtual markets for transactions, shopping, ... everywhere, thus reducing travel activities, reducing environmental pollution and traffic accidents.

- Improving living standards: Through e-commerce many goods and services, many market suppliers become more and more perfect, thus increasing healthy competition. Therefore creating a lot of pressure to reduce prices, so the ability of customers to buy becomes higher with the constant amount of money thereby improving the standard of living of everyone.

- Opportunities for underdeveloped countries: Poor countries can access products and services from more developed countries through the Internet and e-commerce. It is also possible to learn experiences, skills... trained online at much lower costs than studying directly.

- Better public services: services such as health, education, and other public services of the government ... are implemented online at lower costs, in more convenient way and especially with reduced implicit costs such as: granting online licenses, tax payment, medical advice, educational counseling, ...

## **4.2. Challenges of e-commerce in Vietnam**

E-commerce has created many opportunities but also created challenges for organizations, consumers and society.

### *a. Organization*

- Competitors in the industry: are those with the same customer segment, same products, similar prices and have competitive power on the same market segment. E-commerce opens many opportunities for businesses, thus creating a lot of competitors in the same industry or field. Enterprises in Vietnam compete not only with domestic peers but also with businesses all over the world. They are well-invested organizations with certain traditions and strong advantages such as capital, strategy, experience, human resources. Therefore, if domestic enterprises do not have the strategy or effective solutions, they can lose immediately in the Vietnamese market.

- Alternative products: are goods that can replace other types of goods equivalent to use (or to consumption) when conditions change. Substitute goods may have better or lower quality than the product it replaces and usually have cheaper

prices. Especially with e-commerce, the quality of products with competitive prices from countries around the world and highly appreciated by the Vietnamese market, for example from Thailand and Malaysia located near Vietnam, farer are Japan and Korea. This is a product with diversified quality, so if businesses in Vietnam do not have appropriate strategies, the market will be occupied by foreign organizations.

- Suppliers: is a party (an individual, an organization or an organization) that provides goods or services in the global value chain. In the modern trade market, there are many suppliers involved in the supply chain. Through e-commerce and especially deep linkages in the supply chain, suppliers will have more rights, more information and the higher ability to penetrate the remaining members in the chain with higher speed and lower costs. Therefore, strategic suppliers are thoroughly invested, with the ability to negotiate and sign contracts in a very professional and rigid way to bring more benefits to themselves. Therefore, new Vietnamese enterprises participating in the supply chain through e-commerce will face many challenges when signing contracts with professional suppliers.

- Customers: are individuals or organizations whome enterprises are directing marketing efforts to. They are people with rights to make shopping decisions. Customers are the beneficiaries of the characteristics and quality of products or services. Today, customers have more quick and accurate information and are given the experience by e-commerce shopping communities. Moreover, customers in developed countries have a lot of experience, knowledge, especially in law of e-commerce. Especially, in case of customers who are organizations with many years of experience, professionalism and large scale, they have many advantages when participating in e-commerce or participating in trading negotiations. Therefore, customers become more intelligent and experienced, this will be a big challenge for Vietnamese enterprises.

- Potential or hidden competitors: are different concepts indicating the competitor with the ability to join and compete in a specific market but has not yet joined. Due to the characteristics of the e-commerce, every organization can participate with different scale and timing very quickly, it does not seem like the traditional market so potential competitors can enter the market at any time with the diversity of number and types of product design, This is a big problem and challenge for Vietnamese enterprises when they approach global e-commerce.

### ***b. Consumers***

E-commerce with countless products and services, with different colors and sizes will make customers face a difficulty to choose products and services suitable

for themselves. The difficulties that Vietnamese customers often face when participating in e-commerce are:

- In situation with thousands of suppliers, with thousands of different products of the same type with too much information, customers are in information crisis, they do not know which one is wrong. Moreover, Vietnamese consumers are also new to e-commerce, so their knowledge and experience are limited. At the same time, the laws on information control and product and service quality in Vietnam are still limited. Therefore, many individuals and organizations take advantage of this loophole to produce inaccurate information about their products, services or other businesses. Therefore, many Vietnamese consumers are facing crisis of information surplus;

- Due to the characteristic of the e-commerce market (creating virtual booths or markets), consumers do not have the opportunity to experience real products and services. At the same time, in the age of information technology, making fake images and videos promoting products is very simple. Moreover, there is a lack of sanctions in Vietnam so this is a big challenge for Vietnamese consumers.

- The characteristics of e-commerce lie in the fact that sellers can be everywhere and many e-commerce exchanges do not check the information of service providers. At the same time, the information monitoring mechanism in Vietnam are also limited. Moreover, service and product providers easily create counterfeit interactions on their booths to falsify information. Therefore, consumers will also face many challenges when participating in e-commerce transactions when the trend of commercial fraud is increasing.

- Due to the psychological and emotional characteristics of people when they encounter benefit-stimulating factors, especially with the products and services they like, it is often difficult to control emotions, they are excited when buying goods without finding out information about product quality, brand name they do not have a real need to buy. Moreover, today many large organizations employ both marketing and psychology experts to build marketing stimuli that make consumers strongly affected. This is also a challenge for consumers when participating in e-commerce.

### ***c. Society***

E-commerce is a new form of business in Vietnam, so it is difficult to build methodology or law regulations. Moreover, due to the challenges presented above for organizations and consumers in Vietnam, e-commerce also creates many social challenges such as commercial fraud, information crisis; increasing number of frauds affects negatively on the attitude of society to e-commerce.

## **5. Recommendations**

In order to bring more benefits to businesses, consumers and society from e-commerce activities in Vietnam, the authors propose following solutions:

- Creating a legal corridor

Protection of personal information is of special importance for e-commerce. Many legal documents have regulations on the protection of personal information such as the Civil Code, the Criminal Code, the Law on Information Technology, the Law on Network Information Safety, the Decree on E-Commerce. The Decree stipulates penalties for administrative violations in the field of post, telecommunications, information technology and radio. However, the situation of collecting, using, dispersing, illegal trading of personal information is still common. The fact that, through social networking sites, the risk of personal information being illegally collected, used, disseminated, or traded is one of the causes of consumer confidence declining with e-commerce. On January 1, 2019, the Law on Network Security came into force to resolve consumer information issues in the e-commerce market. The government needs to promote information of the Network Security Law in e-commerce to businesses and consumers in Vietnamese market. Online business enterprises also need to have meetings to understand this law.

Concurrently, day by day Vietnam is deeply integrating into the world economy, cross-border e-commerce also develops very quickly, requiring the government to have appropriate policies and solutions to take advantage of opportunities in Vietnamese e-commerce in the coming time as well as helping Vietnamese enterprises compete with businesses all over the world, that are not small challenges in e-commerce.

- Creating a stable environment

The business environment has a direct impact on investment decisions of businesses. The trader will prioritize the selection of environments with good service conditions for the business process of the enterprise. For developing the transparent e-commerce to, it is necessary to complete the legal environment, through the enactment and enforcement of laws and sub-law documents regulating trade activities, adapted to international laws and practice on international e-commerce transactions.

In e-commerce, infrastructure structure is a very important factor in the business process and business expansion. Therefore, the government should pay attention to and encourage investment in infrastructure development of the e-commerce system.

The Government should develop a strategy to narrow the digital gap, the gap in e-commerce index among provinces. Currently, e-commerce in Vietnam is developed mainly in two big cities, Hanoi and Ho Chi Minh City. The spread of e-commerce to cities and provinces across the country is very important. Localities need to follow the master plan for socio-economic development of economic regions.

- Transparent information

The Ministry of Industry and Trade should coordinate with state management agencies to implement effectively the anti-fake goods and goods of unknown origin and goods infringing intellectual property rights in the e-commerce environment.

Enterprises should to improve their role in owning e-commerce websites, should to protect consumers; the commitment to sales has to ensure quality, origin to build trust of consumers.

The Government should improve the legal framework, review and classify website applications, strengthen the inspection, examination and handling of violations in e-commerce to protect consumers' interests. After all of that, the number of customers in e-commerce will definitely increase, businesses will take advantage of e-commerce opportunities in the economy.

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# SOME SOLUTIONS TO STRENGTHEN THE EQUITIZATION OF STATE-OWNED ENTERPRISES IN VIETNAM

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## **Abstract**

*Equitization in Vietnam is expected to be an important solution to improve the performance of state-owned enterprises, support the capital market and contribute to reducing public debt pressure. The equitization of state-owned enterprises has achieved remarkable results, but some limitations need to be overcome in the coming time. This study is based on data from the reports of the Steering Committee for Enterprise Renovation and Development, Government Decrees and the Prime Minister's Decision to analyze the status of equitization of state-owned enterprises in Viet Nam. On the basis of research results, the article proposes solutions to promote equitization of state-owned enterprises such as: improving institutions, promoting in implementation organization and implementing solutions in corporate governance, monitoring, inspection and disclosure of information.*

**Keywords:** *Equitization, solution, state-owned enterprises*

## **1. The urgency of the research problem**

Joint-stock company is a progressive form of organization in a market economy. In many countries and territories around the world, the arrangement of converting a number of businesses into joint stock companies, towards forming strong multinational corporations, effectively operating in the domestic market and the international market is an effective way to innovate the state economic sector.

Previously, in the central planning and subsidy mechanism, Vietnam has established too many state-owned enterprises, now moving to a market economy, state-owned enterprises need not be present in all fields of the economy. State-owned enterprises are only established and maintained in key sectors, key areas, which have the effect of paving the way and enabling other economic sectors to develop, regulate and turn the economy into socialist market economy. Grasping the general trend of

the world as well as the actual situation of Vietnam, from 1990 up to now, the State has taken measures to rearrange state enterprises to reduce the number of state enterprises such as: Dissolution, merger, sale, equitization of state-owned enterprises, in which equitization is an important measure of concern to the Party and the State.

After nearly 30 years of implementing this policy, the number of state-owned enterprises decreased significantly. If in the 1990s, there were about 12,000 state-owned enterprises nationwide, in 2001 there were about 6,000 state-owned enterprises, in 2011 there were 1,369 state-owned enterprises, in 2016 there were 718 state-owned enterprises, so far this number there are only 500 enterprises with 100% state capital in 11 ministries, sectors and sectors of the economy. It is expected that by 2020, the whole country will have only about 100 state-owned enterprises.

Enterprise restructuring, with a focus on equitizing state-owned enterprises, is considered one of the three pillars of economic restructuring. Equitization is expected to be the most practical solution to improve the performance of state-owned enterprises, support the capital market and contribute to reducing public debt pressure. However, the progress of equitization of state-owned enterprises in the country has been slow. 2/3 of the equitization process under the Prime Minister's Decision No. 58/2016/QĐ-TTg has passed, but the results are quite modest. Specifically, 2018 was considered a pivotal year for this issue, but only 23 enterprises were approved for equitization (the plan was 64 businesses).

The equitization of our state-owned enterprises is now a topical issue that is receiving the attention of all levels, sectors and society. Every year the Government outlines the equitization plan in detail, as well as issuing many regulations on equitization; The National Assembly issued a resolution on this issue... The legal corridor was complete, but the process was very slow, many difficulties were difficult to remove. Therefore, it is necessary to have timely solutions to accelerate the process of equitization, to achieve the proposed socio-economic development objectives.

## **2. Equitization and the policy of equitizing a state-owned enterprise**

According to the State Enterprise Renovation and Development Board, equitization is the process of transforming state enterprises into joint stock companies, in which organizations and individuals inside and outside enterprises are allowed to buy a part or all of the value of the equitized enterprise. Equitization of state-owned enterprises is a specific measure of the process of reforming state-owned enterprises, the process of transforming state-owned enterprises into joint-stock companies. Equitization of state-owned enterprises is the process of ownership transformation from enterprises where the State holds 100% of charter capital to multi-owned enterprises, including the ownership of employees in

enterprises and the ownership of other organizations and individuals, operating in the form of joint stock companies.

Equitization is a policy that has been proven to be a clear effect on improving the efficiency of state-owned enterprises. This policy has been paid due attention, legalized and recently focused on achieving better results. Implementing this policy, the National Assembly has adopted a number of important laws such as Land Law, Enterprise Law and Law on management and use of state capital invested in production and business in enterprises... The issuance of sectoral criteria to arrange state-owned enterprises is also implemented to ensure suitability and consistency with the provisions of specialized laws such as Electricity Law, Telecommunications Law, Railway Law, Maritime Code... The Government, ministries, ministerial-level agencies and provincial-level People's Committees have promulgated legal documents and directing documents for implementation in order to institutionalize policies and guidelines of the Party in arranging and transforming state-owned enterprises.

Decision No. 143 / HDBT of the Council of Ministers issued on May 10, 1990 selected a number of small and medium enterprises to try to convert into joint stock companies. This is a pilot phase of equitization of state-owned enterprises. After the pilot phase with positive results, the period of extensive equitization was carried out. To effectuate this policy, on July 17, 2012, the Prime Minister issued Decision No. 929/QD-TTg on the approval of the project on restructuring state-owned enterprises, focusing on economic groups and state-owned corporations in the period of 2011-2015, clearly stating the tasks: *"Implementing the objectives of arranging and equitizing enterprises according to approved plans; consider this as a key task in 2012 - 2015"*.

Decision No. 58/2016/QD-TTg December 28, 2016 was issued attach with Annex I on Criteria for classification of state-owned enterprises and enterprises with state capital and Appendix II on List of State-owned enterprises arranged in the period 2016 - 2020 as a basis for classification, arrangement existing state-owned enterprises and continue to sell the State capital of these in order to speed up the reorganization and renewal process till 2020. This period, 240 state-owned enterprises needed to be equitized.

Decision approving the plan to restructure state-owned enterprises under the direction of the Prime Minister in Decision No. 707/QD-TTg dated 25/5/2017 as a basis for organizations to implement. According to the project, *"Continuing to restructure the entire state-owned enterprises: reorganizing enterprises; improve financial capacity; innovation of management and technology; reforming*

*organization and managing human resources; product structure, production and business sectors, development strategy to improve operational efficiency" with the goal of "Complete equitization of 137 enterprises; striving to the end of 2020, the State only holds 100% capital in 103 enterprises".*

Resolution No. 12-NQ/TW dated June 3, 2017 of the 5th Party Central Committee Executive Committee Meeting XII affirming that "*Restructuring and reforming state-owned enterprises under the market mechanism is a regular and continuous process with appropriate implementation methods and routes. Continue to restructure state-owned enterprises in the direction of resolutely equitizing and selling capital in enterprises where the State does not need to hold or not need to hold dominant shares, including effective businesses; at the same time, thoroughly handling, including bankruptcy of weak state-owned enterprises*". Objective by 2030: "*Most state-owned enterprises have a mixed ownership structure, mainly joint stock enterprises*". This Resolution once again affirmed that equitization of enterprises is inevitable.

According to Directive 01/2019/CT-TTg on strengthening the direction and promotion of restructuring, reorganizing, reforming, equitizing and divesting State capital in state-owned enterprises and enterprises that State holding capital, signed by the Prime Minister on January 5, 2019, showed the determination of the Party and the State in the restructuring of state-owned enterprises and equitization of enterprises in order to raise the operation efficiency of state-owned enterprises.

Thus, equitization is the right policy of the Party and the State, necessary to rearrange state-owned enterprises, improve the operational efficiency of enterprises, contributing to the socio-economic development of the country.

### **3. Research Methods**

The study mainly collects secondary data sources from documents, reports, plans, resolutions and decisions of the National Assembly, the Government, the Prime Minister, the Steering Committee for Enterprise Renovation and Development, Government Information Portal... on the status of equitization of state-owned enterprises over time. These are the data and documents selected for the purpose of analysis, illustrating the actual situation of enterprise equitization. Secondary resources are put into processing and analyzing in order to draw assessments and conclusions with scientific grounds for the research content.

Data collected after being processed by Excel tool to calculate indicators reflecting the state of equitization of state-owned enterprises. After that, the study uses descriptive and comparative statistical methods to analyze data to clarify the fluctuation of the analysis criteria during the periods .

## **4. The status of equitization of state- owned enterprises in Vietnam**

### ***4.1. The period before 1998***

Implementing the policy of equitization of state- owned enterprises , in 1990, the Council of Ministers (now the Government) issued Decision No. 143/HDBT to select a number of small and medium enterprises to try to convert into joint stock companies. This is the pilot phase. As a result, two enterprises in 1990-1991 were equitized. In 1991, Chairman of the Council of Ministers Decision No. 202 date 06/08/1992 required each national ministries and each province selected from 1-2 to try equitizing. As a result, by April 1996, there were 3 state-owned enterprises managed by the central government and 2 local state-managed enterprises being equitized.

From the experience of the above seven equitization cases, in 1996 the Government decided to conduct equitization on a larger scale. Decree 28/CP of the Government dated 07/5/1996 required ministries, central branches and provincial and municipal governments to make a list of state-owned enterprises they managed to be equitized until 1997. The spirit of Decree 28/CP was selecting businesses that the State no longer needs to hold 100% of the capital as an object. Decree No.25/CP dated 26/3/1997 Government allowed the leadership ministries, branches and localities have more power in the conduct of equitized enterprises are chosen to try. Accordingly, for enterprises with capital of VND 10 billion or less, leaders of ministries, branches and localities had the right to organize equitization on the basis of Decree No. 28/CP. As a result of this extensive equitization pilot phase, 25 state-owned enterprises have been transformed into joint stock companies.

### ***4.2. Period 1998-2010***

After the two pilot phases of the equitization, the Government decided to officially implement the equitization program. On June 29, 1998, the Government issued Decree No.44/1998/ND-CP about transforming state enterprises into joint stock companies. In addition, Directive 04/2002/CT-TTg dated 08/02/2002 on the continued restructuring, innovation, development, and improve the efficiency of state enterprises, and Decree No. 64/2002/ND-CP on June 19, 2002 on transforming state-owned enterprises into joint-stock companies opened up a new phase of equitization - a massive phase of implementation. After the Decree 44/1998/ND-CP was applied until December 31 of the year 2002, which added 834 State-owned enterprises were equitized.

In January 2004, the Central Committee of the Communist Party of Vietnam, the 9th session, held its 9th session, where there was discussion and decision to promote the equitization of state- owned enterprises. At the end of 2004, the Government issued Decree No.187/2004/ND-CP on transforming state-owned company into a joint stock company and when this Decree took effect,

the equitization phenomenon "Closed" was previously resolved by auction of shares. Among 30 companies listed on Ho Chi Minh City Stock Exchange Center (now Ho Chi Minh City Stock Exchange) on October 31, 2005, 29 companies were equitized state enterprises. During this time, the equitization process went into depth and reaches certain results. Number of equitized enterprises was 2,649, more than 3 times the previous years. According to the report of the Steering Committee for Renewal and Development of State enterprises, to date 31/12/2005, the country has implemented 2,242 equitized state enterprises, with a total capital of the enterprise equitization amounted to VND 17,700 billion, equal to 8.2% of all State capital in enterprises. On average in joint stock enterprises, the State holds 46.5% of charter capital; officials and employees in the enterprise hold 38.1%, non-enterprise investors hold 15.4%. Through equitization, about VND 12,411 billion has been mobilized from non-social individuals and organizations to invest to enterprises. The State has recovered about VND 10,169 billion. Exploiting, mobilizing and effectively using these capital sources would create favorable conditions to accelerate the process of national industrialization and modernization.

Compared with the pilot phase, the expansion phase had additional object was equitized enterprises with large-scale, the State corporations. Yet until Decree 109/2007/ND-CP, 77% of equitized capital was just under 10 billion. Particularly for the equitization of enterprises where the State did not hold any proportion in the charter capital, were small enterprises with the State capital under 1 billion and inefficient enterprises. This type of small company accounted for nearly 30% of the enterprises that the State equitized. Decree No.109/2008/ND-CP promulgated to promote equitization for large-scale state-owned enterprises. Since implementing Decree 109/2007 / ND-CP and Decree No. 109/2008 / ND-CP until the end of 2010, there have been 356 equitized enterprises, bringing the total number of state-owned enterprises to be equitized in the period. There were 3,839 businesses.

**Table 1. The status of enterprise equitization in the period of 1998-2010**

<b>Year</b>	<b>Number of businesses and business units</b>
1998-2002	834
2003-2006	2,649
2007-2010	356
<b>Total</b>	<b>3,839</b>

*Source: Steering Committee for innovation and enterprise development (2011)*

#### **4.3. Period from 2011 to 2015**

In order to promote the equitization of large-scale enterprises, on July 17, 2012, the Government issued Decision No.929/QD-TTg approving the project "Restructuring state-owned enterprises, focus on State Corporations, period 2011 - 2015".

The legal framework for SOEs innovating continued to be strengthened, such as the Government's Resolution No.15/NQ-CP of March 6, 2014, on a number of measures to boost the equitization of state enterprises and withdraw State capital in enterprises mentioned comprehensive action plan to boost the divestment of state- owned enterprises. At the same time, two important related laws including the Law on the Management and Use of State Capital invested in production and business and the Enterprise Law (amended) were also approved at the National Assembly session in October 11, 2014. The Law on Management and Use of State Capital invested in production and business was expected to enhance transparency and accountability in investment, manage State capital in production and business activities, increased the level monitoring the performance of state- owned enterprises of the National Assembly and related parties. The Enterprise Law (revised) encouraged entrepreneurship, created a more transparent business environment and created a level playing field for all types of businesses.

Dated 18.06.2014, the Prime Minister signed Decision No.37/2014/QD-TTg of "promulgate criteria, lists of classified State enterprises" aimed at boosting the restructuring and renewal of existing state enterprises. This decision identified and classified state- owned enterprises according to the percentage of charter capital held by the State.

With the legal framework completed, the results of enterprise equitization in the period of 2011-2015 obtained some certain results with 499 enterprises. Thus, in the 2011-2015 period, equitization of state- owned enterprises reached 90% of the plan.

According to the report of equitized state-owned enterprises in the period of 2011-2015, the business results of 2015 increased more than the year before equitization, namely: charter capital increased 72 %; total assets increased by 39%; equity increased by 60%; revenue increased by 29%; pre-tax profit increased by 49%; submit budget to increase by 27%; The average income of workers increased by 33%.

**Table 2. The status of enterprise equitization in the period of 2011-2015**

<b>Year</b>	<b>Number of businesses and business units</b>
2011	19
2012	20
2013	77
2014	144
2015	239
<b>Total</b>	<b>499</b>

*Source: Steering Committee for Enterprise Renovation and Development (2018)*

#### ***4.4. Period from 2016 to 2018***

In order to overcome the limited in the equitization in previous periods, Resolution No.12- NQ/TW dated June 3, 2017, the Fifth Conference of the Party Central Committee XII and Resolution No.60/2018/ QH14 dated June 15, 2018 of the XIV National Assembly promulgated in order to correctly and fully realized the market principles and complied with the law to ensure publicity and transparency, resolutely repelled restrictions, negatively slowing down the process of equitization and divestment.

Decree No. 126/2017 / ND-CP on transforming state-owned enterprises and one-member limited liability companies invested by state-owned enterprises with 100% charter capital into joint-stock companies has been issued and enforced from 01/01/2018 has been amended and supplemented to improve the quality and responsibility of consulting organizations in determining the value of State capital and assets at enterprises to share State capitalization and divestment. This decree stipulated that equitized enterprises are responsible for reviewing all land areas under management and use to prepare and complete approval of land use plans in accordance with the law on land and related laws before the time of equitization decision... In addition, Decree No.167/2017/ND-CP regulating the reorganization and handling of public assets contributed to pushing quickly equitization, removing previous problems.

Resolution No. 60/2018 / QH14 on the continued improvement and promoted the implementation of policies and laws on management and use of state capital and assets in enterprises and equitization of state enterprises has brought out the duties and solutions mainly to overcome these limitations, obstacles and gaps, to implement efficient policies and legislation on the management and use of state capital and assets in enterprises and equitization of state- owned enterprises.

With the legal framework is finalized, the period 2016-2018 was 147 equitized enterprises (SOEs 70 central and 77 local SOEs) with certain results with total enterprise value was VND 440,290,374 million; The value of State capital was VND 204,689,479 million.

**Table 3. Situation of enterprise equitization in 2016-2018 period**

*Unit: Million VND*

Year	Number of enterprises	Enterprise value	Value of State capital	Charter capital	State capital
2016	66	40 206 598	27 328 917	27 190 635	13 464 196
2017	69	370 336 187	161 947 296	163 437 792	86 915 571
2018	12	29 747 589	15 413 266	18 348 159	11 158 119
<b>Total</b>	<b>147</b>	<b>440 290 374</b>	<b>204 689 479</b>	<b>208 976 586</b>	<b>111 537 886</b>

*Source: Steering Committee for Enterprise Renovation and Development (2018)*

General assessment of the situation of equitization, divestment, Deputy Prime Minister Vuong Dinh Hue, Head of the Steering Committee said that in the past 3 years, the Government and the Prime Minister have just completed the law and policies in the direction of increasing openly, transparently, closely, close to reality, and deploying the plan of equitization and divestment in each enterprise. As a result, equitization and divestment have been strictly implemented by ministries, localities and enterprises, maximizing the interests of the State, contributing to supporting the development of private enterprises.

However, the Deputy Prime Minister and the leaders of the ministries and members of the Steering Committee all said that the progress was slower than the plan of 2018 (64 businesses). Thus, more than 50 enterprises in 2018 have not been equitized.

#### ***4.5. Evaluating enterprise equitization in the last time***

In 2018 in particular and the first three years in the period of 2016-2020 in general, in the situation of improving the law and mechanisms and policies in a more efficient and coherent manner, both developing, approving and implementing equitization plans for each year and the period 2016-2020, the equitization of state-owned enterprises and enterprise development has achieved some positive results.

Accumulated in the first 3 years of the period 2016-2020, the whole country equitized 147 enterprises, an increase of 34% compared to the total number of equitized enterprises in the first three years of the period 2011-2015. The total size of State capital was re-determined to reach VND 204,689,479 million, equivalent to 108% of the total value of State capital in equitized enterprises in the period of 2011-2015. Total revenue from equitization and divestment in the first 3 years of 2016-2020 reached 212,304 billion VND, 2.71 times higher than the total revenue from equitization and divestment of the whole period 2011-2015. Enterprises after equitization operated effectively and fundamentally innovated corporate governance, having many positive impacts on the country's socio-economic development process, increasing competitiveness and promoting stock market, financial market development.

However, in addition to the achieved results, the equitization of state-owned enterprises in Vietnam had some limitations that need to be learned and overcome in the coming time. Some ministries, branches and localities have not completed the equitization plan in 2018 in accordance with the Prime Minister's approval, must adjust the implementation plan to suit the reality; In the process of equitization, the State capital was lost; Some businesses after equitization have not been effective; not yet registered for trading and listing on the stock exchange.

*Cause of limitation:*

Firstly, some ministries, branches, localities, economic groups, state corporations have not really seriously implemented the plan of equitizing state-owned enterprises under the direction of the Prime Minister. The role, awareness, responsibility of the head of the enterprise was not high, not yet drastic in renewing the operation of the enterprise, not being transparent and transparent in accordance with the law, ensuring the principle market, anti-group interest in equitization and state divestment.

Secondly, in production and business activities, some individuals and businesses infringed market principles, not public and transparently financial information. Particularly, some leading individuals violate the law affecting the efficiency of production and business activities of enterprises, leading to losses of capital in some projects.

Thirdly, some state-owned enterprises have been slow to amend and supplement the economic and technical norms, consumption of materials and raw materials to match actual business conditions, thereby slowing management reform enterprises to improve production and business efficiency.

Fourthly, the labor force in state-owned enterprises has been still crowded, labor productivity was low, skilled workers were insufficient and weak; Outdated equipment status, not keeping up with the advanced technology of the world and the requirements of the Industrial Revolution 4.0; Organizational structure in state-owned enterprises has been still cumbersome, ineffective.

Fifthly, the equitization process of state-owned enterprises needed a lot of time to deal with financial, land and labor problems, which made the equitization period last longer. Especially, the issue of establishing land legal documents by the local People's Committee was slow, increasing the implementation time compared to the regulations, leading to enterprises to adjust the equitization progress.

Sixthly, the ratio of state capital in implementing the equitization plan of state-owned enterprises remained high, thus reducing the attraction for investors to buy shares, affecting the success of equitization.

## **5. Some solutions to promote the equitization of state-owned enterprises**

### ***5.1. About institutions***

In 2019 and 2020, completing the review and reporting to the Government to submit to the National Assembly for promulgation of Laws of amendments and supplements related to equitized enterprises such as: Enterprise Law; Law on

management and use of state capital invested in production and business at enterprises; Law on cadres and civil servants; Bankruptcy laws; Labor Code ... Along with that, the ministries and agencies should urgently submit to the Government and the Prime Minister to issue new Decrees to replace some old Decrees which are no longer suitable as Decree No. 99/2012/ND-CP dated November 15, 2012, Decree No. 130/2013/ND-CP, Decree No. 172/2013/ND-CP, 69/2014/ND-CP, 128/2014/ND-CP and Decision No. 35/2013/QD-TTg, 74/2013/QD-TTg.

### ***5.2. About organization of implementation***

The ministries, branches, localities, economic groups and state corporations urgently complete the approval or submit to the competent authorities for approval the plans to restructure enterprises in the management domain according to regulations. in the Prime Minister's Decision No. 707/QD-TTg, clearly stating the progress, the implementing agency and the responsible person. Associate the results of the implementation of rearrangement, innovation and efficiency improvement of state enterprises with the evaluation of the responsibilities of the heads; continue to renovate the appointment and dismissal of heads of state enterprises.

The heads of the ministries, branches and localities shall have to urge and strictly implement the criteria for classification of State enterprises and the list of State enterprises to be arranged in the 2016-2020 period already approved by the Prime Minister. issued in Decision No. 58/2016/QD-TTg; carry out equitization in accordance with the plan in Official Letter No. 991/TTg-ĐMDN on July 10, 2017, Decision No. 1232/QD-TTg dated August 17, 2017.

State-owned enterprises under equitization should urgently review all land areas under management and use to formulate land use plans in accordance with the Land Law and submit them to People's Committees of provinces and cities directly. The Central Government gives opinions on plans and land prices for the competent authorities to approve before organizing the valuation of equitized enterprises in accordance with the provisions of Decree No. 167/2017/ ND-CP dated 31/12/2017 and Decree No. 126/2017/ND-CP dated November 16, 2017.

Completing the valuation of enterprises when equitizing. Enterprise valuation is understood to be widely acknowledged as a detailed investigation and assessment of the company's activities in order to determine the value and potential of a business. This is a very important activity when equitizing. In all the legal documents (Decrees, Decisions) of the Government, there are contents on enterprise valuation, suitable to the objectives and context of each stage. In the coming time, this content still needs to be improved to ensure, on the one hand, to avoid the loss of State capital and on the other hand, attract investors, especially strategic investors. Moreover, it is

necessary to attract good techno-economic experts to ensure accuracy in the process of asset valuation (tangible and intangible), thereby, properly and fully determining the value businesses, stock prices are reasonable, attracting investors.

### ***5.3. About corporate governance***

The Members' Council, the chairman, the board of leaders of economic groups, corporations, enterprises should immediately carry out the following tasks:

Firstly, supplement or develop economic and technical norms for the activities of enterprises as a basis for management, inspection and supervision of enterprises.

Secondly, build a plan to organize production and business, deploy restructuring the member enterprises to perform specialization, assignment, cooperation, non-spreading investment and dispersion of resources; avoid internal competition towards merger, consolidation of member enterprises doing business in the same industry; focus on the main business lines and related industries to directly serve the main business lines

Thirdly, innovation of corporate governance in all aspects, strengthening internal control and auditing, contributing to improving autonomy and self-responsibility in production and business; improve the efficiency of capital use, competitiveness and sustainable development.

Fourthly, consolidate the management apparatus on the basis of streamlining and compacting; fostering and improving the level of enterprise management officials to meet the management requirements in the market mechanism. At the same time, arrange leaders, managers and representatives of the state capital to have good moral qualities and professional capacity to perform well the role of state owner representative in enterprises.

Fifthly, improving the quality of labor in enterprises, the focus is on highly skilled technical workers to improve the productivity of each labor and the productivity of the entire enterprise.

Sixthly, actively investing in technology innovation, purchasing machinery and equipment in accordance with production and business requirements. The procurement of machinery and equipment and technology is discussed and decided by the Board of Directors on the basis of calculating what businesses need to buy and what is suitable for production and business conditions and financial situation of no company The calculation and decision process takes place urgently and decisively to meet the requirements of time and progress without having to rely on anyone's approval. This allows state-owned enterprises after privatization to seize the

opportunity to expand production and business, create conditions to improve product quality, competitiveness and reputation in the market.

#### ***5.4. About supervision, inspection, publicity and transparency***

Strengthening inspection, inspection, supervision, auditing, not letting state capital and property losses occur in the process of equitization of state enterprises; Supplementing the contents of inspection and inspection of the responsibility of the head of the unit in the observance of administrative discipline when implementing the equitization plan at the enterprise; responsibility of the leader in organizing and completing annual business and production activities; Supplementing the inspection list for enterprises that are late in the final settlement at the time of transferring from state-owned enterprises to joint-stock companies. Periodically publicize information on the progress and results of the equitization of state-owned enterprises, clearly stating that the unit name is completed, the name of the unit is still behind schedule... as a basis for appreciate of equitization schedule, promptly remove difficulties and obstacles during the implementation process.

#### **Conclude**

Equitized SOEs always get the attention of the Party and State of Vietnam, especially in the period of international economic integration and towards building a true democracy of the people, under the supervision of the people and towards the people. The reality of nearly 30 years of equitization of state-owned enterprises has proved that this is a right policy and needs to be focused in the coming time. To complete the enterprise equitization plan, it is necessary to synchronize many solutions such as: Complete the Law system, issue necessary legal documents; Strictly implement approved equitization schemes; business management innovation; strengthen supervision, inspection as well as publicity and transparency of information on equitization .... In order to well implement the above solutions, there is a need for consensus of the authorities at all levels and the people in Vietnam.

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**PART 2: URBAN AND REGIONAL  
DEVELOPMENT**



# RE-WORKING THE LOCAL GOVERNMENT PLANNING PROCESS IN VIETNAM: A CRITICAL REVIEW BASED ON EMPIRICAL RESEARCH

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## **Abstract**

*Planning has been applied in the private sector and adopted in the public sector as it is boosted by administration reform programs in the 1990s in order to improve efficiency and effectiveness. However, it seems that the planning process in local government is often viewed as a top-down, linear, closed and, alienating approach. This results in static and dormant plan, disintegration and lack of coordination across government organizations, and inflexibility when developing a framework, strategy and vision for the local government. Thus, this research article proposes that a more participatory approach based on two –way communication and consideration of many domains of knowledge be considered to support systemic governance and participation in planning and decision making in local government.*

**Keywords:** *Local government, Planning, Subsidiarity, Systemic governance, Governance*

## **1. Introduction**

Vietnam followed the central planning model from the U.S.S.R. The central planning approach has been an ideology for the unitary state of Vietnam in the last few decades where the resource allocation was decided by the central authorities according to administrative plans. Originally, the plan was considered as a constitution for North Vietnam and for the whole country after unification (1975). The whole country followed the plan strictly in terms of what needed to be produced, and where and how many products were produced, etc.

However, problems with such planning accumulated and countries have been moving to the other approaches to meet the demand of changes. In Vietnam, since the country used to be a planned economy and most of the economic activities were under center's control in the plan period, this has led to economic inefficiency and low quality of life. In 1985, the earliest year for which comparable economic data are available, Vietnam stated that it had a very low economy, with a GDP at 4.2 percent

and low life expectancy at birth of 65 years (World Bank estimates based on Vietnam Living Standard Survey (VLSS) 1993). Paralleling the international trends, Vietnam has been implementing the reforms in the development discourse regarding governance, management and citizen participation to enhance the development of the country, particularly in local government.

The renovation (Doi Moi) initiated since the late 1980s can be viewed as a process of adapting its institutions to the changing needs of a socialist-oriented market economy. As a result, the government has implemented the public reform programs in which the reformative approaches have been applied to the national planning system. In an era of globalization and entering the World Trade Organization, Vietnamese people requires ever more versatile policies, strategies and management methods to have sound visions and actions. For doing so, the government has been implementing the reforms in planning system. The reform of planning system is also a campaign to achieve Vietnam Millennium Goals (VDGs) and Vietnam's international commitments. It is also a means of the government to enhance democracy and participation of citizens and then to provide a better quality of life. Vietnamese government has put in place the legal framework for the reform of planning process in 2004. Prompted by episodes of the international donors, the Prime Minister issued a planning decree 'phap lenh ke hoach' and a directive No 33/2004/CT-TTg on the preparation of the five-year Socio-Economic Development Plan (2006-2010). The socio-economic development planning is considered as a crucial framework for eliminating and erasing poverty in Vietnam as set up in the Comprehensive Poverty Reduction and Growth Strategy (CPRGS-Chien luoc tang truong toan dien ve xoa doi giam ngheo).

During this reform periods, the GDP growth has been increasing during recent years about 8 percent per year during 1990-2005 (Vietnam Statistical Yearbook 2005). The social indicators such as poverty reduction have been improved. However, there are still some considerable issues questioning whether these developments are sustainable or not when (1) the government balance sheet and domestic public sector debt indicators are still of concern (Vietnam National Assembly, 2006); (2) the gap between the rich and the poor is larger (Vietnam Statistical YearBook, 2005); and (3) the voice and accountability to community in governance is still low (World Bank, 2006). These are great challenges to national and local authorities to look at their programs again, particularly the socio-economic development planning process.

These challenges and problems have been indicated that the change toward 'good government' have not been completed. The operation of the current planning model still shows the legacies of a centrally planned economy. There are increasing

concerns from the national and local authorities to look at again their reforms programs to fit appropriately to the new demanding situation. So the 5-year socio-economic development planning that has been considered as the secondly important decree of the Party would be one of the sources for the government to address the above challenges. It has taken a dominant position as the public sector represents the dominant investment sources. It prioritizes all of the proposals contained in the sector plans prepared by sectoral ministries, departments or agencies. Therefore examination of the planning system needs to be taken before taking further reforms to know how it is and whether there are challenges and problems in the system itself.

## **2. Method**

This research was preceded by consistent and rigorous collection and analysis of data using intensive qualitative case study methodology. The main data gathering tools were key informant interviews, focus groups discussions, participation observation, documentation and my own experiences as researcher, which were related to the research subject and developed through the World Bank and ADB related projects in Vietnam. The study used both purposive sampling and snowball sampling to collect data. This combination can be possible to provide the broadest range of information. The more information that can be obtained, the better the chance of a complete picture of the cases being studied. Selection of interviewees began with a purposive sample of individuals known to be expertise and practices in planning and/or to be in positions of particular influence within the local government.

Sixteen interviewees from across different organizations/departments and government levels including central government, provincial government, three district-level governments, commune governments, donors and expert consultants were interviewed. Interviewees were either the Chief Executive Officer (CEO) (or equivalent), Mayors and elected members or department managers and senior service officers in the organizations.

In this study, transcripts of interviews and focus groups, notes of observations and direct experiences and documents (plans, decrees, guidelines, instructions, websites, journals, and other public documents produced and provided by the organizations involved) were analysed. These were managed and analysed by using computers, particularly software package Nvivo.

## **3. Results**

This research contributes to the literatures (Ingle and Halimi 2007; UNDP 2006; World Bank, 2005) about the positive progress of the Vietnamese government on strengthening the local democracy and public involvement in terms of policies and regulations in other words in the theory; but still existing institutional barriers to

constraint the participation. For example, according to Ingle and Halimi (2007), there are three institutional barriers: (i) a lack of local awareness about existing and new policies, laws and regulations; (ii) reliance on mass organizations such as the Women's and Youth Unions; (iii) a lack of tools that facilitate participation along with useful detail guidelines on when, where and how to apply the tools. However, the findings identified that these are not enough barriers and not the root of the lack of or without undertaking citizen participation in the planning process. Not only the executive modes but also the governance modes should be considered further in the implementation about what it is, to what extent the citizen can participated on the government's issues, particularly in the planning process. The executive modes such as tools facilitating participation can develop through capacity building and technical supports and this have been undertaken can be implemented through partnerships with NGOs and INGOs or transferred from the other countries. Thus this would not be a difficult task and a focal point of the participation problems. But the governance mode, which relates to political, cultural, and social issues and needs to get deep into the government and society problems or system, is a crucial and a root of the other linkages and problems as discussed in previous section. This contributes to the conclusion of Werlin (2003) about the difference between poor nations and rich nations are because of 'poor countries suffer from the inadequate governance rather than inadequate resources' (p. 337). One of the ideological approaches to reforming governance is participation, this has been applied in many countries and literatures (Peters, 2001, p.50).

In Vietnam, the participation of community and citizens on the government's issues has obtained a certain progress since the government incrementally pays more attention to the participatory planning approach. However, it also has some limitations. The lack of local people showing interest in local level planning may be caused by frustration with their past efforts. Frustration and lack of interest in bottom-up planning mechanisms is also caused by the too-limited contribution from the village allowed in the formulation of the policies which are implemented by the government. In practice, if the people get things other than those they asked for, they will be disappointed and dissatisfied. The government needs to transfer its good intentions into good policies that can meet local governments' needs and provide the desired benefits for their communities. To obtain continuing support from the people they should not only be provided with the chance to offer their opinions about developments, but also see that at least some of their proposals have been accepted. In the context of the processes of government, this requires an opening up the minds of the programmers or planners to the local people's knowledge of their own living conditions as well as their expectations, potentials and constraints. For encouraging

real participation from local people, dialogue and transparency from the government is needed. The participation in the local planning process needs early involvement of all stakeholders who are concerned about or affected by the eventual decisions (Peters 2001; McIntyre-Mills 2003a, 2004, 2005a, b, 2006a, Vu & McIntyre-Mills 2008).

One of the strengths of the planning process is the available legal frameworks and documents for enhancing participation in the planning process. One example is the promulgation of the grass-root democracy decree that requires community and households to participate, monitor and evaluate the development activities at commune level. In addition, during preparation stage of doing 5-year plan, the prime minister also created a decree in which enhance participation of the community on the plan. However, the constitution or legal documents may be the basic document that specifies the main structure of a governance system, but it is not a guarantee of practicing democratic governance. However, the executive of the participation is limited. The participation is happening in the internal organizations and indirectly through the General Party Congress. This participation is around the middle of the process and mainly on the basis of a discussion plans draft. This can raise difficulties for government when governments do not sufficiently consult on the nature of the problem as understood by others (Edwards 2000, p.5). The limited internal participation can restrict motivation of employees' contribution to the organization because according to the USGAO (1995) the 'involvement and participation are the most effective means for motivating individual employees, even it those practices do have the potential to become manipulative' (as cited in Peters, 2001, p.53).

Moreover, the lack of participation on the planning process could miss out benefits and advantages of participation. This study has identified some reasons for non-participation of citizens in the planning process such as *time constraints*, *lack of a mechanism for implementing and governing participation* and *lack of resources*, but it seems that none of these can be a complete excuse for ignoring the communities by the government planners. The reason for the time constraints facing the district government officers can be the time consumed at meetings and workshops to deliver new policies, regulations and other issues, and because the higher level (the Planning Department at Provincial level) gives the district planners only one month from the date of receiving decrees, guidelines and instructions to the date they are required to be submitting the district-level plan, but this reason may be given as just an excuse. Strategic planning is a process over time. If the local government wanted to hear the community voice or, in other words, they wanted to implement a bottom-up approach, they should prepare and conduct participatory approaches such as holding community workshops, meetings and seminars to collect community ideas about desired futures and what they need to do in the next five years, or how can they get there and achieve

a better life. Then the local government would have community ideas on hand and when they receive the documents from higher level, the local government could test out their ideas to assess the desirability of its proposed plan. This would be a way of implementing a combined approach that incorporates both the top-down and bottom up approaches. The reason for the lack of a mechanism for implementing and governing participation is the negative attitudes and the lacking of trust of administrators or governments officers in citizen participation. This prevents authentic public participation on the planning process and this is also echoed with King and Stivers (1998), and King, Feltey, and Susel (1998) as cited in Yang (2005). As shown in the case study of Dong Anh district government, the CEO said that conducting participation of community or citizen in the governments issues would not be usefulness because their contribution would not valuable and useable. This can cause to a loss of public trust to government because ‘citizens will not trust public administrators if they know or feel that public officials do not trust them’ (Yang 2005). Building mutual trust between government and citizen is essential for society development and for a condition of collective actions and intentions. The other reason suggested by the data analysis is the *lack of resources* such as human resources and financial resources for implementing participation in the local planning process. Financial resources are limited for the local government, no budget scheme or mechanism is established for participation in the local planning process. However, according to Burnheim (1985, pp.178-179):

even if the cost in time, effort and information of running a system of decentralized decision-making were to prove considerably greater than for centralized systems, that cost should not count against demarchy if all the benefits are considered.

What ‘demarchy’ (Burnheim 1985, pp.178-179) does is give everybody “a chance of having a place for a time in a small group where his or her voice can make a real difference deciding about matters of public importance that interest those making the decisions”.

McIntyre-Mills (2003a, 2006a) argues that participatory democracy enables enhanced representation without undermining the role of a strong state bureaucracy. There is a place for both hierarchical decisions (which are necessary in some contexts like emergencies) but for the most part network governance and participatory democracy are useful for testing out ideas. Networks that span boundaries can be used to develop rights and responsibilities that do not erode the state and the responsibilities that go with it. Narrow forms of demarchy are not supported by this research or that of McIntyre-Mills as it could be a disservice for social and environmental justice.

It is argued that excluding participants from the planning process, especially the younger generations, may lead to unsustainable top-down decisions that impact on the environment that they will have to live in. The satisfaction of future environmental needs of young generations might be overlooked by others than themselves. Therefore, it is necessary to enhance participation in the local planning process. One way to make this occur is to apply a strategic planning approach involving systemic governance and interventions, which can enable ‘deep democracy’ (with more participation by the community) and deliver a more sustainable society and development.

In addition, the important reasons for excluding participation in the planning process are the reluctance, the negative attitudes and the lack of trust of administrators or government officers in citizen participation. These are possibly because the government officers are not interested in reform and do not favor public discussion. They are rigid in what they think and assume is right and sound for the public, and speak in a definite voice when talking about that. This prevents authentic public participation in the planning process which also coincides with the findings of King and Stivers (1998); King, Feltey, and Susel (1998) as cited in Yang (2005, p. 274), and Blair (2004, p.105). Their research concluded that authentic and effective participation of the public in the planning process requires a “rethinking of the underlying roles of, and relationships between, administrators and citizens” (King, Feltey, and Susel 1998, p.317), or “care and forethought by planners and administrators” (Blair 2004, p.105). As shown in the case study of Dong Anh district government, the CEO said that conducting participation by the community or citizens in governments issues would not be useful because their contribution would not be valuable and useable. This is a big misunderstanding of citizen participation as it can ensure that planning is more appropriate to the needs of the people. This exclusion can cause a loss of public trust in government because “citizens will not trust public administrators if they know or feel that public officials do not trust them” (Yang 2005, p. 273). Therefore, building mutual trust between the government and the citizen is essential for society’s development and for a condition of collective actions and intentions. It is suggested that this can be developed by applying the strategic planning because according to the study of Denhardt (1985, p.175), strategic planning can be a means for building up trust and commitment between governments and citizens.

#### **4. Discussion and Conclusion**

Planning in local government needs to be democratic and to be able to meet challenges of uncertainty and changeable environments incrementally. Government officers and planners when developing a plan need to keep in mind that the issue might be complex (McIntyre, 2007). They might need a plan comprehensively with good governance and in action. Strategic planning would be concerned with the ideas

coming from consultation with community domain and having facilitators instead of experts driven. The evaluation of its implementation and process is ongoing process instead of the evaluation of final result or plan. The planning needs to be inclusivity and participative on the whole process.

#### ***4.1. Inclusivity***

Inclusivity of values, knowledge, ideas and aspirations that provides the requisite variety required for optional choices is important component of the systemic governance strategic planning process. In the public sector, thinking and acting strategically should not be shaped by an individual or a group of people. It should be reflected to and made for communities and citizens because local knowledge is the basis for creativity (McIntyre 2005 a; b). In relation to the core function and task of government, Edgar (2001) provides an excellent illustration through the following statement:

‘The job of government is to provide the stitches that link the patchwork, not prescribe the colour, shape and texture of every separate piece of the quilt. The best of the new links will be created by people who rely on their own practical, tacit knowledge of what is needed and shows harness their own anger and frustration into a new and positive energy. They may well be uncomfortable for politicians and bureaucrats alike, but that is what democracy is all about. People problems are not neat and tidy packages to be handled by experts as the center’ (Edgar 2001, p.193).

Indeed, Edgar (2001) stressed the need for diverse ‘patches’ to be fostered at the local level. However, diversity is not only the basis of creativity, but it needs to be reflected in the policy making process (McIntyre, 2003). Participation of the people is one of the most important requirements in the policy making process related to creating and crafting new links in the ‘patchwork’. This should be done through systemic governance. According to McIntyre-Mills (2006), systemic governance is ‘a process of marching services to needs and ensuring participation by users or people concerned about issues affecting life, death and future generations. ...Systemic governance is both a process and structure, because its aim is to balance individualism and collectivism and that is the basis of democracy’ (p. XXXVIII).

According to the New English Dictionary and Thesaurus (1999), democracy is a form of government by the people through elected representatives. Democracy means there is a decentralization of authority to the stakeholders, an appropriate delegation of authority from the central to the local government. Based on the people’s trust through this election, the government will craft and design their prospective future community. Local government has a key role to play in both forward planning and providing the means for people to have a say in designing their future community environment, prioritizing their needs and deciding on how the resources should be utilized.

Contributing to these, McIntyre-Mills added that decision-making, planning and risk management can be addressed better by including everyone in systemic governance process in which decisions are made for a sustainable future, but also establishing quick centralized responses to disaster planning and disaster response. She recognized that...participatory design is the goal for both pragmatic and idealistic reasons<sup>1</sup>. Complexity of decisions must match the complexity of the issues and the more arguments that are considered the better the testing out of ideas. Respectful communication energizes and builds hope and trust. Creating the conditions for enabling open questioning and expression of feeling is vital for communication that supports sustainable governance. This enables ideas, emotions, values and experiences to be shared on a regular basis, so that creative energy is not blocked.

(McIntyre-Mills 2006, p. XLI)

In summary, systemic governance and participatory planning design approach is appropriate for creating, formulizing and actuating their vision which accommodated their aspiration (needs and wants) into reality. The involvement of the stakeholders in making strategic decisions both in the central and local level is very important because it could increase the commitment and obedience of stakeholders, especially local people, to fulfil all the objectives of decisions made.

#### ***4.2. Participative process***

As the definition of strategic planning mentioned in Section 2.2, strategic planning is convergence of collective intentions and efforts from various. It is a vision of the whole community. It requires involving all levels and functional units of an agency-top executives, middle managers and supervisors and employees, and participation of other various stakeholders such as business, communities and ordinary people.

The principle of participation derives from an acceptance that people are at the heart of development. At the broader, societal level, recent research has demonstrated that governments are often most effective when they operate within a robust civil society. Participation of civil society offers an additional and complementary means of channelling the energies of private citizens. NGOs, for example, can be helpful in identifying people's interests, mobilizing public opinion in support of these interests, and organizing action accordingly. They can provide governments with a useful ally

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<sup>1</sup> The assumption that underpins this process is that good governance requires asking good questions and providing the conditions-not merely to allow-but to foster good conversations and the asking of good questions. Providing space for diversity and for convergence –to find the shared themes-is the challenge. Governance requires that decisions should be applied at the level at which they are made (Edgar 2001) and that the requisite variety of decision makers are involved in making decisions about the future, to apply Ashby's Law 91956, Ashby, in Lewis and Stewart 2003). Local areas of specialization can be developed drawing on the expertise or personel knowledge of the people who have direct experience.

in enhancing participation at the community level and fostering a “bottom up” approach to economic and social development.

At the project level, a growing body of empirical evidence demonstrates that initiatives tend to be more successful when stakeholders and beneficiaries are integrated into the planning process. This principle also contains a normative component, in the belief that people have a right to be consulted about initiatives that will have a major impact upon their welfare and lifestyle. Participation implies that government structures are flexible enough to offer beneficiaries and others affected the opportunity to improve the design and implementation of public policies, programs, and projects. Examples of C&P in ADB’s Operations Manual Activities that involve high social, economic, or environmental risks or central objectives promoting participation and empowerment will require more and deeper participation throughout the project cycle.

Indeed, participation can help for testing out ideas to *know that strategic plan is going on the right track* among various stakeholders. The testing is done by the people and the experts so that lived knowledge and professional knowledge are combined. According to McIntyre (2003), knowledge based on personal experience or tacit knowledge can be made more widely useful if it is pooled and shared. She stressed that ‘open debate is central to democracy and the enlightenment to test out the ideas amongst all stakeholders, not just the experts or elected representatives’ (McIntyre 2005a, p.224). She added that ‘openness to debate and to other ideas and possibilities is the basis for both enlightenment process of testing and for democracy and ...for openness to occur there has to be some trust that voicing new ideas will not lead to subtle or overt marginalisation of oneself or one’s associates’ (2005, p.198).

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# IMPROVING TFP OF VIET NAM IN THE COMPARISON WITH ASEAN COUNTRIES

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## **Abstract**

*As a developing country, Vietnam has to face pressure and impact of globalization. Vietnam is now focusing on issues of competitiveness and productivity through micro-economic reform programs after having a reasonable level of macro-economic stability over the past thirty years. Pursuing productivity increase is a long-term process, aimed at effectively competitive thought. The most important thing in the effort to improve labor productivity is to build a collaborative environment of improvement among stakeholders and make effective thought become a working culture in each business. Economic growth is due to an increase in labor, capital and the rest is based on increased total factor productivity (TFP). In particular, the factors that increase TFP are to allocate and use the right resources, a fair business environment, promote innovation, develop education and infrastructure which are factors reflect the quality of growth.*

*Increasing TFP includes increasing system quality, increasing labor productivity and increasing capital quality. In which, the increase in labor quality is an important factor to increase labor productivity to contribute to TFP. The paper studies TFP in Vietnam in relation to TFP of regional countries, thereby proposing some solutions to increase Vietnam's competitiveness through TFP increase.*

**Keywords:** *productivity, industry, TFP, Vietnam.*

## **1.1 Introduction**

TFP has been regarded as a key driver of economic growth, explains the growth of output that does not derive from the number of inputs used, but from the levels of technology efficiency (innovation), management and quality of inputs exploited in production (Syverson, 2011), and Van Beveren, 2012. Therefore, governments, especially in developing countries, have made great efforts in implementing economic reforms to stimulate productivity. Syverson (2011) also indicated the determinants of firm-level TFP such as: managerial experience/talent, quality of inputs, information technology and R&D, learning-by-doing, production innovation, firm's relative size, firm's vertical and horizontal linkage, etc.

Isaksson (2007) emphasizes the crucial impacts of better institutions on TFP, especially its benefits for the effectiveness of capital formation and resource allocation. The study also referred to other factors that influence TFP such as infrastructure, human capital, financial development, etc. Clarifying the concepts of economic governance which includes both legislation and institution, Dixit (2009) highlighted the more important roles of policy application by institutions over government laws for productivity growth.

In general, a firm's TFP depends on characteristics of the firm itself and on characteristics of its external environment that affect its economic performance (Alvaro and Guasch, 2005; Uma et. al., 2005). Relevant characteristics of the firm may include its size, age, ownership, location and various proxies for its innovativeness or the quality of its management (Trung et. al., 2009). Concerning the determinants of TFP, Huang and Zhang (2016) examined the effect of ownership and trade on firm productivity in Vietnam. Doan et al. (2014) investigated the association between trade liberalization and the productivity growth of Vietnamese enterprises. Pham (2015) focused on the causality between export participation and firm productivity.

In the paper of Firouzi (2010), factors affecting labor productivity positively are: the percent of labor with high education, capital intensity, R&D activity, firm size, export status, firm ownership status and wage. The positive relationship indicates that firms with high ratio of labors with college or higher diploma will have higher labor productivity. The same result with Papadogonas and Voulgaris's findings as an increase in capital, investment in R&D activity and firms being exporters will lead to gain in labor productivity. Firms owned by state perform lower labor productivity compares to firms with other legal status. Unexpectedly, factor that has negative impact on labor productivity is the ratio of spending on employment training and industrial expenses, which means the more capital invested in training labors, the lower labor productivity received. This is contrary to the human capital studies and it can only be explained by considering the efficiency of training program. The phenomenon reflects the weakness of firms in investing in human capital when the quality does not match with capital expenditure. The paper studies productivity and TFP in Vietnam in relation to these of regional countries, thereby proposing some solutions to increase Vietnam's competitiveness through TFP increase.

## **2. Method**

The paper employed mix method as collected method and analyzed method in this study, the data collected from GSO, Vietnam Institute of Productivity, ILO, APO,

WB, related to labour productivity and TFP of Vietnam and Asean countries. After that, the article keeps going analyze growth rate, make comparison between Vietnam and other countries in Asia, assess their limitation and their cause and finally give some policy implementation in order to improve TFP of Vietnam. These policies implementation focus on shift economic growth model from wide growth to deep growth, learning success of Singapore, enhancing national competitive capacity and then it is essential that to assure labour productivity growth rate higher than salary growth rate.

### **3. Situation of TFP in Vietnam compared with Asean countries**

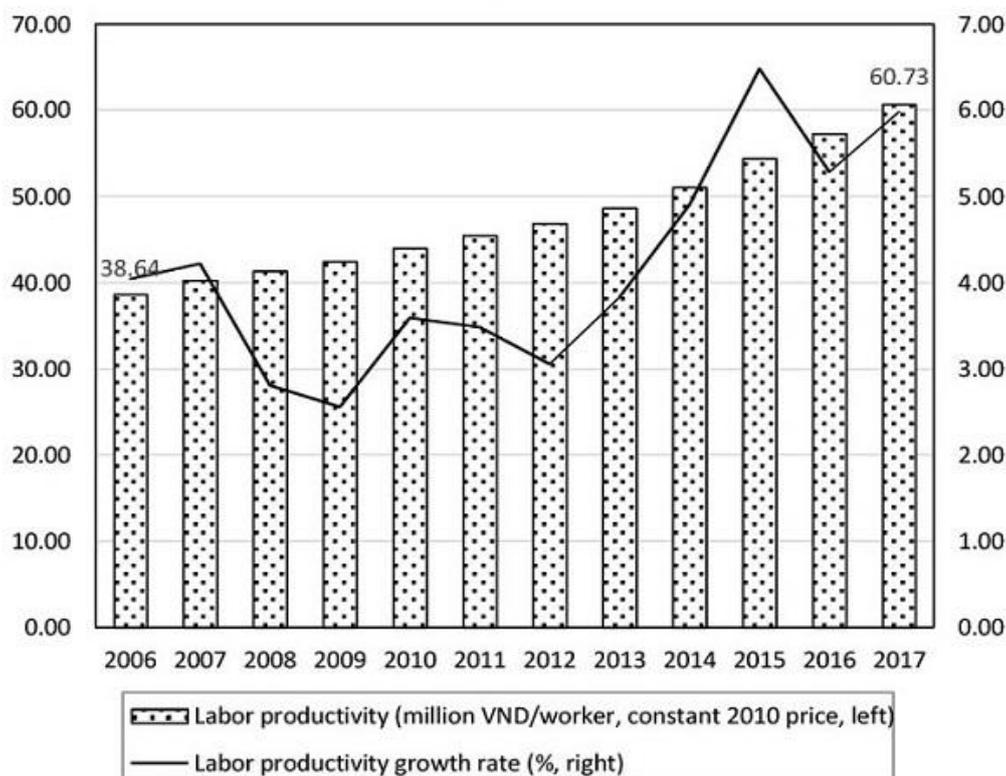
In recent years, the Vietnamese economy has high growth but revealed internal weaknesses. Economic growth is still relatively high but tends to slow down. The reason is that our country's growth model has some shortcomings. Growth is mainly due to increasing investment capital, the contribution of TFP to growth is low; labor productivity is still quite far from the regional countries (Table 1). The fact shows that the growth in width is narrowing, even some factors have been exploited, but the motivation of growth in depth (efficient use of resource, labor productivity, TFP have not improved much. Therefore, Vietnam needs to switch to a growth model based on productivity, quality and efficiency, in which the center is to improve labor productivity to increase the competitiveness of the economy and bring the country to fast and sustainable growth in the future.

In accordance with 2017 prices, productivity is estimated to be VND 93.2 million per worker (US\$4,159), an increase of VND 10 million compared to 2016. Vietnam's labor productivity is only 1/18th of Singapore, 1/16th of Malaysia and 1/3 of Thailand and China. there remains a big gap in labor productivity between Vietnam and regional countries. Vietnam's labour productivity currently stands behind almost all countries in Southeast Asia, including Laos. In 2016, the average productivity of a Vietnamese employee reached \$9,894 per person, equalling 7 per cent of Singapore, 17.6 per cent of Malaysia, and 36.5 per cent of Thailand.

The number of employed laborers in Vietnam increased from 53.3 million in 2016 to 53.7 million in 2017. Employed laborers in agriculture, forestry, fishery decreased from 22.3 million in 2016 to 21.6 million in 2017, while industry and construction saw an increase from 13.2 million in 2016 to 13.8 million in 2017. Services also witnessed a growth from 17.8 million in 2016 to 18.3 million in 2017. Workforce between the ages of 15 and 39 years currently accounts for nearly half of the total labor force in Vietnam. The share of trained workers within working age in 2017 was estimated at 21.5 percent, higher than 20.6 percent in 2016. Urban areas accounted for around 32 percent of the employed laborers in reality, 70 per cent of

equipment, machinery, and infrastructure in Vietnamese workshops are backward, which hinders productivity

**Level and growth rate of Vietnam's labor productivity, 2006-2017**



**Figure 1: Growth rate of Vietnam’s labor productivity, the period 2006 – 2017**

**Table 1: Labour productivity of Asian countries in 2017**

Nation	Productivity (1000 USD)	Compare to Vietnam (VN = 1)	Nation	Productivity (1000 USD)	Compare to Vietnam (VN = 1)
Singapore	132,8	12,1	Thailand	29,9	2,7
Taiwan	99,2	9,0	Indonesia	25,7	2,3
Japan	74,2	6,7	China	26,8	2,4
South Korea	72,7	6,6	Philippines	19,4	1,8
Malaysia	59,1	5,4	Vietnam	11,0	1,0

*Source: Total Economy Database*

(Labor productivity is calculated in GDP according to purchasing power equivalent at fixed price in 2011/number of employees)

**Table 2: Productivity increase rate period 2005-2015 of Asia countries**

<b>Nation</b>	<b>Productivity increase rate (%)</b>	<b>Nation</b>	<b>Productivity increase rate (%)</b>
China	7,2	Thailand	3,1
Myanmar	6,0	Malaysia	1,8
Cambodia	5,5	South Korea	1,3
Vietnam	4,7	Taiwan	1,2
Indonesia	4,1	Singapore	0,7
Philippines	4,1	Japan	0,3

*Source: Total Economy Database*

**Table 3: Labour productivity on hour the year 2016**

<b>Nation</b>	<b>1000 \$/hour</b>	<b>Times</b>	<b>Nation</b>	<b>1000 \$/hour</b>	<b>Times</b>
Singapore	58,8	12,5	Thailand	13,1	2,8
Taiwan	47,5	10,1	Indonesia	12,4	2,6
Japan	42,9	9,1	Philippines	9,2	2,0
South Korea	33,6	7,1	Vietnam	4,7	1,0
Malaysia	26,2	5,6	Cambodia	2,4	0,5

(GDP according to purchasing power equivalent at fixed price in 2011/hour)

Increasing TFP is related to the application of technological innovation, improvement of management methods and workers' skills... Increasing capital and labor can bring economic growth in short-term, suitable with the first stage of industrialization. Increasing TFP is the source of long-term growth, focusing on quality of growth and sustainable development.

The trend shows that economic growth is gradually based on quality increase, instead of mainly due to increasing the number of inputs as the previous period. In 2016-2017 alone, TFP increased by 2.4%, contributing about 37.5% to economic growth. Based on data from the General Statistics Office in 2017, GDP is increased by 6.81%, capital by 7.7%, labor by 0.75%, growth rate of TFP by 2.63%, contribution of TFP increase to GDP growth of about 39.5%. In the period 2011-2017, TFP increase was 1.95%, contribution of TFP increase to GDP increase by 32.2% (Table 4).

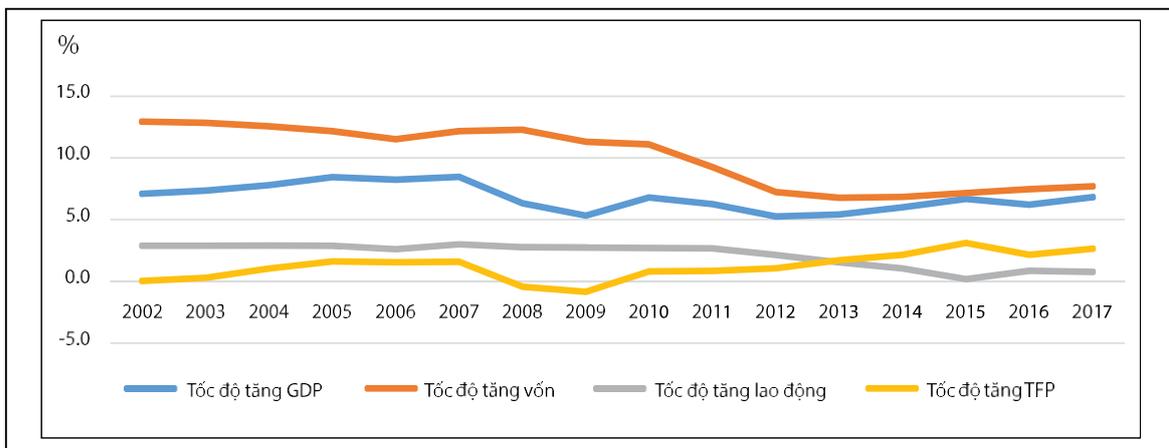
**Table 4: Increase rate of GDP, capital, labour, TFP and contribution of factors to GDP increase of Vietnam (2011-2017)**

Year	GDP increase rate (%)	Capital increase rate(%)	Labor increase rate (%)	TFP increase rate (%)	Contribution to GDP increase (%)		
					Capital increase	Labor increase	TFP increase
2011	6,24	9,26	2,66	0,85	60,6	25,4	14,0
2012	5,25	7,24	2,13	1,06	54,7	24,7	20,7
2013	5,42	6,77	1,53	1,71	50,9	16,9	32,2
2014	5,98	6,84	1,03	2,15	54,2	9,2	36,6
2015	6,68	7,15	0,18	3,10	51,3	1,5	47,3
2016	6,21	7,45	0,84	2,16	57,3	7,3	35,5
2017	6,81	7,70	0,75	2,63	54,7	5,8	39,5
averg 2011 - 2017	6,08	7,48	1,30	1,95	54,8	13,0	32,2
averg 2016 - 2017	6,51	7,58	0,80	2,40	56,0	6,5	37,5

*Source: Vietnam Institute of Productivity based on statistics*

Considering the longer period, in 15 years ago Figure 2 shows that the growth rate of capital and labor is slowing, while TFP has a faster growth rate. Overall, Vietnam's economic growth is relying heavily on quality, instead of increasing the amount of capital and labor. In the coming period, TFP increase will have higher speed and sustainable contribution to GDP growth.

**Figure2: Increase rate of GDP, capital, labour and TFP period 2002 – 2017**



*Source: Vietnam Institute of Productivity*

After a period of rapid capital increase from 2002-2010 with an average growth rate of 12% per year since 2011, the growth rate of capital has slowed, an

average increase of about 7.4% per year. Labor also increased slowly. GDP achieved a high growth rate from 2002-2007 with an average of about 8% per year and slowed since 2008, after the global economic crisis and due to the impact of real-estate market in 2011. Since 2013, GDP growth has tended to increase again. In 2017, GDP increased by 6.81% compared to 2016, higher than its of 2016 and, also a successful growth in difficult conditions due to the impact of economic world's fluctuations. The upward trend of TFP is one of the factors contributing to the overall and stable growth of GDP. During the period 2002-2010, TFP's contribution to economic growth was relatively low, although GDP still had a high growth rate. In particular, in 2008-2009, economic growth was entirely based on increased inputs of capital and labor without the contribution of TFP increase. Since 2010, when the growth rate of capital and labor slowed, the increase in TFP has played a greater role in economic growth.

The contribution of TFP increase to economic growth is gradually increasing in the recent period, indicates that inputs of capital and labor are being used more effectively in producing outputs. This is a positive change of the economy in the direction of focusing on growth quality such as improving labor quality, capital quality, applying technical advances and focusing resources on fields with higher economic efficiency.

The growth rate of developed countries has slowed, Japan has an averaged increase of 1% per year in the period of 2011-2016, Taiwan 2.3% and South Korea 2.9% per year. Thailand also has a slow growth rate during this period. Malaysia, Indonesia, Cambodia, Vietnam, Philippines and China still maintain high growth rates.

Singapore and Malaysia reduced TFP during this period, Japan, South Korea and Taiwan had slow growth in TFP. Vietnam, the Philippines and China are countries with high GDP growth and rapid TFP increase. High growth rate of TFP shows that technical science, technology, skills, labor skills, and management skills are clearly improved.

The contribution of TFP increase to Vietnam's GDP increase is 31% in the period 2011-2016, which is relatively high compared to Asian countries. However, the contribution of labor quality increase is quite low compared to other countries. Labor quality is an important factor in the growth. Increasing the labor quality contributes 30% to increase GDP in Japan.

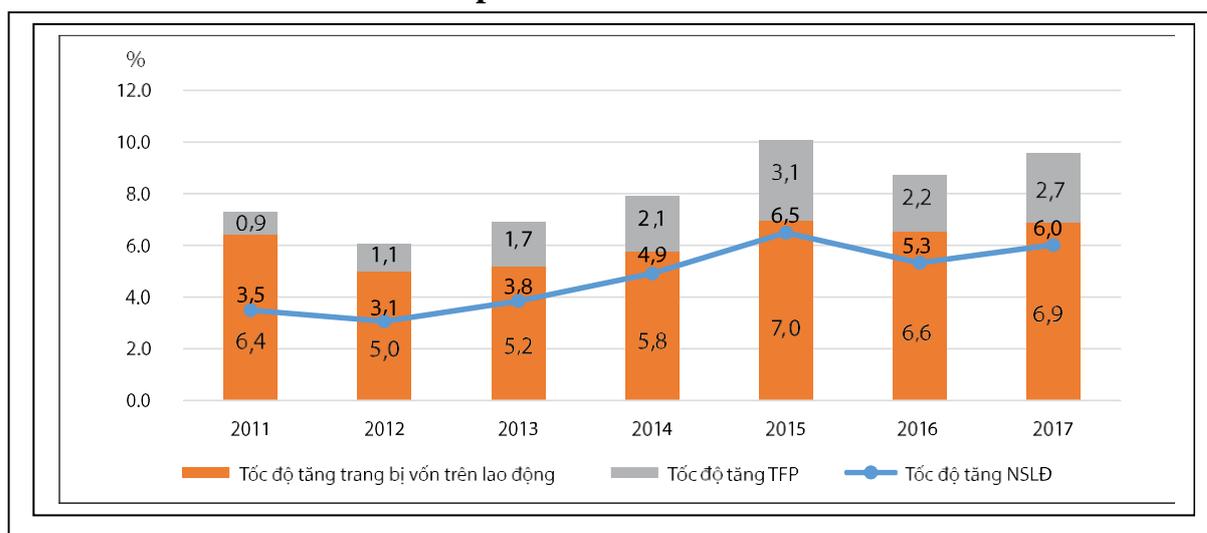
**Table 5: Increase rate of capital, labour and TFP of Vietnam and Asia countries the period 2011 - 2016**

Nation	ICT capital	Non-ICT capital	Labour quantity	Labour quality	TFP
Singapore	11,5	5,0	2,3	0,9	-0,7
Taiwan	3,4	2,3	0,4	0,8	0,6
Japan	1,3	1,0	0,0	0,5	0,2
Korea	5,4	3,7	0,8	0,1	0,6
Malaysia	6,5	6,3	2,2	0,9	-0,1
Thailand	3,7	2,9	-1,0	1,4	1,1
Indonesia	10,1	5,2	1,1	1,6	1,1
Philippines	9,1	5,2	2,0	1,0	1,6
China	4,4	11,4	0,3	0,5	2,5
Vietnam	19,2	6,2	0,3	0,5	1,5
Cambodia	13,4	9,0	1,3	0,8	0,9

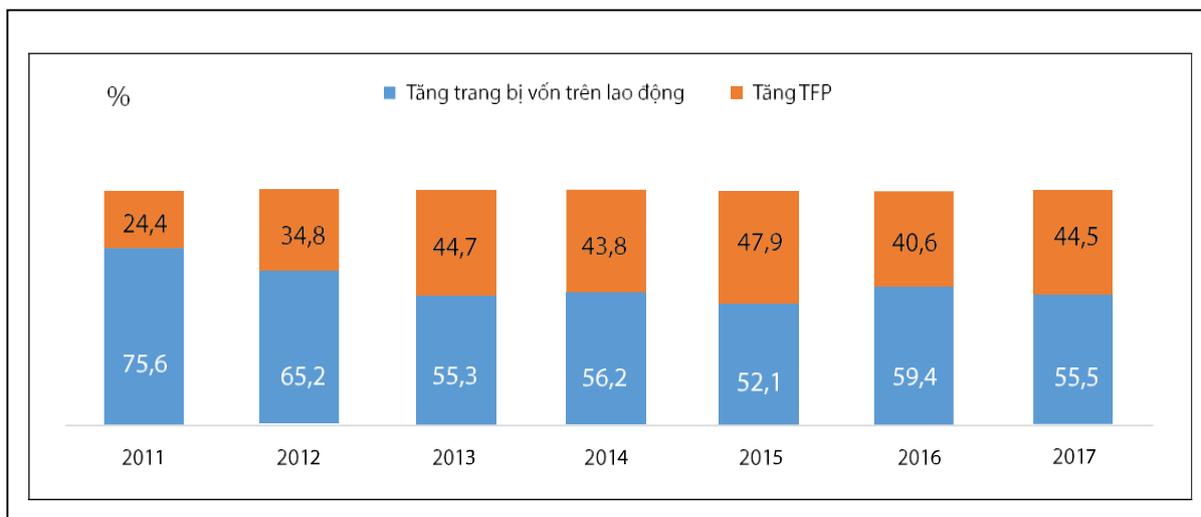
Source: Total Economy Database

Increased labor productivity means the value created by an enterprise, an industry or the whole economy calculated on a labor higher. The increase in labor productivity is due in part to increased capital equipment on labor and partly due to TFP increase. In particular, the growth rate of average capital equipment on labor in the period of 2011 - 2017 is about 6.1%, while TFP increases more slowly but is increasing steadily with a growth rate of about 2% per year, indicating the use of input resources more effectively (Figure 3).

**Figure 3: Increase rate of capital equipment on labour, TFP and productivity the period 2011 – 2017**



**Figure 4: Contribution of factors' increase to productivity increase period 2011-2017**



The contribution of increasing capital on labor to labor productivity increase still accounts for a higher proportion than the contribution of increasing TFP to it, the economy is still attracting investment capital for production development. Capital equipment on labor depends heavily on capital investment, thereby improving the working efficiency of workers and creating products and services with higher added value. Capital Investment create conditions for workers to equip more production tools and add new technology to improve productivity. Increasing capital equipment on labor contributes up to 60% to increase labor productivity, contribution of increasing TFP to labor productivity increase about 40% in this period.

The contribution rate of TFP to Vietnam's GDP growth is low, only 11.9% for the 2001-2005 period, -4.5% for the 2006-2010 period and 29% for the 2011-2015 period. Compared with some regional countries in terms of the contribution of TFP to economic growth, in the period 2001-2010 Vietnam reached a very low level of 4.3%, while Korea achieved 51.3%; Malaysia reached 36.2%; Thailand reached 36.1%, China reached 35.2%; India reached 31.1%. The contribution rate of TFP in GDP growth reflects the low level of awareness and management of Vietnamese labor force in the business, which cannot meet the requirements of modern production.

#### 4. Results

Why did Vietnam's TFP remain low compare with others countries? From current situation analyzed above, there are many causes:

First of all, labor management is not scientific in businesses and agencies. Management capacity is weak. Most of us are still managing our business by habit and discretion.

Secondly, the training system also carries a great deal of theory and lack of training in practical skills and updated professional requirements.

Thirdly, low labor quality. Vietnamese people are agile but do not persevere and have not the will to strive to reach the peak, soon satisfied with success. In addition, the interaction capability is also limited.

Fourthly, financial capacity is the main cause to limit technology innovation. This leads to deep regressions in productivity and quality in competition.

Fifthly, unbalanced competition pressure between industries, there is a monopoly in some sectors, not creating equality and healthy competition in the labor market.

## **5. Discussion**

Increasing investment in training skilled employees, modernising technology and manufacturing lines, and improving the management capacity of CEOs are the three major factors to increasing labour productivity in Vietnam. Thus, the basis for a productivity focused development strategy is to have a common understanding and agreement among key players (government, business, unions, media and others) on the principles of such a development strategy. These include that improvement in productivity create opportunities for employment growth in the long-term; the government must be prepared to provide support to workers and businesses to overcome short-term problems such as labour surplus in some companies and sectors; government, employers and labour should work together to implement productivity improvement measures; workers must be prepared to accept changes in the scope and requirement of their job, in addition to retraining for productivity improvement; and gains from improved productivity must be distributed fairly among businesses, workers and consumers.

To raise efficiency, TFP growth, the paper proposes some solutions to increase Vietnam's competitiveness through TFP increase as bellows.

Once there is an agreement on the principles, strong commitment and effective oversight from the highest level of leadership is critical to drive nation-wide efforts to improve labour productivity. It's essential to ensure strong collaboration among Government, private sector, trade unions, industrial associations, and educational and professional organizations. To translate principles to specific action, it is critical to create institutions, mechanisms and movements to drive and sustain productivity improvements. The establishment of a National Productivity Council could be a good model for Vietnam.

Resources need to be spent designing comprehensive and integrated strategies. It is important to take two-pronged approach which includes both sector- specific productivity improvement strategies and economy-wide programmes to support capabilities and enablers such as R&D, SMS productivity roadmap, inclusive growth

programmes. To enhance qualification of management staff; To raise technical level of workers and technical staff, enable them to stabilize their life and keep their mind on their work; The Government should support both to businesses and workers to understand any change, embrace it and adjust with it. Vigorous learning from best practices through international co-operation is encouraged.

To strengthen technological innovation to improve productivity. To enhance competitiveness by cost reduction via good management and technical application, technological improvement. Create a productivity fund to promote productivity improvement, technology acquisition, and R&D activities.

To implement well marketing activities, expand into new markets and maintain traditional markets.

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**CURRENT SITUATION AND EMERGING ISSUES FOR  
SUSTAINABLE DEVELOPMENT  
IN KEY ECONOMIC REGION IN NORTHERN VIETNAM**

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**Abstract**

*The Northern key economic region is one of four major economic regions in Vietnam that has an important role in its socio-economic development. Economic sustainability is crucial to sustainably develop the whole Northern key economic region. Economic sustainability is reflected in the harmony between the constituent elements: economic growth, highly efficient use of capital investment, increased productivity of social labor, contribution of total-factor productivity (TFP) to the overall growth rate improvement...*

*This paper analyzes the current main indicators of sustainable development in the Northern key economic region in Vietnam to point out the unsustainable aspects and thereby presents appropriate solution recommendations.*

**Keywords:** *Sustainable Development; Key Economic Region in Northern Vietnam; sustainable economic development.*

**1. Introduction**

The paper closely follows the rationale for sustainable development. Sustainable development is a development process that ensures all three pillars: economic sustainability, social sustainability and environmental sustainability. Applying to the industrial sector shows that, in order to develop industry in a sustainable way, it must ensure the speed and quality of high industrial growth, ensuring the contribution of industry to the economy in general. Besides, sustainable industrial development must also ensure increased employment, good settlement of social issues and environmental protection. Based on the above theoretical

framework, the article focuses on analyzing the process of industrial development in the northern key economic region of Vietnam, pointing out achievements, limitations and proposing solutions.

## **2. Method**

This paper uses an overall and comprehensive approach to collect and summarize the recent studies and reports which are related to this topic. All the data and figures are obtained based on the secondary data provided by some Vietnamese public organizations such as the Ministry of Industry and Trade.

## **3. Results**

### ***3.1. Reality of sustainable economic development in the Northern key economic region by principal indicators***

#### ***3.1.1. Economic growth***

According to local statistics and the national statistical yearbooks, GDP at current prices of the Northern key economic region reached 451,268 billion USD in 2010, accounting for 28,8% of the GDP and being nearly 4 times higher than that in 2005. Among four key economic regions of the country, the GDP of the Northern one ranks second in size, only to the Southern key economic region.

GDP growth rate of the whole Northern key economic region was 12.0% in the period 2001-2010, which is 1.65 times higher than the national growth rate of the same period (7.26%), of which, the number for the period 2006-2010 was 11.9% (1.7 times higher than the national average) despite the global economic crisis and sluggish national economic growth rate<sup>1</sup>.

Industrial and construction sector had the strongest growth in the period 2001-2010, at an average of 14.4% per year, followed by the services sector, with an average growth rate of 12.4% per year while the agricultural sector grew at only 3.3% on average, lower than the sector's national growth rate (3.6%).

With the highest growth rate of the three sectors, industry- construction of accounted the most for the growth of the whole region in the period 2001-2010, namely 50.7%. Service sector was responsible for 45% and agriculture 4.3%. Therefore, the industrial sector managed to replace services as the largest contributor to GDP growth, from 36.2% in 2000 to 45.5% in 2010. The share of agriculture decreased steadily by 10% in the whole period 2001-2010, from 19.2% in 2000 to 9.4% in 2010.

#### **Structural Transformation of Rural Economy**

Thus, the non-agricultural sectors has emerged in the region, making up more than 90.6%, which can be considered at the threshold of developed countries

in the world. Among provinces in the region, from 2001 to 2010, Vinh Phuc, Bac Ninh and Hung Yen had fastest in economic transformation thanks to high industrialization, especially the processing industry. Meanwhile, by 2010, the localities with high proportion of services are Hanoi (52.3%), Hai Phong (52.93%), and Quang Ninh (36.9%)<sup>3</sup>.

High economic growth is an important factor to the increase in GDP per capita from 418 USD in 2000 (more than 1.04 times the national average) up to \$ 1,468 in 2010 (1.24 times the national average), which is the second highest, only to the Southern key economic region's. When comparing its growth rates, structural transformation and growth of per capita GDP with those of the Southern key economic region and the country, the Northern key economic region has the better growth rate and the structural transformation of non-agricultural' sectors, but the GDP per capita is still low, much less than in the Southern key economic region (only by 0.7 times).

When comparing the GDP per capita in broader scope, namely between key economic regions of the country, the Southern key economic region is superior (13.5 million VND higher than the Northern key economic region's and nearly 20 million VND higher than nation's rate). However, considering GDP density per unit area of geographical territory, the Northern key economic region has the GDP per square kilometer or 29.8 billion VND, higher than that of the Southern key economic region and over 4,4 times higher than that of the whole country.

### *3.1.2. Incremental Capital Output Ratio (ICOR)*

With the status of a key economic region, and as an engine of the Northern economic development, the Northern key economic region has been paid much attention by the State. Besides, the amount of ODA which have been signed by the Northern key economic region in the period 2006-2010 reached 4,055 million USD. It has also managed to attract 3,799 FDI projects with total registered capital accumulated in effect through 2012 at 43.8 billion USD, accounting for 22.13% of the whole country.

The ICOR in the above table shows that the efficiency of investment to generate an extra GDP unit of the Northern key economic region is substantially higher than the national average. This reflects the region's fruitful use of capital investments in different economic sectors, particularly in services and industrial sectors. In 2000-2008, the Northern key economic region spent over 50% on industrial investment. The significant increase in FDI and capital from the private

sector in recent years is the main cause. With a lower ICOR, it has gradually become an attractive investment destination for investors.

### *3.1.3. Labor productivity*

Labor productivity in the region grew from 11.7 million VND per person in 2000 to 21.7 million VND per person in 2005 and 41.9 million VND per person in 2009 (at the fixed prices of 1994).

However, labor productivity in the region is just slightly higher than the average levels of the country. The growth rate of labor productivity is uneven, and even tends to decline and shows no apparent breakthrough compared to that of the whole country.

### *3.1.4. The proportion of capital, technology and TFP contributed to economic growth*

The comparison of the contribution of the inputs in Northern key economic region with that of the country and the key economic regions in general and the Southern key economic region from 2000 to 2010 shows that the Northern key economic region has the highest contribution of TFP to GDP growth, at 25.6%. The percentage for the country was only 12.5%, which is 13.1 percentage points (-13.1%) lower than in the Northern key economic region. The number for key economic regions in general (4 regions), was 21.7%, equivalent to 3.9 percentage points lower (-3.9%) and even in the Southern key economic region with dynamic development, the percentage contribution of TFP was just 15.2%, which is 10.4 percentage points lower than that in the north (-10.4%).

## **3.2. Signals of economic instability in the Northern key economic region**

### *3.2.1. Unsound growth*

Continual growth has been pretty solid over the years but not commensurate with the potential advantages of the region. It did not meet the planning objectives outlined and development requirements of the country. The economic capacity created is still modest. Despite growth in the period 2000 - 2010, its GDP per capita and proportion of the country's GDP is lower than the Southern key economic region. Low GDP per capita has limited ability to accumulate for development investment and led to labor migration from the north to the Southern key economic region. GDP per capita is uneven among the region's localities shows the increased divergence and inequality between localities, affecting their harmonious development.

### *3.2.2. Growth model at a low level*

The region is low in labor productivity, gray matter volume, and technology usage in all economic sectors. Its GDP growth is generally characterized by the

growth in width, which is intensive in capital and labor. Compared with other countries in the world, the structure of the TFP contribution to the growth in the Northern economic region is lower than that in many countries. For example, in Ireland, the structure contribution is much higher (42.6%, compared with 26.3%). This shows that those economies began to go into depth since the years of 1955- 1973, with the slow growth of investment in capital and labor but the TFP accounted for a good proportion in overall GDP growth. If compared to the developing countries and territories which later became the newly industrialized economies (NIEs). the Northern key economic region in particular and Vietnam in general lags far behind in terms of structural contribution of TFP to GDP growth. For example, in Korea, the contribution of TFP to GDP growth between 1960 and 1973 reached 42.3%, Hong Kong (1960-1970) 47%, Taiwan (1955-1960) 59.5%.

Thus, in the 10 years period (2001-2010), the Northern key economic regions in the North in particular and the country in general has a much lower structural TFP contribution to GDP growth than the average levels of emerging countries from the years 1955 - 1973 (the average TFP contribution of developing countries was of 31.7% compared to 12.5% of Vietnam, and 26.3% of the Northern economic region)<sup>4</sup>.

*3.2.3. The proportion of the value and the deep processing industry in GDP increases, but at low pace while competitiveness is limited and supporting industries have not developed*

The proportion of non-material production sectors and industries with high labor productivity, and technological content and gray matter has been on the rise while the percentage of low productive sectors has been down. These tendencies have developed in recent years, which have not been significant, but somewhat marked structural economic transition more in depth and quality. However, the key sectors have not been as successful as expected in reality. The ratio of national value in many commodities is low, at only 20 - 25 %. Their poor competitiveness thus means less profits for the people in the country and the region, making it less able to accumulate from the internal economy. The investment in the development of the region's flagship products has not been put adequate attention.

Apart from the relatively good equipment of a number of areas such as telecommunication, consumer electronics manufacturing, power generation, cement, food and consumer goods production, the development of sciences and technologies in agriculture and fisheries is very weak. Meanwhile, there are not many high-tech industries which account for only 20.6% (whereas the number for Thailand is 31 %, Singapore 73%, Malaysia 51%); the supporting industries as a breakthrough for other industries to develop do not meet the requirements.

The region's technology level is low, consuming large volumes of raw materials and energy, which results in higher prices in numerous products, making them less competitive compared with those from other countries in the region. In 2010, the total power consumption of the Northern key economic region was 19.801 billion kWh, equal to 21.6% of national consumption. If taking electricity consumption per capita into consideration, the number for the Northern key economic region was nearly 1,370 kWh, nearly 1.3 times higher than the average consumption or the country. However, in terms of power efficiency, the region was poorer than the country in general. To generate 1 USD of GDP, the Northern key economic region consumes 0.92 kWh of electricity, while the national figure is just 0.89 kWh.

#### *3.2.4. Competitiveness of the region's localities area are*

From 2005 to date, the Chamber of Commerce and Industry of Vietnam have been investigated and evaluated the competitiveness of the localities at provincial level throughout the country. The results show that the localities of the Northern key economic region do not have good rankings, except from Bac Ninh which ranked second in 2011 and 10th in 2012. Meanwhile, some localities of the key economic region of Mekong Delta and Central have been achieved high rankings in 2012, such as An Giang (2/63), Kien Giang (6/63), Binh Dinh (4/63).

#### *3.2.5. Transportation services are diverse and fast growing but have not forming a modern and comprehensive logistics system*

The Northern key economic region is the second largest transportation hub after the Southern

key economic region, accounting for about 24% of freight and 10% passenger transport volume of the nation and 80-95% of freight and passenger of the Red River Delta region. Shipments through the ports and passengers through the airports of the region is about 30% of the country. However, the quality of transport and logistics services is not high, with low competitiveness, unreasonable prices and poor connection between the modes of transport because the multimodal transport is just at an early stage and underdeveloped. Traffic accidents are high and complicated.

## **4. Discussion and Conclusion**

It is certain that the signals of unsustainable economic development in the Northern key economic region in the past years is due to the absence of in-depth growth factors such as the high-tech sciences and quality of human resources. In addition, the current policy of the local authorities is not attractive enough to draw investment capital. The lack of capital or the invitation of investment partners at all costs has prevented the addition of in-depth growth factors which somewhat reduces

the attractiveness to investors in the region. So, to ensure sustainable development in economic terms of the Northern key economic region in the coming years, the immediate needs are to focus on the following measures:

First, promote the attraction and improvement of the efficiency of capital investment in the region.

It is necessary to review, add, adjust and build new mechanisms and policies to continue to improve the investment environment; to move quickly from economies based on factors of production to an economy based on investment and technologies; to keep a balance between investment projects in the localities in accordance with priorities, focuses, unified plans and on the basis of planning situations and conditions or residents, local management, human resource potential, resource reality and environment. Besides, there should be tax policy, policy and management mechanisms for corporate finance, monetary policy that are appropriate to promote structural transformation towards modernization.

It is important that the adjustment of investment structure to achieve the objectives of economic growth associated with social goals, creating favorable conditions for the exploitation of the strengths of all internal resources and economic components and the outside capital; in which focus should be placed on an adjustment of state budget, spending an adequate budget amount for development of human resources and social security, creating jobs, reducing poverty, ensuring minimum expense of 1% total budget for environmental protection.

Then, it is also crucial to complete and synchronize the legal framework for the management and use of ODA to ensure transparency on the principle of decentralization of powers and tied responsibilities; to build partner relationships, harmonizing procedures for Vietnam's donors; raising proper awareness of the role and nature of ODA at all levels; to ensure the national activeness and autonomy; to have the broad participation of community during the movement and use of ODA; to train staff for developing ODA policy.

More FDI should be attracted to invest in improving the quality of labor and for the needed projects, mostly the infrastructure development projects in rural areas through special incentives such as maximum preferential rental rates of land and water surfaces, sea surface. And supports should be given to Vietnamese partners who have the desire to form a joint venture with overseas companies.

Second, there is the need to rapidly develop high quality human resources for the region.

To meet the requirements of sustainable economic development in the coming years, it is required to improve the quality of human resources with the main contents:

the structural transformation of labor. must be organically associated with the structural economic shifting. There can be no high quality economic growth and sound economic structure without a workforce with enough quality for the sectors, industries and regions. It is remarkable to meet the requirements of qualified labor for various economic sectors, both capable of taking advantage of full employment, creating jobs, improving efficiency and quality of labor in order to improve the quality and competitiveness of products at lower production costs, and thus generate higher income for workers. More investment should be given in education and vocational training to enhance the specialization and skills of the workforce. More focus should be on training the management forces to meet the development needs of key economic sectors and on training the workforce in rural areas who have been non-agricultural. The development of a team of scientists and experts as a core force to carry out research and promote technology transfer in the sectors and industries in the localities should be given priorities; it is important to increase deep investment and modernization of leading research facilities on sciences and technologies, or applied research facilities of high technology to create favorable conditions for scientists and experts to promote capacity. Develop policies on training, fostering and attracting talents in all fields and professions to serve socio-economic and cultural development; policies to encourage

creativity and responsibility of the individuals in starting a career and their contribution to the society; and policies to encourage and support young people to start a career and join social activities.

Third, develop a strong scientific and technological basis.

There is a need to quickly raise the level of production technology on par with the regional countries' and narrow the gap in the level of basic science research for developed countries, focusing on the field of research, transfer and application of technology to deliver a higher contribution of TFP; in which more focus should be on completing institutional environment to promote innovation and technology transfer so that the speed of technological innovation can be at 15-30% on average per year. There should be more in-depth investment in research facilities, science labs and industry-leading technologies; encouraging the development of institutions who do research, consultation and technology transfer for production and design, fabrication and technological advances and new applications, testing and quality assessment and organization of all economic sectors.

Research should be promoted to develop scientific arguments for the planning of development policy, strategy and tactic; to enhance the application and transfer of environmental technology, clean technology and environmentally friendly development treatment technologies and technologies of recycling and reusing waste;

Strengthening the application of information technology, computerization of the state apparatus at district and commune levels; building and scaling models of clean production.

It is also necessary to encourage and support research activities, deployment of science and technology in all sectors; with priority and incentives to support research, inventions and technical improvements to enhance labor productivity, efficient management, quality and competitiveness of products; to encourage overseas Vietnamese scientists to return home, and international experts to work in the region's localities.

It is important to develop and implement programs of scientific research and application of advanced technology in all industries of agriculture, industry and services, with a focus on developing new technological sectors (agro-processing, machine building, electronics, automation) for export; to perform the contractual forms in which the State and corporates make orders and sign contracts with the scientific and technological organizations to carry out the tasks of research, transfer and application of technology.

It is then crucial to speed up the construction and operation of the Hoa Lac hi-tech park to promote the development of information technology; the development of a number of high-tech industrial park in Hanoi, Hai Phong, Bac Ninh and Vinh Phuc; and other tech parks in the region's localities.

**Notes:**

1. Ministry of Planning and Investment, 2011, Report on Master Plan of Socio-economic development for the Northern Key Economic Region to 2020, with a Vision to 2030, Hanoi.

2. The periods of 1996 - 2000, 2001 - 2005, and 2006 - 2010 (%).

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# THE UNITY AND CONTRADICTION IN THE DEVELOPMENT OF THE INDUSTRIAL ZONES AND NEW RURAL AREAS: FROM PRACTICE TO THE ROLE OF THE STATE

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## **Summary**

*By the appropriate scientific method, the article has contributed to complete the theory of the development of the industrial zones and new rural areas. From there, analyze the unified and contradictory relationship between these two processes. At the same time, the article shows the need for a state intervention role. Thereby, the article proposes some corresponding solutions*

**Key words:** *industrial zones, new rural, the role of the state,*

## **1. Introduction**

The 10th Congress of the Communist Party of Vietnam affirmed that “For now and for many years to come, the issue of agriculture, farmers and rural areas is particularly important” is a strategic issue in the process of socio-economic development, contributing to promoting economic growth, serving as a basis for political stability and security and defense; is an important factor to ensure the sustainable development of the country in the process of industrialization and modernization in the direction of socialism. It is also the process of building new rural areas (NRA) with the development of industrial zones (IZs) nationwide. That should be studied in both theoretical and practical terms.

## **2. Targets, methods**

### **2.1. Target**

- (1) Contribute to improve the theory of the development of IZs and NRA
- (2) Analyze the unified and conflicting relationship between the two processes.
- (3) Indicate the need for the intervention role of the state and propose some corresponding solutions.

## 2.2. Methods

The article uses a combination of appropriate methods: qualitative research incorporates some of the quantitative research; unity between history and logic; between analysis and synthesis; between specific and abstract, ... to achieve the goal

## 3. Results

### 3.1. Development process of IZs and NRA

#### 3.1.1. Development of IZs

In each country, the IZs has different economic activities and names. The Government's Decree No. 29/2008/ND-CP dated March 14<sup>th</sup>, 2008 stipulates that: The IZs is specialized in producing industrial goods and provides services for industrial production with defined geographical boundaries, to be established according to the conditions, order and procedures prescribed by the Government. IZs is a specific object of state management.

The IZs is formed and developed in association with the renovation of the country. In the early 1990s in the 20th century, the policy of developing IZs was promulgated. Starting by the establishment of Tan Thuan Export Processing Zone in 1991. The model of the IZs has achieved important achievements, contributing positively to the cause of industrialization and modernization of the country: attracting investment capital in the country and abroad to develop the economy; boosting exports, increasing revenues and reducing foreign exchange spending and contributing to increasing budget revenues; receiving advanced technics and technologies, modern management methods and stimulating the development of supporting industries and enterprises in the country; creating jobs, reduce poverty and development of human resources; promoting the modernization of the infrastructure system and the nucleus for the formation of a new urban center; development of IZs in association with environmental protection. The development of the IZs is concerned by the whole society, with the good situation.

**Table 1. Status of the development of IZs<sup>1</sup> (TL5)**

Overall						Allocation						
Number of IZs	Natural area (thousand ha)	Rentable Area (%)	Occupancy Rate (%)	Number of IZs has come into operation		Number of IZs is being land clearance	South East Area		Red River Delta		South West Area	
				Number of IZs	Occupancy Rate %		Number of IZs	%	Number of IZs	%	Number of IZs	%
325	94,9	67	51	220	73	105	111	34	85	26	52	16

<sup>1</sup> Based on Department of Management of Economic Zones, Ministry of Planning and Investment (2017), "Summary data of activities situation in the IZs in the whole country," Hanoi.

**Table 2. Attract investment capital into IZs at the end of 2016<sup>2</sup> (TL5)**

FDI - Foreign Direct Investment				Domestic Direct investment			
Number of projects	Total registered investment (Billion USD)	Performing investment (Billion USD)		Number of projects	Total registered investment (thousand billion dong)	Performing investment (thousand billion dong)	
		Quantity	Rate %			Quantity	Rate %
7.013	111,4	67	61	6.504	710,6	358	51

**Table 3. Production achievements of IZs in 2016<sup>3</sup>**

Total revenue (billion USD)		Export (billion USD)		Import (billion USD)		<i>Payment to budget</i> (thousand billion dong)	
Achieved	Compare to 2015 (%)	Achieved	Compare to 2015 (%)	Achieved	Compare to 2015 (%)	Achieved	Compare to 2015 (%)
145,5	109	96	108	94	107	110	106

In general, the IZs increasingly plays an important role in the socio-economic development of the locality and the whole country

Each IZ has an infrastructure system which is relatively synchronous and has a long term value, contributing to the modernization of the infrastructure system throughout the country and increasingly showing an important role in the socio-economic development of localities and the whole country in general.

The total number of accumulated employees in IZs, CUs as of 7/2016 is over 3 million laborers<sup>4</sup>.

The operation of the IZ has contributed greatly to the growth of the whole industry, as a motive force for the development of enterprises in the province as well as an important contribution to local growth and exports.

In the industrial zone, on average 1 hectare of industrial land generates 4.62 million USD in export turnover, higher than the national average (2.12 million USD per hectare).

<sup>2</sup> As above Department of Management of Economic Zones, Ministry of Planning and Investment (2017), "Summary data of activities situation in the IZs in the whole country," Hanoi

<sup>3</sup> Report of the Department of Management of Economic Zones of the Ministry of Planning and Investment in 2017

<sup>4</sup> PV. "Industrial parks and economic zones contribute to the economic restructuring", Posted on: <http://tapchitaichinh.vn/nghien-cuu-trao-doi/khu-cong-nghiep-khu-kinh-te-gop-phan-chuyen-dich-co-cau-kinh-te-88038.html>, ngày 16/08/2016

The IZs have contributed to the training of human resources, job creation, raising incomes and qualifications of laborers, contributing to increasing local budget revenues. The IZs have a spillover effect on industrial services activities, financial – banking services, transportation, post and telecommunication, speeding up urbanization, creating equal development among regions and completing the local socio-economic infrastructure. **Particularly in Hanoi**, IZs in Quarter 1/2017, the total number of employees working in industrial zones was 144.968 people. In Bac Ninh, in 2017, industrial zones create jobs for 285.000 workers.

### *3.1.2. The process of the development of NRA*

The national target program for new rural development is a comprehensive rural development program, covering a wide range contents related to the fields of economic, culture, sociality and environment, basis political system and the social security and order in the countryside; to build modern socio-economic infrastructure in rural areas; to build economic structure and rational organization of production; linking agriculture with fast-growing industry and services; ...

Criteria for recognizing new rural communes (19): planning, transportation, irrigation, electricity, schools, cultural facilities, rural markets, post offices, residential housing, incomes, poor households, regular employment rate, organization form of production, education, health, culture, environment, strong social and political system, social security and order.

By the end of 2017, the whole country has 3.069 communes (accounting for 34.4% of the total number of communes in the country, while the target for 2017 is 31%) is recognized as standard NRA.

In which, 492 communes have met the standard under Department of national criteria for NRA communes in the period 2016 - 2020. Currently, there are 113 communes under 5 criteria in the country. There are 43 district-level units in 24 provinces/cities under central met the NRA standard<sup>5</sup>. In particular, localities have developed about 21.000 new advanced production models: developing clean agricultural production under the link chain; application of economical and efficient irrigation system; trade village, flower village associated with ecotourism, homestay; linking with plants of medicinal and high value winter crops...

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<sup>5</sup> Ministry of Planning and Investment, "Report of the Ministry of Planning and Investment on the results of the implementation of the two National Targeted Programs for NRA Development and Sustainable Poverty Reduction in 2017"

### ***3.2. The unified and contradictory relationship between the development of IZs and NRA***

#### *3.2.1. The Unity*

##### *3.2.1.1. Rural areas are the main areas of industrial zones.*

In Vietnam, rural areas are a necessary and sufficient condition for IZs development. The success of NRA is favorable condition for the development of IZs

##### *3.2.1.2. Positive impacts from IZ development to NRA building.*

(i) The contribution of the IZs to the growth of rural economic, local economy, directly or indirectly contributes to the implementation of 11 contents of building of NRA.

(ii) IZs are a great motivation of industrial production and local exports. In 2008, in Hanoi, was 1.624 million USD accounted for 26.5% and in Quang Ninh was 136 million USD, accounted for 45.8%..... The IZs contributed to the local economy by land use unit, each hectare of IZs land brought higher industrial production value (over 3 million USD in Vinh Phuc and 737 thousand USD in Quang Ninh).

(iii) The development of IZs in the regions and areas is accelerating the speed of urbanization and modernization of infrastructure in and outside the IZs or the formation of new urban areas in locality. The infrastructure of the IZs has been improved; stimulating local economic development, increasing the demand for auxiliary services, contributing to develop business activities for business and services establishments in the region.

The IZ attracts new investment and creates favorable conditions for businesses to expand their businesses, increase their production capacity and competition, or move out of densely populated areas, helping localities solve their pollution and environmental problems, to regenerate and form new land funds, to form social infrastructures in service of the laborers' and inhabitants' lives such as dwelling houses, schools and hospitals.....

(iv) IZs contribute to the economic restructuring of the locality. IZs have contributed greatly to increasing the proportion of industries and services, reducing the proportion of agriculture in the country in general, and in the localities with IZs. For example.....

**Table 4. The change in the Northern key economic region <sup>6</sup>**

No.	Fields/year	2000	2005	2009
1	Industry	37,1%	42,2%	44,4%
2	Agriculture	17,8 %	12,6%	10,0 %
3	Service	45,1 %	45,2%	45,6%

This confirms that: the contribution of IZs to local economic development is quite positive and effective. There are many other positive effects to be appreciated. The development of IZs should be simultaneous and linked to the NRA development process. Investment in IZs should be considered as the main investment for rural development, essentially, rural industrialization. That is only effective when there is intervention by the State. In fact, on June 4<sup>th</sup>, 2010, the Government issued Decree No. 61/2010/ND-CP on policies to encourage enterprises to invest in agriculture and rural areas with many conditions and incentives for: land, investment support, human resources training.

*3.2.2. Contradiction - negative impact. Negative impact is also quite serious, requiring careful consideration.*

#### 3.2.2.1. Negative impacts

(i) Land loss of the laborers and employment are relatively small, with a growing trend

**Table 5. Examples in Hung Yen until the end of 2008<sup>7</sup>**

Criteria	Total	Van Lam	My Hao	Yen My	Van giang
1. Laborers have to relocate for the development of IZs	29.759	9.400	5.593	5.735	10.705
2. Number of employees has been solved employment problems	12.645	5.782	3.889	2.608	1.962
3. Number of employees working in the IZs	8.500	2.683	1.898	1.670	300
4. Number of employees has not been solved employment problems	17.114	3.618	1.740	3.127	8.788
5. Unemployed rate (%)	42,5	61,5	69,5	45,5	18,3
6. The rate of relocated laborers working in the IZ (%)	28,6	28,5	33,9	29,1	2,8

<sup>6</sup> Based on Coordination Division for Key Economic Zones, MPI (2009), "Socio-economic data of key economic regions nationwide", 2009, Hanoi.

<sup>7</sup> Based on Hoang Ha, Ngo Thang Loi, Vu Thanh Huong and some other authors (2009), "Solutions for settlement of employment, residential housing, ensuring life for employees to develop IZs in Hung Yen province in the process of industrialization and modernization" ", Labor Publishing House, Hanoi.

The number of laborers who lost land for the communes' IZs was 42.5%; who working in Izs accounted for 28.6% (8.500 people), accounted for 70% of the total number of laborers has been solved employment problems and 65% of the total number of employees working in the IZs.

(ii) Localities have more complex IZs, the security order decreases. Due to the IZ attracts a lot of laborers, the scale of population increases dramatically; some workers are also objected to the search for the law; residential place, complex accommodation, lacking of management needed. Some local people lose their land and unemployment leading to theft, social evils.....

The sociological Investigation in Hung Yen, the respondents affirm the stable local security situation is 41% and good is 46%. In which, Yen My, Kim Dong, Hung Yen Commune and An Thi have the results of 50%.....

(iii) Underlying the danger of insecurity, un-orderly due to strikes, protests, conflicts with employers, ... (Source from document 2); v.v....

#### 3.2.2.2. Causes of the above symptoms

(i) The rapid development of IZs exceeds the forecast, making the policies quickly obsolete. The amendment and supplementation of new mechanisms and policies for IZs have not yet been regularly implemented; The specification and implementation of guidelines and policies on IZs development is slow and lack of synchronism between sectors and levels.

(ii) Planning work is less predictable and lack of actual survey.

(iii) Links between central and local; between the state agencies managing the development of IZs and NRA in the process of developing and implementing the loose policy on related issues; There is no coordination mechanism between the two parties.

(iv) There is no mechanism to control the power of the relevant authorities.

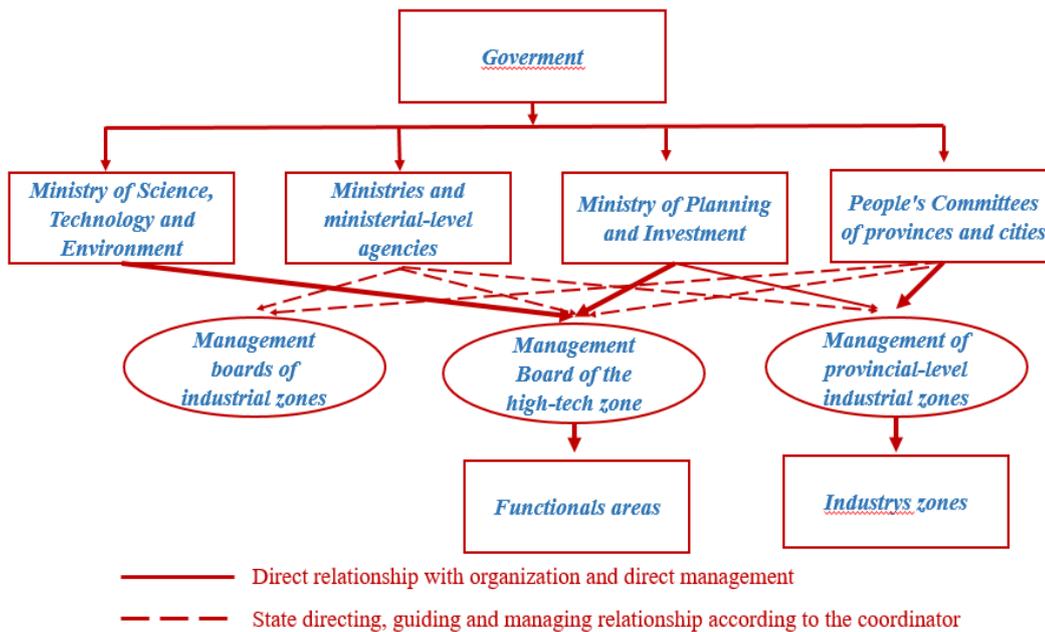
(v) The very basic reason is that the role of state intervention in these processes has not been seriously and properly implemented.

### ***3.3. The role of the State in solving the relationship between the development of IZs and NRA***

#### *3.3.1. State management system in the development of IZs & NRA*

##### *3.3.1.1. State management system in the development of IZs*

Decision No.99/2000/QĐ- TTg dated August 17<sup>th</sup> 2000 of the Prime Minister, transfer functions of the Vietnam Industrial Zones Authority to the Ministry of Planning and Investment and Decree No.36/CP dated April 24<sup>th</sup> 1997 of the Government and other legal documents stipulating the State management operation structure for IZs. (See the picture below)

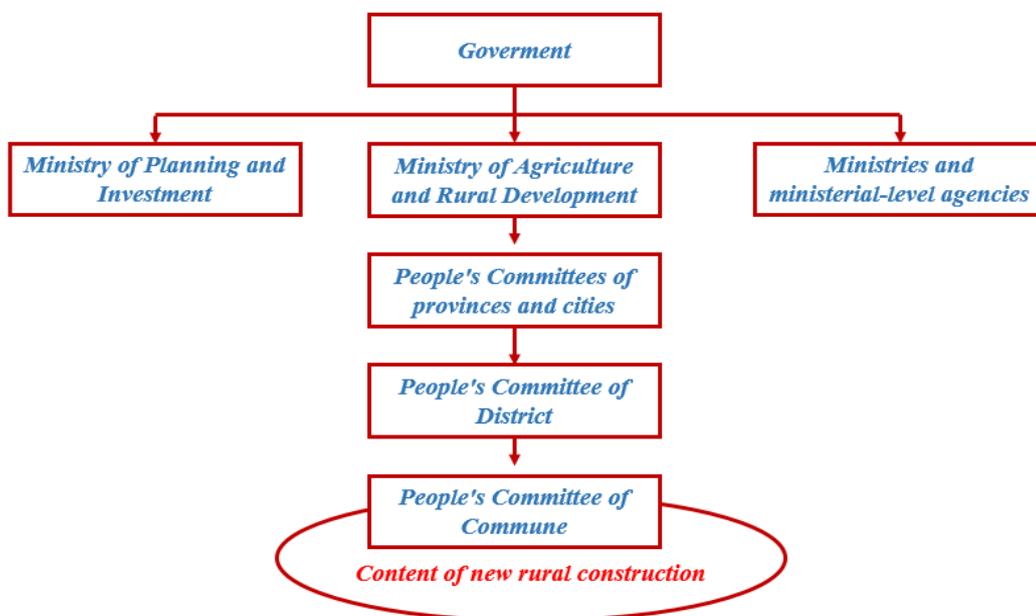


Source: self-built authors

**Diagram 1. Diagram of state management structure for development of IZs**

### 3.3.1.2. State management system in the development of NRA

Decision No. 800/QĐ-TTg dated June 04<sup>th</sup> 2010 of the Prime Minister and other legal documents stipulating: State management agencies to implement the contents of development of NRA including the Ministry of Agriculture and Rural Development to assume the prime responsibility and coordinate with the ministries and the provincial, district and commune People's Committees. (See the picture below)



Source: self-built authors

**Diagram 2. Diagram of state management structure for development of NRA**

As a result, state agencies at all levels are the ones managing both above mentioned processes.

Therefore, in the management and administration of these agencies, there should be a harmonious combination of activities in order to create conditions on the social legal basis to benefit both the process. The role of the state in managing this relationship including: building the infrastructure; Training labor resources; improving the administrative procedures; Inspection and supervision

### *3.3.2. Solutions to promote the role of the State*

#### 3.3.2.1. Direction Opinion

(i) Development of IZs and NRA and in the spirit of sustainable development for the benefit of the country

(ii) Policies for development of IZs and NRA to promote advantages and support for each other, limit the direction of adverse effects.

#### 3.3.2.2. Solution System

(i) Solutions need to be implemented immediately:

a. Strengthening linkages between agricultural and industrial enterprises and develop local support industries.

b. Completing training and employment policies for local IZs.

c. Improving both the quality of life and the spirit of workers in IZs and local people; combining cultural exchanges and other activities, promoting the role of cultural spread from IZ to NRA and vice versa

(ii) Long term solution

a. Establish mechanisms and laws for linking and coordination of activities in both processes, firstly from the activities of the Management Board of the Industrial Zones and the State management unit in the development of NRA.

b. Establish mechanisms and laws to coordinate benefits, and control power with affiliated agencies

d. Actively improve the rule of law state of tectonic state

c. Planning IZs towards models of ecological and park IZs. Consider Izs as embryo germs to form future urban and smart metropolitan areas when IZs have run out of historical missions.

## **Discussion and Conclusion:**

In the above article, we have only realized the task of discovering and raising a problem that is still under discussion from both theory and practice in the process of development of the IZs and NRA. In which, the state intervention on the one hand is to prevent, limit the harm caused by the above processes, on the other hand to intervene to support these two processes. By that, the country is strong in the spirit of “rich people, strong country” %

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# FACTORS AFFECT THE COMPETITIVENESS OF VIETNAMESE COMMERCIAL BANKS IN CONTEXT OF ASEAN ECONOMIC COMMUNITY

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## **Abstract**

*Banking competitiveness has long been a hot topic, attracting attention not only of scholars, researchers, but also of interest of bank administrators. Especially in the context of the integration of the ASEAN economic community and the explosion of the industrial revolution 4.0, the competition between commercial banks has become more and more intense not only within the country but also spread to the international scope. Many empirical studies have shown that the competitiveness of banks is affected by many different factors. Therefore, the project has conducted a survey of 278 officers and employees working in 10 typical commercial banks in Vietnam (BIDV, VCB, Vietinbank, Agribank, Techcombank, VIB, MSB, LPB, ACB, MB) to analyze and assess the influence of factors on the competitiveness of Vietnamese commercial banks. The article conducts testing of Cronbach's Alpha coefficients, Exploratory Factor Analysis (EFA), Pearson correlation analysis and regression analysis; The research results showed that all respondents confirmed all 7 factors including: Financial capacity, technological capacity, service fee, brand of the bank, transaction network, service quality, intellectual capital are positively affecting the competitiveness of Vietnamese commercial banks. With these research results, the article will be a scientific basis for the State management agencies to have support policies to improve the competitiveness of Vietnam's banking sector during the ASEAN community integration period.*

**Keywords:** *Competitiveness, influencing factors, Vietnamese commercial banks.*

## **1. Introduction**

Vietnam officially became the seventh member of ASEAN since July 28, 1995 and since then the competitive pressure in the banking sector has begun to appear and increase significantly. Over the past 20 years, Vietnamese commercial banks have actively sought and implemented many measures to improve their competitiveness before the requirements of the ASEAN economic community integration and international economic integration. However, after more than 20 years of joining

ASEAN, Vietnamese commercial banks still show many of their weaknesses such as: Financial capacity is low; Competitiveness is not high; Management capacity and technology are weak; Reforms are slow and lack transparency. Under this situation, the Government issued the Decision No. 254/QĐ-TTg dated 1 March 2012 on approving the project of restructuring the system of credit institutions in the 2011-2015 period. Over 5 years of implementing restructuring, the system of Vietnamese commercial banks has obtained some certain successes such as: ensuring the liquidity of the system and creating conditions for macroeconomic stability; controlling weak commercial banks through mergers or allowing to restructure themselves; Establishing a debt trading company VAMC to allow bad debt settlement of credit institutions to stabilize operations. However, there are still many shortcomings that need to be solved to strengthen the health of the banking system such as: Bad debt is still high; Cross-ownership issues, cross-investment in credit institutions is still lack of transparency; Charter capital in some joint stock commercial banks does not reflect the true nature, leading to the risk of controlling and manipulating banking activities. This affects the operation and competitiveness of banks. Moreover, with the explosion of the 4.0 industrial revolution that has pulled the world economies together and the distance has been eliminated, the playing field will become more and more equal. Vietnam is not an exception, in the process of integrating into the world economy, Vietnamese commercial banks have many opportunities but also face many challenges. Compared to commercial banks in the ASEAN community and around the world, Vietnamese commercial banks are still very young in terms of qualifications, scale as well as business skills. With pressure in the period of international economic integration, Vietnamese commercial banks must constantly innovate to improve their competitiveness in the market.

## **2. Overview of the factors affecting the competitiveness of commercial banks**

One of the famous models in analyzing competitiveness in general is the model of Michael E. Porter. This model has been revised many times from 1979 to 1998 and is considered as one of the fundamental theoretical models for research on competitiveness. Firstly, he introduced the model "Five competitive forces" for all sectors in general including banking sector. Next, he introduced the "Diamond Model" with 4 groups of factors affecting the competitiveness of businesses in general, arranged in the form of diamonds including: (i) Conditions on production and business factors (human, material and intellectual resources), (ii) Conditions of demand with contents about the size, structure and complexity of domestic market demand for a given industry's goods and services, (iii) Strategies, structures and competition of businesses, (iv) Related industries and supporting industries. Finally,

in 1998 he developed his diamond model into a model of 9 subjective and objective factors affecting the competitiveness of the banking sector. Unlike Michael E. Porter, Thompson and Strickland (1990) proposed a method to assess the competitiveness of an organization through a matrix of internal factors. Accordingly, he proposed a model consisting of factors affecting competitiveness of enterprises and banks. For the banking sector, the influencing factors include: financial capacity, service quality, capital mobilization capacity, lending capacity, executive management capacity, interest rate competitiveness, technological capacity, quality of human resources, development capacity network, service capacity. Mary E. Barth et al (2003) conducted research on the competitiveness of commercial banks in the US and Canada. According to Barth (2003), the competitiveness of commercial banks is measured by six influencing factors: Quality of human resources, equipment and facilities, working system, understanding, capacity of technology, administrative and legal procedures. In addition, Barth (2003) said that it is necessary to add the "Prestige of the bank" factor to the model. Givi et al. (2010) developed a model of factors affecting the competitiveness of commercial banks in Iran. By using the Exploratory Factor Analysis (EFA) and Confirming Factor Analysis (CFA) through LISREL 8.5 software, the study results show 5 factors affecting the competitiveness of the Commercial banks in Iran include: financial capacity, market share, human resources, technological capacity and international exchange activities. Darshani (2013) investigated the factors affecting the competitiveness of bank branch Kahawatta of Ceylon Leasing Bank in Sri Lanka. The author has pointed out four factors affecting the competitiveness of banks including: quality of banking services, bank promotion efforts, banking technology capabilities and rental service fees. Hoang Nguyen Khai (2014) has built a model of 5 factors affecting competitiveness of Vietnam Joint Stock Commercial Bank for Foreign Trade: Bank scale, service quality, sales promotion efforts, banking technology, bank service fees. Doan Thi Thuy Anh (2016) builds a model of 8 factors affecting competitiveness in retail banking services of commercial banks in Hanoi city: quality of banking products, retail banking services, reputation of banks, banking transaction network, financial capacity, banking technology, trade promotion activities, intellectual capital....

### **3. Research Model and Hypothesis**

Through an overview of the factors affecting the competitiveness of commercial banks in general, with the topic of the article are the factors affecting the competitiveness of Vietnamese commercial banks, therefore research model is as follows:

$$Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \beta_4 * X_4 + \beta_5 * X_5 + \beta_6 * X_6 + \beta_7 * X_7$$

*In which:*

- Dependent variable Y = Competitiveness
- $\beta_0$  is the intercept,  $\beta_1 \rightarrow \beta_7$  is the slope of the relationship between the independent variable  $X_i$  and the dependent variable Y.
- Independent variables:  $X_1, X_2, X_3, X_4, X_5, X_6, X_7$  with:
  - $X_1$  is the financial capacity of the Bank
  - $X_2$  is the technology capacity of the Bank
  - $X_3$  is the brand of the Bank
  - $X_4$  is the service quality of the Bank
  - $X_5$  is the transaction network of the Bank
  - $X_6$  is the intellectual capital
  - $X_7$  is the service fee of the Bank

*The above independent variables are the factors affecting the competitiveness of the subjects surveyed in the study. The coefficients  $\beta_i$  will be determined after analyzing the data collected through SPSS 22.0 software. Thus, the linear regression equation in this research model can be as follows:*

$$\begin{aligned} \text{Competing capability} = & \beta_0 + \beta_1 * \text{Financial capacity} + \beta_2 * \text{Technology capacity} \\ & + \beta_3 * \text{Brand of the bank} + \beta_4 * \text{Service quality} + \beta_5 * \text{Transaction Network} \\ & + \beta_6 * \text{Intellectual capital} + \beta_7 * \text{Service fee} + \varepsilon \end{aligned}$$

From the above research model, the author makes research hypotheses including:

Hypothesis H1: The factor of "Financial capacity" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H2: The factor of "Technology capacity" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H3: The factor "Brand of the bank" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H4: The factor "Quality of service" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H5: The factor "Transaction network" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H6: The factor "Intellectual capital" has a positive impact on Competitiveness of Vietnamese commercial banks.

Hypothesis H7: The factor "Service fee" has a positive impact on Competitiveness of Vietnamese commercial banks.

#### **4. Research Methods**

The study was conducted in two steps: preliminary research and formal research. Preliminary research is done by qualitative method through open-type group discussion with 2 target groups:

Group 1: consists of 15 experts, including 5 people who are lecturers or scientific researchers with a doctorate or higher who are teaching and researching on Banking and Finance majors in some universities great study of Vietnam (National Economics University, Banking Academy, Ho Chi Minh City University of Banking, Foreign Trade University...) and 10 senior leaders of 10 typical commercial banks in Vietnam (Joint Stock Commercial Bank for Investment and Development of Vietnam - BIDV, Joint Stock Commercial Bank for Foreign Trade of Vietnam - VCB, Vietnam Joint Stock Commercial Bank for Industry and Trade - Vietinbank, Vietnam Bank for Agriculture and Rural Development - Agribank, Asia Joint Stock Commercial Bank - ACB, Lien Viet Commercial Joint Stock Bank - LPB, Vietnam Technological and Commercial Joint Stock Bank - Techcombank, Military Joint Stock Commercial Bank - MB, Maritime Commercial Joint Stock Bank - MSB, International Joint Stock Commercial Bank - VIB).

Group 2: consists of those who need to conduct surveys, including officials and employees of 10 typical commercial banks in Vietnam (BIDV, VCB, Vietinbank, Agribank, Techcombank, VIB, MSB, LPB, ACB, MB).

This discussion aims to develop scales appropriate to the context of the study. Scale in research using Likert form 5 levels from 1- Strongly disagree 5- Very agree, and 3- Normal. The discussion results of qualitative research have provided 33 scales to measure 7 factors affecting the competitiveness of commercial banks, including: The factor "Financial capacity" includes 6 scales that are coded from TC\_1 to TC\_6; The factor "Technology capacity" includes 5 scales that are coded from CN\_1 to CN\_5; The factor "Brand of the bank" includes 5 scales that are coded from TH\_1 to TH\_5; The factor "Service fee" includes 3 scales that are coded from PDV\_1 to PDV\_3; The factor "Quality of service" includes 6 scales that are coded from CL\_1 to CL\_6; The factor "Transaction network" includes 4 scales that are coded from ML\_1 to ML\_4; The factor "Intellectual capital" includes 4 scales that are coded from VTT\_1 to VTT\_4.

Formal research is carried out by quantitative methods by self-filling questionnaire with the surveyed subjects. Data of this study were conducted to measure scale, Exploratory Factor Analysis (EFA), Pearson correlation analysis, regression analysis and testing model and hypotheses by SPSS 22.0 software.

## 5. Research results

The author conducted a survey of 300 officials and employees in 10 typical commercial banks in Vietnam (BIDV, VCB, Vietinbank, Agribank, Techcombank, VIB, MSB, LPB, ACB, MB) and collected 278 valid questionnaires. Data collected from these 278 votes will be used to analyze the influence of factors on the competitiveness of Vietnamese commercial banks based on the evaluation of the above objects. Research results are as follows:

### 5.1. The results of assessing the reliability of the scales

Cronbach's Alpha coefficients are a statistical test of how closely the items asked in the scale correlate. This relates to two aspects of the correlation between variables and the correlation of each variable with the overall score of each respondent. This method allows analysts to remove unsuitable variables for garbage processing in the research model because otherwise we cannot know the exact variability as well as the error of the variables. Accordingly, only variables with a correlation of the total positive variable greater than 0.3 and having a Cronbach's Alpha coefficient greater than 0.6 will be considered acceptable and appropriate for subsequent analysis steps.

**Table 1: Results of Cronbach's Alpha coefficient of scales**

Item	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
<b>FINANCIAL CAPACITY</b>			
TC_1	0.663	0.886	<b>0.884</b>
TC_2	0.684	0.883	
TC_3	0.775	0.864	
TC_4	0.808	0.865	
TC_5	0.672	0.887	
TC_6	0.711	0.874	
<b>TECHNOLOGY CAPACITY</b>			
CN_1	0.706	0.814	<b>0.857</b>
CN_2	0.687	0.813	
CN_3	0.652	0.826	
CN_4	0.644	0.827	
CN_5	0.645	0.822	

Item	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
<b>BRAND OF THE BANK</b>			
TH_1	0.731	0.875	<b>0.891</b>
TH_2	0.763	0.866	
TH_3	0.775	0.867	
TH_4	0.727	0.872	
TH_5	0.724	0.874	
<b>SERVICE FEE</b>			
PDV_1	0.763	0.885	<b>0.876</b>
PDV_2	0.826	0.833	
PDV_3	0.804	0.847	
<b>QUALITY OF SERVICE</b>			
CL_1	0.683	0.885	<b>0.893</b>
CL_2	0.737	0.875	
CL_3	0.764	0.872	
CL_4	0.786	0.866	
CL_5	0.697	0.882	
CL_6	0.651	0.884	
<b>TRANSACTION NETWORK</b>			
ML_1	0.726	0.863	<b>0.881</b>
ML_2	0.643	0.895	
ML_3	0.865	0.817	
ML_4	0.798	0.841	
<b>INTELLECTUAL CAPITAL</b>			
VTT_1	0.692	0.813	<b>0.859</b>
VTT_2	0.665	0.826	
VTT_3	0.663	0.831	
VTT_4	0.749	0.783	
<b>COMPETITIVENESS OF BANK</b>			
CT_1	0.573	0.694	<b>0.755</b>
CT_2	0.481	0.748	
CT_3	0.536	0.705	
CT_4	0.625	0.653	

*Source: Research results of the author*

The analysis results shown in Table 1 show that: Cronbach's Alpha coefficient of all survey scales is greater than 0.7, of which the lowest is the measurement scale of the dependent variable "Competitiveness of banks" with Cronbach's Alpha coefficient = 0.755. This shows that survey data is completely reliable. Furthermore, the correlation coefficient of the sum of all the variables observed with the factor that the variables represent is greater than 0.3. This shows that respondents have a concept of the set of factors given by the observed scales/variables that express that factor, so the scales are to ensure reliability. Therefore observed scales/variables and factors are retained for further analysis.

### **5.2. Result of Exploratory Factor Analysis (EFA)**

After the data has ensured reliability, the next analytical work is to analyze the exploratory factor (EFA) to make an assessment of the convergence of factors and the number of factors given from survey data. In the factor analysis results need to ensure the requirements: KMO coefficient (Kaiser - Meyer - OIKIN)  $\geq 0.5$ , significance level of Bartlett test  $\leq 0.05$ . Factor Loading  $\geq 0.50$ , if any observed variable has Factor Loading  $< 0.50$  will be eliminated. The scale is accepted when the total variance extracted  $\geq 50\%$ . Eigenvalue coefficient must be valued  $\geq 1$ . In this study, the Principal Component method with Varimax rotation will be used to analyze the discovery factor.

**Table 2. Matrix rotating scales of variables**

Item	1	2	3	4	5	6	7
CL_4	0.841						
CL_3	0.846						
CL_2	0.825						
CL_5	0.793						
CL_1	0.789						
CL_6	0.746						
TC_4		0.871					
TC_3		0.856					
TC_6		0.805					
TC_2		0.782					
TC_5		0.763					
TC_1		0.767					
TH_3			0.865				
TH_2			0.850				

Item	1	2	3	4	5	6	7
TH_1			0.834				
TH_4			0.828				
TH_5			0.819				
CN_1				0.826			
CN_2				0.801			
CN_4				0.782			
CN_3				0.765			
CN_5				0.769			
ML_3					0.937		
ML_4					0.892		
ML_1					0.843		
ML_2					0.778		
VTT_4						0.864	
VTT_1						0.823	
VTT_3						0.805	
VTT_2						0.797	
PDV_2							0.913
PDV_3							0.912
PDV_1							0.895
Variances	12.135	24.167	34.893	44.548	53.789	62.294	69.912
Eigenvalues	4.756	3.813	3.617	3.332	2.827	2.423	2.306
<b>KMO = 0.805, Sig = 0.000</b>							

*Source: Research results of the author*

According to the analysis results in Table 2 shows that:

- Bartlett's test results show that there is a correlation between the variables in the overall (Sig = 0.000 < 0.05) and KMO coefficient = 0.805, showing that the results of factor analysis to group the variables together are guaranteed reliability.

- The above observed variables have Factor Loading greater than 0.5 to ensure the standard, while the difference between Factor Loading of the observed variables is greater than 0.3. Therefore, it is not necessary to remove the observed variable in the analysis.

- The Eigenvalues coefficient of the fifth factor is 2,306, confirming that there are 07 factors drawn from the analysis; The total coefficient of variance extracted by

07 factors by 69,912, showing the variation of the factors derived from the analysis, can explain 69,912% of the variation of the original survey data. The value of variance extracted is greater than 50%, thus ensuring the requirement of analysis.

### 5.3. The result of the Pearson correlation test

Before conducting regression analysis to assess the influence of factors in the regression model on the dependent variable is the competitiveness of Vietnamese commercial banks, the necessary work is level verification the correlation between the independent variables and between the independent variable and the dependent variable. The type of test that is often applied in this case is the Person correlation test. Pearson correlation test is used to test the linear relationship between independent variables and dependent variables. If the variables are closely correlated, attention should be paid to the problem of multicollinearity when regression analysis (hypothesis H0: correlation coefficient is 0).

**Table 3. Person correlation matrix**

	TC	CN	TH	PDV	CL	ML	VTT	CT
TC	1							
CN	0.006	1						
TH	-0.02	0.032	1					
PDV	0.047	0.062	0.098	1				
CL	.147*	0.027	0.022	0.043	1			
ML	0.041	0.091	-0.03	0.093	-0.03	1		
VTT	0.106	<b>.159**</b>	0.07	0.097	0.084	0.083	1	
CT	.374**	.362**	.371**	.400**	.353**	.261**	.447**	1
*. Correlation is significant at the 0.05 level (2-tailed).								
**. Correlation is significant at the 0.01 level (2-tailed).								

*Source: Research results of the author*

The results of the correlation test in Table 3 show that: The variables are correlated and significant at 0.01 level. The correlation coefficients of the dependent variable and the independent variables are relatively high; Preliminary, we can conclude that these independent variables can be included in the model to consider the influence of these variables on the competitiveness of banks. Besides, the independent variables are mostly expressed without correlation, there are only two factors: "Technology capacity" and "Intellectual capital" have significant correlation, but the low correlation coefficient is 0.159, so it is necessary to consider whether or not multicollinearity affects the regression results.

#### 5.4. Results of regression analysis

The results of the correlation analysis show that there is a correlation of the independent variables to the dependent variable, the regression analysis will confirm this correlation, and give the degree of influence of each factor with that dependent variable. The results of regression analysis are as follows:

**Table 4. Results of regression analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.840 <sup>a</sup>	0.706	<b>0.697</b>	0.26572	<b>1.974</b>
<b>ANOVA</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	47.125	7	6.732	<b>95.352</b>	.000 <sup>b</sup>
Residual	19.629	278	0.071		
Total	66.754	285			
<b>Regression Coefficient</b>					
	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	VIF
	B	Beta			
(Constant)	-0.278		-1.911	0.057	
TC	0.167	0.284	8.667	0.000	1.035
CN	0.153	0.260	7.928	0.000	1.035
TH	0.175	0.324	9.768	0.000	1.017
PDV	0.155	0.280	8.524	0.000	1.030
CL	0.152	0.266	8.048	0.000	1.030
ML	0.095	0.195	5.867	0.000	1.025
VTT	0.168	0.283	8.573	0.000	1.057

*Source: Research results of the author*

The analytical results in Table 4 show that:

- Coefficient R squared = 0.697, this shows the variation of the independent variables in the model can explain 70% of the evaluation results of the bank's competitiveness.

- Durbin-Watson coefficient = 1.974, close to value 2 shows the remainder of independent variables without self-correlation.

- The coefficient  $F = 95.352$ ,  $Sig = 0.000$  in ANOVA test shows that the reliability in the regression analysis results is guaranteed with low errors.

- The Sig coefficient of the factors in the regression coefficient is also lower than 0.05, which confirms the factors that affect the dependent variable are the competitiveness of banks.

- VIF coefficients of all factors are less than 2, so there is no multicollinearity phenomenon between independent variables.

Thus, the test results for the regression model have achieved good results, this shows that the construction of the regression function represents the influence of independent variables on the dependent variable in the model is degree high reliability.

Regression equation is built based on the adjusted regression coefficients as follows:

$$\begin{aligned} \textit{Competing capability} = & 0.284* \textit{Financial capacity} + 0.260* \textit{Technology capacity} \\ & + 0.324* \textit{Brand of the bank} + 0.266* \textit{Service quality} + 0.195* \textit{Transaction Network} \\ & + 0.283* \textit{Intellectual capital} + 0.280* \textit{Service fee} \end{aligned}$$

## 6. Conclusion

Research results show that the research hypotheses H1, H2, H3, H4, H5, H6, H7 are accepted with high reliability. That is the factors include: Financial capacity, Technology capacity, Service fee, Brand of the bank, Transaction Network, Service quality, Intellectual capital have a positive impact on the competitiveness of Vietnamese commercial banks. In particular, the most influential factor is the "Brand of the bank" with the coefficient of 0.324, followed by the factor "Financial capacity" with coefficient 0.284 and "Intellectual capital" with a coefficient of 0.283. The fourth influential factor is the "Service fee" with the coefficient of 0.280, the fifth influencing factor is "Service quality" with the coefficient of 0.266, The sixth influencing factor is "Technology capacity" with a coefficient of 0.260 and the lowest influencing factor is "Transaction network" with 0.195 coefficient.

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# EXPERIENCE LINK VALUE CHAIN OF BANKING IN EXPORT RICE RICE IN THE MEKONG DELTA

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## **Abstract**

*The paper focuses on analyzing and evaluating the issuance and results of the implementation of the Government's credit policy for agricultural and rural development and for rice production and trading since 2014. At the same time, write and analyze and evaluate the process of implementing credit policies to form a value chain of Standard Chatered Bank in the production and trading of export rice in the Mekong Delta. Experience and implementation status of Standard Chatered Bank since 2014. Research using methods is a statistical description from many different secondary data sources. The results show that the credit policy of the Government and the implementation of ministries are quite timely. Especially, the experience of implementing credit policies to form a value chain in production, business and export of rice in the Mekong River Delta is quite suitable for sustainable development in this area, raising prices treat export products of Vietnam rice. Based on the analytical results, the research provides some policy implications about the experience of Standard Chatered Bank implementation for Vietnam's commercial banks and related agencies and localities of Vietnam.*

**Keywords:** *experience link, value chain, export rice, Mekong Delta*

## **1. Introduction**

Developing value chain links between banks, businesses and producers, with the participation of the university's scientific research agency is an objective indispensable requirement for sustainable development of improving business performance of banks, businesses and producers. To form this value chain, requires initiative, willingness to cooperate of banks, businesses, effective participation of universities and research institutes, creating attractive attraction for producers are ready to participate; in which, it is indispensable for the policies of the Government, relevant ministries and provinces, cities, and localities where production and trading activities of such agricultural products take place.

In recent years in Vietnam, a number of linkages between producers and businesses have been initially formed and operated effectively in a number of areas. The chain of links between Standard Chartered Bank and An Giang Plant Protection Company (AGPPS) invests in the agricultural sector in the Mekong Delta region with the aim of helping to establish a chain of value production and business. Sustainable closed rice, is a good example in this area.

However, the linkage models have not appeared much in Vietnam, the domestic commercial banks have not actively and actively implemented value chain. The article on relevant credit policy research of the Government and implementation of the formation of linkages in the field of agriculture and rural areas, analysis of the experience of Standard Chartered Bank implemented in the Mekong Delta and give some recommendations.

The situation in Vietnam's production and consumption of agricultural products in general, the production and consumption of exported rice in the Mekong River Delta in particular is fragmented and small production according to each household, and lacks. The close link with the value chain between producers, suppliers of materials, breeders, lenders, ensures sustainable, branded development and guarantees prices for the market. The quality of rice products is limited, the rice export brand is also not available, so Vietnam's rice products lack competitiveness in the international market, the export price of rice is low, the market is uncertain, especially the place on the fastidious markets. Therefore, practical research on the experience of Standard Chartered Bank and An Giang Plant Protection Company (AGPPS) invests in the agricultural sector in the Mekong Delta region with the aim of helping to form a link chain. value of production and business of rice in a closed and sustainable manner for export rice, recommendations for Vietnamese commercial banks to implement on a large scale and apply to other export agricultural products with urgency in the integration period Vietnam's increasingly international economy.

So far there are some common concepts about value chains that can be seen as follows:

Value chain is a concept from business management that was first described and popularized by Michael Porter in 1985 in a book on analyzing his competitive advantage: "Value chain is a series of activities. east of a company operating in a particular industry. Products go through all the activities of a company that operates a particular industry. The product goes through all the activities of the series in a series and at each production activity gets some value. The chain of activities brings more value-added products than the total value added of activities combined."*Nguyen Tuan (2014)*

Next, researcher Kaplins Rapheal introduced the concept of value chain in globalization analysis: "Value chain is a series of activities necessary to turn a product or service from the moment it is a concept. recite, through various stages of production (including a combination of material transformation and input into different production services), until distribution to the end consumer and subsequent disposal when used". And a value chain exists when all participants in the chain work to create good value for the series. *Nguyen Tuan (2014)*

Thus, we can explain the definition of value chain in narrow or broad sense. In a narrow sense, a value chain consists of a series of activities performed in a company to produce a certain product. All activities from design, process of bringing input materials, production, distribution, marketing of sales, implementation of after-sales services have created a chain connecting producers with consumers. Moreover, each activity adds value to the final product. In other words, a customer can afford to pay more than a product with better after-sales service. Similarly, for agricultural companies, an appropriate cold storage system for fresh materials (such as vegetables, flowers, fruits) will have a good effect on the quality of finished products, and therefore, will increase product value.

Another expression, in a broad sense, is the value chain of raw material production and shifting systems with production, business, assembly, processing and consumption units. In a narrow sense: a value chain consists of activities carried out within a business to produce a volume of goods, provide or complete a certain service within a certain period of time. *Nguyen Tuan (2014)*

Overall assessment of previous studies on Vietnam practices has not yet had any specific analysis and review on the value-linked model between Standard Chartered Bank and An Giang Plant Protection Company (AGPPS). implementing investment in the agricultural sector in the Mekong Delta region. Clarify the benefits of forming a chain of sustainable closed rice production and business values. Through the article, the author clarifies benefits of joining value chain, First: timely and reliable information sharing; Second, reduce the complexity of market transactions; Third, reduce costs in chain links; Fourth, ensure stable operation throughout the entire chain system; Other benefits, such as improving reputation and competitiveness in the market, sustainable development, ...

So far there are quite a number of domestic and foreign works studying value chain links. In particular, theoretical studies focus on clarifying the concepts of value chain, components in the link chain, role and meaning of the link chain, factors affecting the chain. value. Foreign practical studies focus on introducing linkage experiences in agricultural production in the form of cooperative and cooperative

models of some countries on the production, processing and consumption of agricultural products. Practical research in the country has a number of works, introducing the linkage models in dairy farming and milk consumption of Vinamilk, Moc Chau Dairy Cow Joint Stock Company; CPGroup's pig production and consumption, production and consumption of some other agricultural welding surfaces.

According to *Ngo Xuan Tinh (2017)*, in practice implementing the guidelines of the Party and the State on developing production in the value chain on the basis of promoting the advantages, potentials and strengths of each locality associated with the price chain. regional and global values, the whole country has formed many production areas according to the value chain of products, key goods, large-scale and spread, significantly as: production of high-tech clean vegetables, sturgeon, lemons in Son La province; value chain of Luc Ngan and Bac Giang litchi products; chain of safe vegetable production in Da Lat - Lam Dong; value chain of catfish and catfish products in Can Tho ... Various forms of organizing consumption of products in series bring efficiency such as: Vietnam Safe Agricultural Products Consumption Association (UCA), connecting nearly 100 cooperatives to build UCAmart branded stores; chain of Co.opmart supermarkets of Saigon Co.op with the system of over 80 supermarkets throughout the country ... etc. For Thai Nguyen province, initially appeared many models of enterprises and cooperatives in some districts, cities and towns that organize production and trading of products such as bud tea, pig and chicken. Fish, vegetables, tubers, fruits, etc. according to the value chain or participating in some stages of the chain bring positive results.

According to *Leu Vu Dieu (2017)*, there are more than 10 thousand farmers participating in technical demonstration models and applying sustainable standards for some agricultural products in collaboration with multinational corporations. family. Many production and business farmers have worked closely with each other to build cooperative groups, cooperatives, to form linkages along the value chain that support and guide farmers to connect with the market. Many agricultural products in Vietnam have been present in many countries around the world.

However, until now, there has not been any research work on the experience of forming a link chain in the production, purchasing and processing of rice for export in the Mekong Delta with the role of a focal point, formed by a foreign bank in Vietnam deployed. The article focuses on clarifying this content and making some recommendations.

## **2. Research Methods**

The article studies the reality of deploying value linking model in rice production for export in the Mekong Delta region, the author uses qualitative research

method. The author is based on actual observations, exchange of experiences and direct interviews with a number of specialists of Standard Chartered Bank, some officials in local areas, rice farmers participating in a chain of links, specializing in Members of AGPPS, the author is also based on secondary data, based on reports of Standard Chartered Bank, AGPPS, of some authors published in the mass media. On that basis, the author synthesizes, analyzes, compares, evaluates and draws comments and suggestions in the direction of research.

### **3. Research results**

#### ***3.1. Credit policy for establishing value chain and implementing in practice***

A bank credit policy is very important to facilitate the establishment of a value chain in the field of agriculture and rural areas in the past and now it is Resolution No. 14 / NQ-CP dated 05 / 3/2014 regular Government meeting in February 2014. In this Resolution, the Government assigned the State Bank of Vietnam (SBV) to coordinate with the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Science and Technology (Science and Technology) to implement the pilot lending program. linkage model, high technology application in agricultural production. Next is Decree No. 55/2015 / ND-CP on agricultural and rural credit policy. However, these documents do not adjust and do not mention universities in the models of high-tech applications. *State Bank of Vietnam (2015)*

Implementing the Resolution No. 14 above, the SBV has collaborated with the Ministry of Industry and Rural Development and the Ministry of Science and Technology to implement the pilot program of high-tech application production model. The ministry has selected 28 enterprises in 22 provinces and cities nationwide to implement 31 agricultural production projects under the model of linking and applying high technology.

But one thing worth noting is that there are no models of the above 31 projects that have the role of universities or the participation of universities and research institutes. *State Bank of Vietnam (2015)*

After more than one year of implementing Resolution No. 14, the inter-ministry has made assessments and withdraws experiences from the pilot phase, based on that, to include and supplement the provisions of Decree No. 55/2015 / ND-CP on credit policies for agricultural and rural development, contributing to promoting the formation of valuable linkages between stakeholders. *State Bank of Vietnam (2015)*

Resolution No. 14 and now Decree 55/2015 are important legal bases to create opportunities, but also pose significant challenges in the competition for expanding credit safety, capital flows. to agriculture - rural areas, invest capital for models

linking value chains, high technology application to domestic commercial banks (commercial banks), international economic integration in the coming time. Finding out "niche" market segments; methodical, long-term, systematic investment for customers by value chain is a business strategy trend that many foreign banks in Vietnam are implementing, considered a reference for reference. positive for domestic commercial banks. As for universities, scientific institutes also need to actively explore the needs of practice, really change in research to connect with the demands of businesses and the market.

### ***3.2. Experience of Standard Chartered Bank on the implementation of the rice export value chain in the Mekong Delta***

A credit solution to contribute to promoting sustainable rice exports is considered very important, started by a foreign banking group in the Mekong Delta region in recent years, possibly It is considered a positive reference, or a challenge for Vietnamese commercial banks in competing to expand credit safety in the current trend of integration and credit environment. This is also a large market and also a challenge in scientific research associated with the reality of Vietnamese universities and research institutes.

Specifically, from the beginning of 2014, Standard Chartered Bank, a 100% foreign-owned bank in Vietnam, decided to sponsor a capital of US \$ 70 million, equivalent to VND 1,500 billion of preferential loans to Plant Protection Company. An Giang (AGPPS) invests in the agricultural sector in the Mekong Delta region with the aim of helping to establish a chain of sustainable rice production and trading values. This is a reputable enterprise in supplying materials and related fields for farmers in general, rice farmers in particular in this region. *Dieu Huong (2014)*

In Long An province, AGPPS has urgently built a logistics center specializing in packaging leading modern export rice in Asia on an area of 6.5 hectares in Tan An city with an investment of VND 150 billion. Previously, Long An Provincial People's Committee decided to allocate 1,000 ha of agricultural land in Tan Hung to AGPPS to specialize in researching, producing high quality seeds for farmers in the region, mainly Farm households produce rice for export. The study was conducted by AGPPS, without the participation of scientists from any university or research institute in the region of quality assurance or of Vietnam in general. *Dieu Huong (2014)*

Not only in Long An, in Dong Thap, AGPPS also built a center specializing in the production and supply of similar high quality seeds, after being handed over to Dong Cat Farm with 400 ha. *Dieu Huong (2014)*

In addition, AGPPS cooperates with Satake Group (Japan) to research and install high-tech rice dryer, whitening and polishing machines to improve the quality of AGPPS commercial rice in regional and national markets. sacrifice. This project comes into operation is a great advantage for farmers to produce export rice, as well as improve rice export efficiency. This is also a favorable opportunity for commercial banks to invest capital for rice farmers. *Huynh Van Thon (2014)*

In fact, from 2010 to the present, AGPPS has invested capital to develop a chain of sustainable rice production value, also known as a large sample field model, through the linkage of building material areas and signing co-targeting products, supplying seeds, preventive and curative medicines, fertilizers ..., and providing free support for many harvest stages for farmers. In addition, AGPPS invested in building five groups of food processing factories, mainly exported rice in material areas in the provinces of An Giang, Long An, Dong Thap and Bac Lieu in the Mekong Delta region. *Huynh Van Thon (2014)*

Up to now, a large model field model has been evaluated by the authorities to achieve high economic efficiency. As planned, in 2018, AGPPS production chain will have 360,000 hectares of rice cultivation and complete 12 rice processing factories with a total capacity of 2.4 million tons of rice per year in the Mekong Delta region. *Huynh Van Thon (2014)*

Upon completion of the above investment projects, AGPPS will form a closed rice production and trading chain. Accordingly, with farms in Tan Hung and Dong Cat, AGPPS is associated with establishing a centralized unit to research and produce high-tech varieties. This unit will produce super-prototypal, primitive rice varieties, then cooperate with farmers to build material areas specializing in supplying certified rice varieties, experimentally producing corn varieties and high-quality crops. At the same time, building a processing and storing plant to supply rice, maize, ... varieties to the whole Mekong Delta region and exporting to some countries in the region. *Huynh Van Thon (2014)*

With the logistics center will gather rice from five food processing zones and existing material areas of AGPPS in the Mekong Delta provinces, thereby organizing the processing and packaging of rice packages, including nutritious rice. Vibigaba, other value-added products from rice. This is also a trading center, providing rice for the domestic market and export of the Mekong Delta region. AGPPS has achieved important results in exporting rice to Japan, the capital market is considered the most fastidious in the world but the selling price is quite good. The cooperation with Satake helps AGPPS rice products continue to enter Japan and other markets. *Huynh Van Thon (2014)*

Standard Chartered Bank also funded investment in science and technology, in deep processing to add value-added products to maximize the value of agricultural products. Next, Standard Chartered Bank provides capital support for AGPPS to continue the implementation of utilization of straw waste in agricultural production, both to protect the environment sustainably and to increase income. AGPPS will then complete a closed production chain from the supply of seeds, agricultural supplies ... to processing and consuming various products from agricultural products, especially rice, a strength of Mekong Delta region.

In the past, social investment capital as well as foreign investment in the agricultural sector in Vietnam, especially in the Mekong Delta region, were very limited. For the first time, Standard Chartered Bank, a leading foreign bank involved in this field, is very encouraging. Standard Chartered Bank found that the rice production chain in the model of large sample fields is in the right direction and inevitably brings high economic efficiency, low risk and positiveness to society, so it has bravely funded and support for AGPPS. That creates a spillover effect, there will certainly be more businesses to implement the model and have more international financial institutions and domestic commercial banks to participate in similar investments.

Before Standard Chartered Bank financed its capital, the bank invited and sent many delegations, investment experts, and finance, including a group of specialized scientific and technical experts to the field to thoroughly evaluate the production chain. which AGPPS is implementing. They found that AGPPS organized in a sustainable manner, especially saw the partner's real work, so they bravely funded long-term capital ... with AGPPS in the production and export of quality rice High into regional and international markets. In this model, there is no involvement of universities or scientific research institutes, whether or not this participation is due to practical requirements, due to the effectiveness of the research institution itself. Standard Chartered Bank directly invites a group of specialized scientific and technical experts, not cooperating with any universities, this is a concern.

Standard Chartered Bank, through its practical research on investment customers, has been completely convinced by the effectiveness of a large sample field model by AGPPS and farmers who are effectively implementing in many localities. In the Mekong Delta region, it has brought harmonious benefits to farmers. In addition to the economic benefits, Standard Chartered Bank wants to create a further impetus to develop this model, in order to create new values for Vietnam's rice exports in the international rice market in a way. long-term and reputable, secure funding of the bank.

#### **4. Discussion and Conclusion**

Standard Chartered Bank's approach is a valuable lesson of reference for Vietnamese commercial banks in determining the strategy of expanding credit safely, effectively, in close financial support, accompanying enterprises to the beginning. Private investment from seed, production, purchasing, processing and export. This activity has the legal foundation of Decree 55/2015 / ND-CP of the Government promulgating credit policy for agricultural and rural development. Domestic commercial banks should urgently implement the selection of reputable businesses that are eligible to finance the above model of sustainable rice production. At the same time, researching and deploying to expand into other areas of Vietnam vomit and seafood export, such as dragon fruit, mango, milk breast, catfish, Basa fish, shrimp,... bring many benefits. participants, reduce risks for banks. The proposed model of Vietnam's rice production and trading in general, including the Mekong Delta region, can also be applied to other agricultural products and seafood exports, such as: rambutan pomelo, mango, breast milk, dragon fruit, shrimp, catfish, .... Commercial banks only need to adopt a clue that the state-owned company has been equitized, or a private enterprise engaged in rice procurement, a reputable enterprise supplying seeds, fertilizers and medicines. insecticides, agricultural tools and purchasing, processing and consuming rice. In other words, Vietnamese commercial banks must be proactive in participating in a closed chain, completing step by step credit operations to ensure sustainable, effective, minimizing risks and at the same time contributing to Part of creating products such as rice, coffee, rubber, pepper, cashew, seafood, tropical fruits,... best, reputable, hygienic and safe food, provided to the market domestic as well as export, expanding and improving the competitiveness of Vietnam's agricultural products for export on the international market.

In current practice, Vietnamese commercial banks are lending capital to each participant in each stage in the process of exporting rice, coffee, rubber, cashew nuts, pepper, dragon fruit, rambutan, and breast milk. , shrimp, pangasius ... according to legal basis, meaning Decree 55/2015 / ND-CP, including: rice farmers and all kinds of agricultural and aquatic products mentioned above, traders buy rice and commodities agricultural and aquatic products; enterprises exporting rice, coffee, and catfish ... Therefore, bank managers need to conduct research on lending plan focusing on one clue according to the above value chain. From the diagram and process of the chain of rice export value mentioned above, commercial banks should actively discuss, discuss and cooperate with enterprises to deploy agricultural products and key aquatic products of Vietnam.

Deploying this bank credit solution, commercial banks only need to finance capital through a focal point which is the central enterprise of the Linkage Model, reducing costs and time for appraisal, debt collection, ensure safety; faster credit capital rotation, effective for both producers, suppliers and buyers, processing of agricultural products, high quality seafood, ensuring food safety and hygiene standards of all fastidious markets, boosting exports.

Forming value chain links is an indispensable requirement of international economic integration, the trend of sustainable development in agricultural production and commercial activities of commercial banks. This is not the owner, the policy, the policy orientation of the Government, the agencies to build macroeconomic policies, effective business strategies of commercial banks and businesses, but also is the demand of farmers and producers. On the side of domestic commercial banks, it is necessary to urgently select reputable enterprises that are eligible to finance all fields of agricultural production according to the above-mentioned model of sustainable rice production. , bringing benefits to many stakeholders, reducing risks for banks.

Universities and research institutes need to invest in researching the above model in order to participate in value chain in the future, should not stand outside or not, banks, businesses, people Production put into participating value chain links. However, the participation of universities and research institutes in value chain links must be based on market principles, ie to bring about the effectiveness of stakeholders, on the basis of Voluntary. This is an innovation requirement in research activities of universities.

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**LOCAL WISDOM OF MAKING COMMUNITY FISH HOUSE IN  
ENHANCING FOOD SECURITY UNDER THE WAY OF FISHERY IN  
THA SAO-BAN MAI AREA, SATHING MO SUB-DISTRICT,  
SINGHANAKHON DISTRICT, SONGKHLA PROVINCE**

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**Abstract**

*This article aims to study the local wisdom of making community fish house to strengthen food security under the way of fishery in the Tha Sao-Ban Mai area, Sathing Mo Sub-district, Singhanakhon District, Songkhla Province. The method of study used qualitative research with observation, and in-depth interviews with 15 key informants, such as, community leaders and fishermen in Tha Sao, and Ban Mai area, The data were analysed by classification, interpretation, and conclusions of the study and was presented by descriptive analysis.*

*The study found that the community had formed a group to create a conservation zone by putting in the bamboo poles to indicate the area of fish house,*

*and set up rules prohibiting fishing in the conservation zone. Fish house had been learned and inheriting from ancestors until it became the community wisdom of building habitat for aquatic animals and restore the Songkhla Lake by solving the problem of reducing aquatic animals in order to strengthen food security; to be able to have enough aquatic animals for food throughout the seasons.*

**Keywords:** *Local wisdom, Fish house, Food security, Fishery*

## **1. Introduction**

Songkhla lake is a large water source with abundance fresh, brackish, and salt water animals. It has potential in aquatic animal production to serve the consumption of the people living around the lake. There are various activities in the utilization of the areas in the lake, such as, fishery. At present the aquatic animal resource in the Songkhla lake were used wastefully because of the unsuitable fishery instruments which destroy the habitat of aquatic animals, including the young animals )Songkhla Province Fisheries Office, 2017(. The lake was harmed by people, destroyed by technology or modernization. The lake is in “crisis”; less fishes, waste water from households from communities, towns, and industrial factories, situated around the lake. The lake is shallow because of its sewage repository. The folk fishermen with small boat fishing near the coast, are the group of people who face the problems; and have to go farther from the coast, spend more time in fishing, less time with family, risk the danger in the sea, increasing cost in fishing over the revenue. So, many fishermen left the sea and went to work in factories (Boonprakarn, Chanthawong, Sangkapan and Suriyo, 2013). Though the government tries to build up the security in the food resource base and environment, by including the concept in the development strategy, but the problem of the lessening of fishery resource of the communities around the Songkhla lake with less produce because of the deterioration of Songkhla lake from the impact of waste water from communities, industrial factories, and destructive fishing instruments. All are the risk factors for the food security of the community )Sangkapan, Boonprakarn, Thammarat, Subinrat, Subinrat and Panitkorn, 2016(. Thus, the “fish house” is a project of the community created to restore the Songkhla lake, to solve the problem of fishery resource management which is lessening. The government supported the project with the marine farm management of the Songkhla provincial fishery office; by releasing aquatic animals in the conservative area and stop fishing young aquatic animals, resulting in increasing aquatic animal resource )MGR Online, 2017(. Also in the area of Tha Sao-Ban Mai, Sathing Mo Sub-district, Singhanakhon District, Songkhla Province, the villagers had participated and declared the area 300 meters from the Songkhla lake coast as conservative area and marine farming zone, with a president responsible in looking after the area in each village. In the declaration of conservative area to be

marine farming zone, the communities had laid down the orders, regulations, and rules, on how to use the common resource with concrete community management.

From the above phenomenon, the researchers wondered that what is the local wisdom in making fish house of the community in promoting the food security under the way of fishery in the area of Tha Sao-Ban Mai, Sathing Mo Sub-district, Singhanakhon District, Songkhla Province. The data obtained could be applied usefully in the other areas.

## **2. Method**

The researchers used the following qualitative methods:

**1) Research area:** The researchers selected the area of Tha Sao-Ban Mai, Sathing Mo Sub-district, Singhanakhon District, Songkhla Province, because in the area most of the villagers were fishermen in the Songkhla lake area which is part of Sathing Phra peninsular. There were attempts for collective fishery resource conservation by making fish houses for a long time. There were community rules for fishery and declaration of the area 300 meters from the coast for marine farming zone.

**2) Key informants:** 15 people of the community leader group, the elder group, and the collective fishing group for making fish house, who are aware of fishery resource conservation.

**3) Research instruments:** In-depth interview form was the questioning guideline for the purpose of this research.

**4) Data collection:** In-depth interviewing was done with 15 people including the community leaders, the elders, and local fishermen, in the topic of the wisdom in making fish house and the promotion of food security. Non-participating observation was done with the collective fish house making in the marine farming zone of the community with other agencies and local fishermen.

**5) Data analysis:** The data were classified, interpreted, concluded, and presented with descriptive analysis.

## **3. Results**

**1) The wisdom in making of fish house of the Tha Sao-Ban Mai communities, Sathing Mo Sub-district.**

In 2014 the fishermen grouped together to form the aquatic animal conservation group by setting up the marine farming zone for the Tha Sao-Ban Mai communities. The area of 300 meters from the coast of the Songkhla lake for 283 rai was kept as aquatic animal habitat and breeding ground. The fish house was made by putting in the tree branches in circular form, or coconut branches tied up with stones

and bamboo trees tied up with PVC tubes, all were bind together and laid down in the lake 300 meters from the coast for 1 kilometer long. The coconut branches could be in the sea for 1 year, they functioned as the mangroves in the mangrove forest, providing 16 units of the habitat and breeding ground for aquatic animals. The project aroused cherish in the fishery resource in the villagers, so they cooperated in aquatic animal conservation to create abundance for the lake. They decided to keep an area for marine farming zone. The fish house area was the “conservation area” where everyone will not fish in the area to let the fish to grow up fully.

The result was that fish houses really drew back fishes because the PVC tubes incorporated had corners and hollows for hiding and laying eggs, thus drawing fishes and other aquatic animals to return to the area near the bank. So, the folk fishermen could fish near the coast again. The villagers had more income with self-dependent sustainably and did not leave the village to find jobs in the town (Salae, interview, September 27, 2018; Oman, interview, September 27, 2018). Putting in the poles in the sea above is considered as the wisdom in making fish house and fishery resource conservation which the villagers used to do for a long time and inherited by practice for generations (Uncle Chuan, interview, September 28, 2018; and Uncle Boon, interview, September 28, 2018.)

On December 5, 2014, the villagers of the conservation group of the marine farming zone at Tha Sao village collectively built up a fish house in the beautiful heart shape in the marine farming zone for almost one month, to honor the King Bhumibol on the auspicious occasion for celebrating his majesty 87 years of age, and to show their loyalty. The fish house structure made with PVC tubes, decorated with yellow flowers on the edge of the heart shape - yellow was the color for Monday, his majesty’s birth date - the symbolic flag and national flag with the message of “Long Live the King” in the middle. In the fish house, tree branches were put in to be habitat and breeding ground for aquatic animals (Iddarid Jinda, interview, October 30, 2017).

Then, in 2015 the folk fishermen in the area of 3 villages in Sathing Mo Sub-district, Singhanakhon District, Songkhla Province, grouped together to be the Songkhla lake aquatic resource and mangrove forest conservation group, and declaring the area of 969 rai of the three villages to be the aquatic animals and mangrove forest conservation zone, including the marine farming zone; prohibiting intrusion for any kind of fishing, especially the push nest. Moreover they made fish house for aquatic animals to lay eggs and breeding. The villagers took turn to guard the intrusion for fishing in the conservation zone. After operated for over one year, they found that the amount of aquatic animals in the Songkhla lake in the conservation zone had increased, such as, mullets and shrimps (Abdul, interview, October 30, 2017).

In October 2017 at the Tha Sao-Ban Mai area, Sathing Mo Sub-district, the coast conservation group, marine farming group, fisherman group, local villager

group and over 300 local student representatives from Songkhla Rajabhat University and Thaksin University, came together to make fish house in the Songkhla lake in the shape of Thai number nine (๙), to show their loyalty and gratitude to the King Bhumibol, Rama IX, who cared for the fishing career of the fishermen in the country. The president of the coast conservation and marine farming group of Ban Mai community, Mu 1, Sathing Mo Sub-district, Singhanakhon District, Songkhla Province, Mr. Dolroman Pulae (interview, September 25, 2018) explained that the fish house constructed in the Songkhla lake with the local natural materials, including woods, bamboos, coconut branches, and toddy palm leaves, will not have impact to the environment because they are naturally perishable, and some are also the aquatic animal's food. The villagers believed that the making of fish house will help to conserve aquatic animals to increase and reduce illegal fishing. This will be resulted in the continuing of food for the fishermen's children and sustainable fishing career. The activity was to make merit for the King, the father of the nation, and to build awareness of the people in society for mutual interdependent because the releasing aquatic animals and making house for fishes was to build good awareness for the sea. If we fish by destroying the nature, one day all resources will be disappeared (Waeminoh, interview, September 26, 2018).



**Figure 1. Making a fish house is a heart shape**

*Source: Photo by the researcher on 2 July 2017*



**Figure 2. Fishermen, students join together to make fish houses in the sea farm area.**

*Source: Kimyong-dotcom, 2017*



**Figure 3. Fish house making is number nine (၉)**

*Source: Photo by the researcher on 2 Dec 2017*

## **2) Enhance food security under the way of fishery**

The making of fish house of the villagers in Tha Sao, Mu 2, and Ban Mai, Mu 1, Sathing Mo Sub-district, with the students, NGO, private sector, government agencies, fishery resource conservation group could enhance food security in the household and community levels according to the food security principles of FAO (2002) as follows:

**2.1) Sufficiency of food from fishery resource:** The making of fish house will help in supporting sea food conservation from destructive fishing instruments. The communities turned back to cooperate in making fish house in the food production of the communities to create ecological sustainability for food security; helping in restoring fishery resource to be sufficient and useful in consumption as protein food from the sea. (Isma-ae, interview, December 20, 2018; and Sumali, interview, December 20, 2018)

**2.2) Food access of the fishermen:** The making of fish house in the conservation zone 300 meters from the bank will help lessening destructive fishery. The fish house will prevent fishing instruments from fishing near the bank. So, the fishermen need not to fish far from the bank (Bang-aen, interview, September 25, 2017). This will result in the turning back of the fishermen who left to be workers in industrial sector to be the labor in household because the number of fish is increasing, no need to spend high fuel cost because fishing could be done near the house.

**2.3) The utilization of aquatic animals:** There are many aquatic animals that fishermen could use as protein food. Fish could be fished all the seasons for consumption. If there are excess shrimps or fishes, they could be preserved for further consumption, such as, dried, salted, sweetened, fermented, and making paste. All are useful for further cooking varieties (Uncle Panya, interview, December 22, 2017; and Uncle Jan, interview, December 22, 2017).

**2.4) Stability:** The making of fish house in the marine farming zone of the community in Tha Sao-Ban Mai area, helped the aquatic animal production system in the Songkhla lake sufficiently both quantity and kind. People in the household level could be always access to food, e.g., they could fish for consumption in all seasons of the year, so, resulted in food stability (Suni, interview, September 25, 2017).

#### **4. Discussion and Conclusion**

The wisdom of making fish house caused the restoration of the fishery resource to be lively again; fishermen could fish near the bank. The fish house made from bamboos, coconut branches and other trees obtainable in the community, to be fish habitat for laying eggs and hiding from danger of destructive fishing instruments in the marine farming zone which conform to the study of Sukkasem, (2008). This created food security; having aquatic animals for food sufficiently, easy and fast accessing, and not far from the bank. The aquatic animals fished could be consumed in the household, and the excess could be sold for money and bought other foods. Moreover, they could be fished in all seasons, thus, there were food stability even in the time of crisis, which conform to the study of Boonprakarn, Dhammasatchakarn, Chanthawong, Jiaramat, Sangkapan and Jomthong (2012). The study found that food stability related to the restoration of fish habitat near the bank by using the wisdom of making fish house in the marine farming zone. This also helped to empower the community in managing fish bank to have aquatic animals for food in all seasons.

Moreover, it is found that fish house is also the right to access fishery resource in negotiating with the fishermen who do illegal fishing, and with the state power in determining the area of the state to be the area of conservation, by claiming the community rights with the awareness of common ownership. This is conformed to the study of Boonprakarn, Dhammasatchakarn and Phonbandit )2012( in claiming the right to access resources of the community by creating the awareness of the common ownership.

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**UNDER THE BRIDGE TRADE: UNOFFICIAL THAI - MYANMAR  
CROSS-BORDER TRADE AT MAE SOT DISTRICT,  
TAK PROVINCE**

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**Abstract**

*This paper has the purpose to study the nature of the unofficial Thai-Myanmar cross-border trade: channels and commodities. Qualitative research method was used. The data were collected by observation and in-depth interview. The 13 key informants were unofficial cross-border traders and purchasers both in Thailand and Myanmar, at Mae Sot district, Tak province. The data were analysed by classification, interpretation, conclusion, and presented with analytical description.*

*The study found that people at Thai-Myanmar border, Mae Sot district, Tak province, had travelled across the border and traded in their daily life for a long time. The unofficial cross-border trade was smuggling in the night and transported by boat. Gangs were hired to carry goods from Thailand into Myanmar. Some goods were cleared through Myanmar customs service but informed with less amount than*

*the actual goods, and carried across the border by people. As for border-crossing points and the type of goods, the study found that Mae Sot district had many important border-crossing boat landings which were the channels of ferryboat. The types of goods were daily consumer goods and second-hand goods such as clothing, shoes, brand-name bags, cars, and motorcycles.*

**Keywords:** *cross-border trade, Thai-Myanmar border economy, border-crossing points.*

## **1. Introduction**

At present Mae Sot is the country known by outsiders as border-trading town, the center of Thai-Myanmar economic development. Especially for Thailand, Mae Sot is the border trading town that making the highest revenues for Thailand. Its export value is 10 times more than import. From the legal trade statistics through the Mae Sot customhouse during 1993-2006, the average values were 4-5 billion baht per year. In 2012 the export value was 33,968.598 million baht and ever increasing. Until 2018 the export value was 73,271.675 million baht, comparing to the import of 2018 at 6,487.225 million baht. (Mae Sot Customhouse, 2562) From the above data, Thailand had trade advantage with Myanmar at Mae Sot customhouse more than 60,000 million baht per year. Thai government saw Mae Sot as the town of economic development, especially the effort of pushing forward the creation of special economic zone which will help to reduce many political and legal conditions and support the development of trade, industry, and investment. From the study of the development plan of the special economic zone, Mae Sot has economic advantage that is the factor of low production cost, due to the flexibility of the border. The foreign labors easily cross the border into Mae Sot area. One of the suggestions of the development plan is to ease the law to support the incoming of the foreign labors which are facing economic crisis and the problem of violent warfare in Myanmar. This makes Mae Sot as the town of multi-ethnicity in term of inhabitants, causing many problems in management and government in the eye of the Thai state. (Chaithong, 2013)

In the Thai-Myanmar border area at Mae Sot, the cross-border trading activities were divided into 2 types: The official trade is “the trade through the bridge”, that is the legal import and export of goods in the authorized route through customhouse. The unofficial trade is “the trade under the bridge”, that is the illegal import and export of goods in the unauthorized route. (Boonprakarn, Deekhunthod, Sangkhaphan, 2013) The trade under the bridge does not have certain export statistics though it has a high value. Smuggled (or contraband) goods of border trade which transported by water across the Moei River had an export value around 3.7 %

(Chemsripong, 2010) From the interviews, most of the Mae Sot border trades with Myawadi were trading between Thai and Myanmar people which started long ago since the time Myanmar closed the country. The people of both countries traded each other as the daily economy or in the micro level.

From the above phenomenon, the researchers wondered that what is the nature of the unofficial Thai-Myanmar cross-border trade at Mae Sot? Where are the border-crossing points for the transportation of goods, and what are the types of goods? The data obtained are able to apply for the development of the area of the special economic zone at southern border.

## **2. Method**

The researchers used qualitative research methods as follows:

1) **Research area:** The researchers selected the Thai-Myanmar border area at Mae Sot district, Tak province, because the area has boat landing and channel for cross-border goods transportation, and a huge volume of import and export between Thai and Myanmar.

2) **Key informants:** 13 people including Thai and Myanmar trader groups, labors, purchaser groups, and Thai and Myanmar border people.

3) **Research instruments:** In-depth interview form which is only question guideline created for the research purposes.

4) **Data collection:** In-depth interview of 15 informants including Thai and Myanmar traders, labors, purchasers, and Thai and Myanmar border people, with the issues of Thai-Myanmar cross-border trade, unofficial cross-border trading activities, and characteristics of cross-border goods.

5) **Data analysis:** The data are classified, interpreted, concluded, and presented with analytical description.

## **3. Results**

1) **The nature of the unofficial Thai-Myanmar cross-border trade at Mae Sot district, Tak province.**

The cross-border trade activities, a part of the border economy at Mae Sot district, Tak province, had many types of cross-border trade:

1.1) The export is under the Thai customs formality but does not legally pay the tax for Myanmar. This trade route is not under the control of the customs, and mostly smuggle at night by boat. The boat landings used for bulk goods and many rounds of transport, not far from the Thai-Myanmar Friendship Bridge.

“... transport by boat. The goods were laid waiting at the boat landing. ...we know, but sometimes we let go. They manage by themselves. They had done for a long time until no one said anything. Mostly the traders will talk to each other...”. (Somboon, interview, March 15, 2018)

“...transport by boat is quick and convenient, from this boat landing to the boat landing of the other side. The boys carry quickly. If transport through the bridge it will take a long time to go through the customs clearance and need trucks...”. (Chai, interview, March 16, 2018)

1.2) There are gangs for hiring to transport goods from Thailand to Myanmar. Some goods are legally through the Myanmar customs clearance, but the goods in the containers will be different from the registered goods, whether the size, color, kind, and the amount of goods. The amount of registered goods will be lower than the actual goods, as the following interviewer's words:

“...cross-border goods will be registered amount lower than the actual amount, and smaller size will pay less tax. We do any way to pay low tax...”. (Saw Aung Tan Wei, Interview, March 22, 2018)

“...there are labors employed to transport goods from the bank to the boat and from the boat to lay down on the bank. The other side will have men to load on the trucks...”. (Sutha, interview, April 2, 2018)

1.3) The transportation of goods from Myanmar to Thailand and from Thailand to Myanmar. The goods may be transported by the people, because most of the border people will cross the border by boat every day. From Myawadi, they will take long-tailed boat, paying 20 baht, without using passport. They will come to Mae Sot to purchase goods and commodities to sell or for household consumption. Even though the Thai-Myanmar Friendship Bridge could be seen and not far for them, the people do not prefer to cross the bridge because they do not have border pass, and they have to walk longer than crossing by boat. There are also two-row mini buses from the boat landings to Mae Sot town. The words of the informants are as follows:

“...usually we cross through and fro. Sometimes we purchase goods for selling in Myanmar. We transport them back by boat. We have no need to pay other than the boat fare and carrying cost...”. (Sininart, interview, Aril 25, 2018)

“...when we cross, we purchase goods of the other side to sell. Sometimes, the Mae Sot people ordered goods at Myawadi, we pick up for them. Sometimes, the Myawadi people ask us to buy things at Mae Sot, we also buy other goods for selling too. We have done like this for a long time, we can live with good income...”. (Supho, interview, April 26, 2018)



**Figure 1. The goods transported by the people**

*Source: taken photos by the researcher, March 14, 2018*

Moreover, Nawpho (interview, March 13, 2018) told us that the people living along both sides of the Moei river paddle their boats crossing the border, or making wooden bridges across the river at narrow part, or walking across the river during the low tide. All are normal ways of the people in this area. Children would swim in the river. Adults would fish for cooking foods to survive.



**Figure 2. Border trade in Mae Sot of border people**

*Source: taken photos by the researcher, March 12, 2018*



**Figure 3. Cross-border products in Rim Moei market**

*Source: taken photos by the researcher, March 12, 2018*

## 2) Cross-border points of the goods and the characteristics of the goods

In the areas of Tak province bordering with Myanmar, Mae Sot district has many important cross-border points: Boat landing of Rim Moei village, Tha At village, Wang Takhian village, Huay Muang village, Wang Kaew village, Pha Lu village. (Tan Hwe, interview, January 18, 2019) From conversation with Ma Aye (interview, January 17, 2019), before and after the opening of the bridge there were no different in increasing the trade volume, because there were many boat landings along the border. The businessmen prefer to export through the boat landings because of the lower cost of transportation than through the Thai-Myanmar Friendship Bridge.



**Figure 4. Cross-border points at Tha Sai Thoralek, Rim Moei village**

*Source: taken photos by the researcher, March 13, 2018*

Cross-border points that are the important boat landings for cross-border trade are Tha Sai Thoralek, Rim Moei village, Tha Sai Luad village, and Tha At village. These are the favorite cross-border points for bulk and many-round of boat transportation, and not far from the Thai-Myanmar Friendship Bridge. The boat landings in this area are both people and goods transport. There are warehouses and large grounds for laying goods along the Moei river bank. There are trucks running in and out the warehouse buildings all the day, though the road is very narrow. The road goes in front of Sai Tholalek temple and turns right to the boat landing where there are many warehouses. At the boat landing area a lot of goods are laying on the grounds. The goods are daily consumer goods such as sugar, soap, shampoo, instant noodle, rice, monosodium glutamate, vegetable oil, cosmetics, clothing, slippers, soft drinks, beers, and spirits, ready for boat transportation. The boat transporter told us that if the goods cross through the bridge, the transport cost is dearer because they have to hire trucks. If the goods go by boat they only lay the goods from Thailand on the Myanmar bank. (Figure 4)

The Myanmar trader will load goods from boat landing on to the trucks to distribute the goods to various towns. (Hai Brue, interview, September 17, 2018; and Po Nay, interview, September 18, 2018)



**Figure 5. The cross-border point at Tha At village.**

*Source: taken photos by the researcher, March 31, 2018*

The cross-border point at Tha At village, (Figure 5) Tha Sai Luad sub-district, is the boat landing for both the legal and illegal goods from Myanmar, and storing place for transit goods in Thailand to transport to Myanmar. The type of goods will be second-hand goods such as bags, brand-name shoes, cars, trucks, jeeps, old Japanese vans imported from China. Many of them are parked at the area before reaching the boat landing. Many shops selling cheap bi-cycles are on the Thai bank, such as, foldable second-hand bi-cycle from Japan, pricing 800 to 1,500 baht. They are both wholesaler, retailer, and warehouse. These goods are transported from Japan through China, and using Thailand as transit to Myanmar. Though it is unofficial trade, it is both micro- and macro-economic systems. (Lasa, interview, March 31, 2018 and Lin, interview, March 31, 2018)



**Figure 6. Shop selling products from Myanmar and Myanmar traders in Mae Sot market**

*Source: taken photos by the researcher, March 11, 2018*



**Figure 7. Shop selling products from Thailand in the Burmese community**

*Source: taken photos by the researcher, March 14, 2018*

#### **4. Discussion and Conclusion**

From the study, it is found that Thai and Myanmar people living in the border area are related as relatives for a long time. Each cross-border point is the economic route for the unofficial cross-border trading activities, making income and better living for the border community, and it is also the migration route in the case of the unrest situation. It is so because there are many boat landings along Thai-Myanmar border spreading at various places. The people could take boat to cross the river at any time to exchange and trade agricultural produces for daily life. Though the cross-border trade is unofficial, but it could drive the economy well in the special economic zone according to the study of Sangkhapan, Boonprakarn, Deekhuntod, Wangbenmud, and Thammarat (2013). The study viewed that the people in the border area see the border line with many holes, so there is the condition of escaping the state for the cross-border people, and the exchange and trade of goods is in the form of the trade under the bridge.

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#### **Interviewee**

1. Chai, interview, March 16, 2018 at Mae Sot district, Tak province
2. Hai Brue, interview, September 17, 2018 at Mae Sot district, Tak province
3. Lasa, interview, March 31, 2018 at Mae Sot district, Tak province
4. Lin, interview, March 31, 2018 at Mae Sot district, Tak province
5. Ma Aye, interview, January 17, 2019 at Mae Sot district, Tak province
6. Nawpho, interview, March 13, 2018 at Mae Sot district, Tak province
7. Po Nay, interview, September 18, 2018 at Mae Sot district, Tak province
8. Saw Aung Tan Wei, Interview, March 22, 2018 at Mae Sot district, Tak province
9. Sininart, interview, April 25, 2018 at Mae Sot district, Tak province
10. Somboon, interview, March 15, 2018 at Mae Sot district, Tak province
11. Supho, interview, April 26, 2018 at Mae Sot district, Tak province
12. Sutha, interview, April 2, 2018 at Mae Sot district, Tak province
13. Tan Hwe, interview, January 18, 2019 at Mae Sot district, Tak province

# IMPACT OF INFRASTRUCTURE INVESTMENT ON LAND VALUES: A CASE STUDY IN HANOI, VIETNAM

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## **Abstract**

*This study is to examine an impact of infrastructure investment on change of land values, particularly public road transportation in urban areas. Based on principles of the land rent theory, developed by Alonso (1964) and Muth (1969), this paper carried out a survey of land users who use plots of land or own residential property in several new urban areas in Hanoi -Vietnam, as a case study. Our findings reveal that Centre distance, Mobility timing and Development opportunity have positive impact on land values, while Land use changes and Accessible amenity have no influence.*

**Keywords:** *infrastructure investment, land use change, land value, urban land.*

## **1. Introduction**

Infrastructure investment has been a subject of many studies for some time, like urban & regional planning, transport economics, land economics or public management and so on (Button, 1998; Gramlich, 1994). Especially, transport infrastructure is not only considered as one of the key elements for the economic growth and development, but also a crucial role in achieving the objectives job creation. The transport infrastructure has an impact on socioeconomic development (Helling, 1997). For the long-term economic benefits of investments in transportation, it might be organized into six groups, depended on some the types of benefit being measured, namely: output; productivity; production costs; income, property values, employment, and real wages; rate of return; and noncommercial travel time, according to Bhatta and Drennan (2003). However, positive impact of infrastructure investment on land values is a heart of this study.

In general, there was a bulky study to impacts of infrastructure investment on land values up to date. Mulley and et. al (2016) argued that studies related to the influences of infrastructures on land values being often qualitative research in earlier times, from 1970s. The majority of papers that assess the relationship between some kinds of transport infrastructure, a type of technical infrastructure, such as rail transit road etc., and land value, finding an increase in land value, while others have focus on impacts of social infrastructures likely parks, walked areas or green areas etc. on land values.

In recent years, after over the year 2000, there were a number of quantitative studies aimed to identify and measure changing value of land or properties, which had accessibility to different destinations around new investment infrastructures (Nguyen Thanh Lan, 2018). In addition, there are some papers using meta-analysis methodology to study relationship between infrastructure investment and land value, which are summarized in table 1 Specifically, (RICS, 2002), Debrezion et al (2007) and Jeffery J Smith and Gihring (2006) together provide major reviews of over 100 international studies on the influence of public transport on property (land and housing) values.

**Table 1: Some papers using meta-analysis methodology to study impact of infrastructure investment on land value**

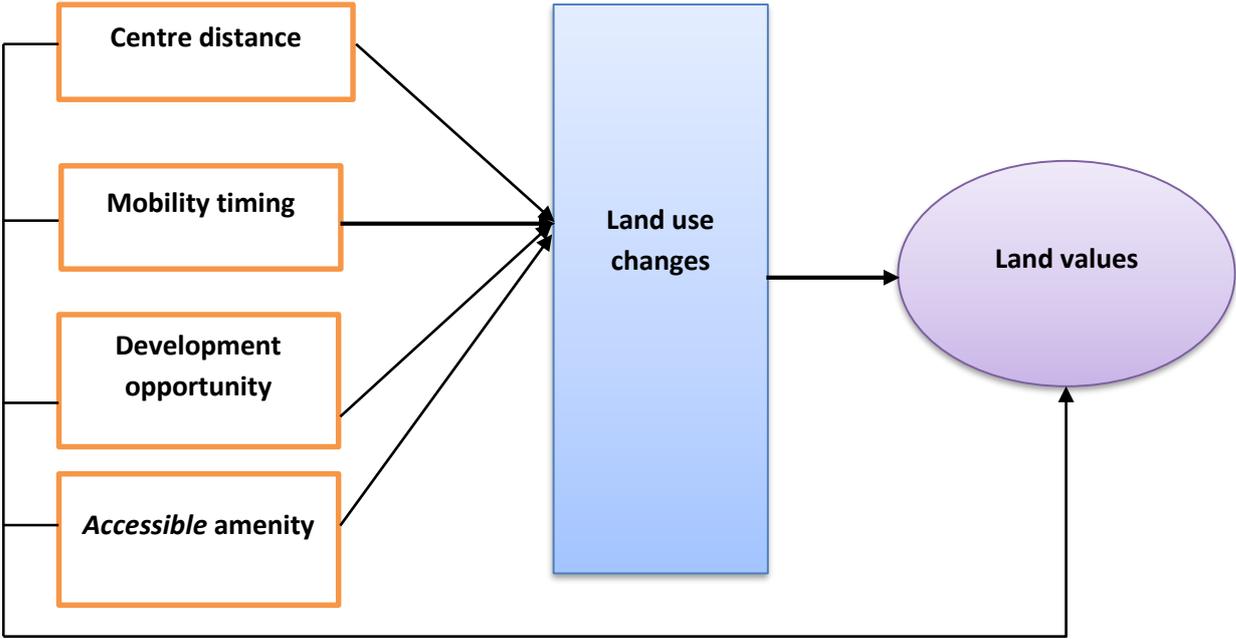
No	Authors	Year	Sample size (papers)	Findings
1	Vessali (1996)	1996	37	Accessibility to infrastructure had decreased land value (about 6 -7%), while changing land use purposes made a gradual amount of land values.
2	RICS (2002)	2002	150	- There has significant change in value uplift of land and buildings - A wide range of factors should study impacts on land values such as accessibility, land ownership regime location, development density etc.
3	Jeffery J Smith and Gihring (2006)	2006	76	Infrastructure investment has positive impacts on land value thanks to changing of accessibility;
4	Debrezion et al. (2007)	2007	73	The impacts of rail system on value uplift of residential and commercial properties are different
5	Mohammad, Graham, Melo, and Anderson (2013)	2013	102	Infrastructure investment made greater value uplift of vacant land than real estate (buildings)
6	Higgins and Kanaroglou (2016)	2016	130	Investment rail system contributed in land value uplift and this paper focus on impacts of TOD on land use and land value.
7	Saxe and Miller (2016)	2016	17	TOD and land use planning can make greater effects on land value.
8	Jeffery J. Smith, Gihring, and Litman (2017)	2017	138	Infrastructure investment may bring many prospects of economic benefits that effects on land value uplift in adjacent areas. However, land value may increase or decrease.

*Source: Nguyen Thanh Lan (2018)*

Generally, new transport infrastructure may increase land values due to improved accessibility and possible agglomeration benefits; however, the findings range significantly from place to place. It is noticeable that the findings may vary depending on not only types of transport infrastructure but land use purposes, types of real estate as well. Besides, the context and using methods used in some studies can make variety of results.

In this research, we assess the impact of transport infrastructure investment on land values in terms of land users’ preferences which has been largely ignored [Asadi Bagloee and et al (2017); Iacono and et al (2008)]; and we use Hanoi city, Vietnam as a case study. We see this as important for two core reasons. Firstly, has a strong growth economy with being numerous transportation investment projects but is still in many ways an emerging country, where there is not enough significant data about land values or land prices (as proxy variable). Secondly, we have extensive evidence on these impacts in the USA and Europe but little such evidence on developing countries like Vietnam.

This paper adopts the land rent theory, developed by Alonso (1964) and Muth (1969), the theoretical framework for the relationship between accessibility and land values. These theories purport that land rent (and therefore the underlying land values) reflects accessibility gradients with higher values of rent reflecting higher accessibility to goods/services after having transport infrastructure. The study also adapts conceptual framework for Gwamna and Yusoff (2016), so that the diagram for the conceptual framework is shown below.



**Figure 1: Conceptual Framework for the Study**

Drawing from the conceptual framework and basing on the literature, several hypotheses were formulated for this study. They are as follows:

*H1*: Centre distance has significant impact on Land use changes.

*H2*: Mobility timing has significant influence on Land use changes.

*H3*: Development opportunity has significant influence on Land use changes.

*H4*: Accessible amenity has significant influence on Land use changes.

*H5*: Land use changes have significant effect on Land values.

*H6*: Centre distance has significant influence on Land values.

*H7*: Mobility timing has significant effect on Land values.

*H8*: Development opportunity has significant effect on Land values.

*H9*: Accessible amenity has significant effect on Land values.

## **2. Method**

The survey research approach was adopted for this study. A comprehensive list of land value determinants thanks to investing public transports was generated from previous studies conducted in the study area. Scale development was also performed following the suggestions of literature review; and the questionnaire was designed with 6 main constructs and other variables.

The study instrument only employed closed-ended questions. For each proposed dimension, a related set of variables was utilized. The variables were measured on a bipolar 5-point semantic differential Likert type scale where 1 = strongly disagree and 5 = strongly agree. Face to face questionnaires are conducted by interviewers from December 2018 to February 2019. A total of 225 responses were collected evenly across some new urban areas in several districts of Hanoi city but, following a review of data quality and missing response elements, 212 samples were finally selected.

Item generation began with theory development and a literature review. Items were evaluated through interviews with practitioners. For the development and exploratory evaluation of the measurement scales for the exploratory factor analysis (EFA) on entire set and reliability estimation Cronbach's Alpha, which is one of the most widely used metrics for reliability evaluation (Koufteros, 1999). EFA was then used to determine how many latent variables underlie the complete set of items.

Based on EFA results, the AMOS (Analysis of Moment Structures) Graphic was used to model and analyze the inter-relationship between and among the latent constructs in this study effectively, accurately and efficiently (Hoyle, 1995). The

Confirmatory Factor Analysis (CFA) was performed for the measurement model of the latent constructs. Especially, the overall fit of a hypothesized model can be tested by using the maximum likelihood Chi-square statistic provided in the Amos output and their fit indices such as the ratio of Chi-square to degrees of freedom, goodness-of-fit index (GFI), the root mean square error of approximation (RMSEA), comparative fit index (CFI), normed fit index (NFI). After that, a hypothetical construct accounts for the inter-correlations of the observed variables that define that construct (Bollen & Lennox, 1991).

### **3. Results**

#### ***3.1. Descriptive Statistics***

There were 87 (41.0%) male and 125 (59.0%) female respondents. In terms of the respondents' occupation, about 28.8% of the interviewers was an official in public sector, 43.4% participants worked in private sector, and the other did part-time job. Across ranges of age, the dominant age group of the respondents was more than 50 years old (41.0%) and 31-40 (32.1%) that follows; 31 (14.6%) were aged less than 30 years, only 26 (12.3%) participants were 41-50 years old. Nearly 39.2% (83/212) of the interviewers lived in Ha Dong district. In terms of the respondents' living areas, it was distributed: South Tu Liem 36.3%, Thanh Xuan 23.1%, and others 1.4%. Regarding participants' level of education, 50% of the interviewers had high school diploma, while these figures of respondents having the degree of bachelor and master were 42.9% and 7.1% respectively.

#### ***3.2. Exploratory measurement results***

This study used EFA to determine how many latent variables underlie the complete set of items. An EFA was used to reduce these items to a smaller, more manageable set of underlying factors, which is helpful for detecting the presence of meaningful patterns among the original variables and for extracting the main factors, according to Hair et al. (2013).

**Table 2: The factor loadings**

	Component					
	1	2	3	4	5	6
LUC6	.863					
LUC7	.836					
LUC8	.879					
LUC9	.818					
OPT1		.795				
OPT3		.736				
OPT4		.884				
OPT5		.841				
DISTANCE1			.861			
DISTANCE2			.843			
DISTANCE3			.687			
TIME1				.859		
TIME2				.863		
TIME3				.793		
LV1					.685	
LV2					.806	
LV3					.800	
ACCESS1						.867
ACCESS2						.842
Eigenvalue:	4.662	3.587	1.961	1.681	1.250	1.129
Cumulative %	24.536	43.417	53.736	62.581	69.162	75.105
Sig. = 0.000; KMO = 0.783						

Depending on the result of EFA, there were six factors with new items and new names, which were checked against Cronbach's alpha and Corrected Item-Total Correlation. Cronbach's alpha is one of the most widely used to measure for evaluating reliability. The summary result of Cronbach's alpha value for each measure is shown at Table 2. The reliability for each construct was significantly high as above the value of .685, and KMO is 0.783, which is considered satisfactory for basic research.

### 3.3. Confirmatory factor analysis results

To refine the initial measures and test the internal consistency of the scale, a combination of exploratory factor analysis, confirmatory analysis (each construct individually) and item-to-total correlations were used. Depended on the results of these analyses, those items that had low item-to-total correlations were eliminated, as well as the items that had low factor loadings.

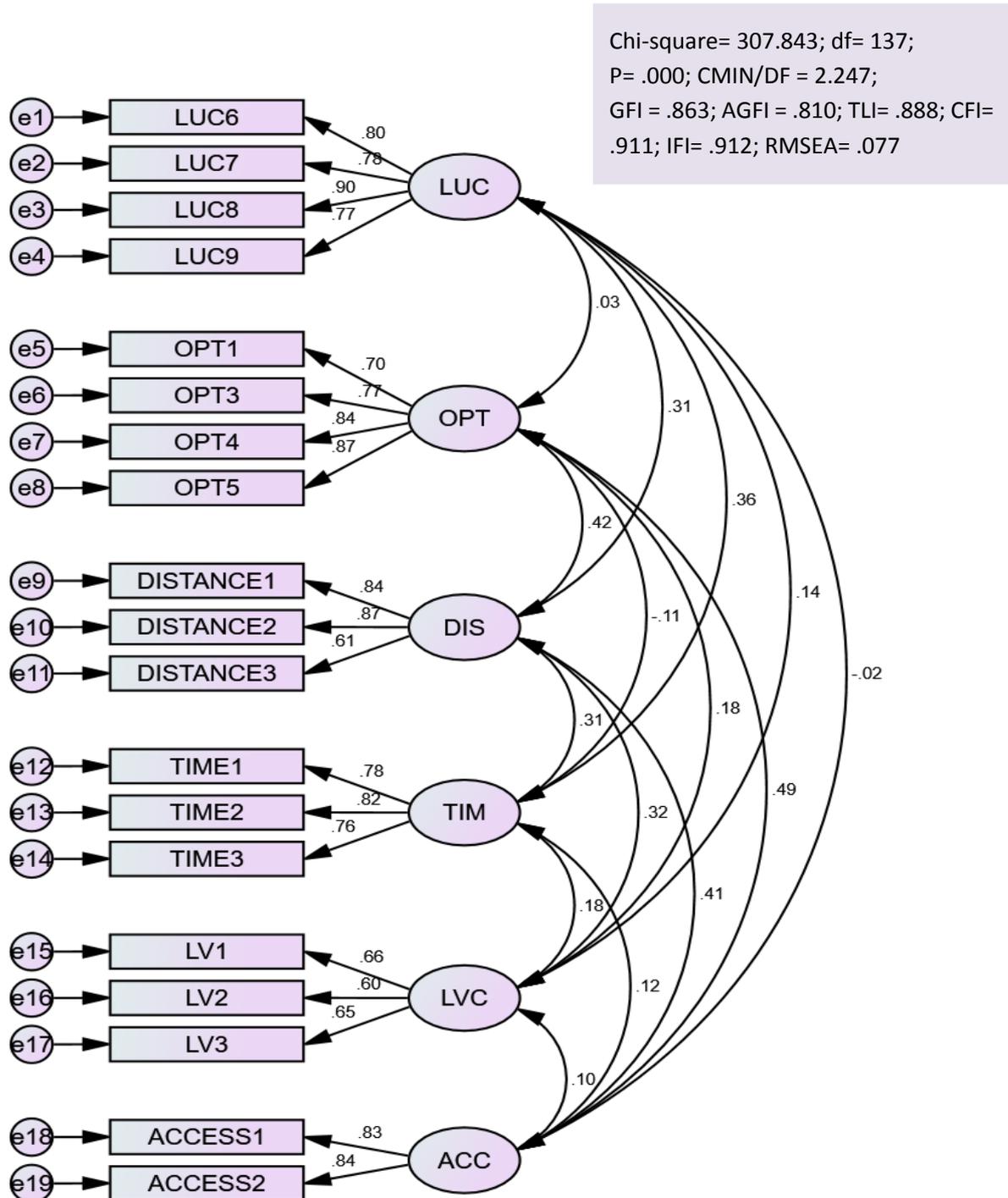


Figure 2: Initial Structural Model with Standardized estimates

The model was assessed and shown in the Figure 2. An examination of the overall fit statistics for the measurement model, indicated that the model provided acceptable fit to the data, with CMIN/df = 2.247 (<3). Even though the value of GFI (0.863), AGFI (0.810), TLI (0.888), and RMSEA (0.077) were quite low but CFI (0.911), IFI (0.912) stand out to demonstrate that model is likely to fit data.

In order to further improve upon the values of the fitness indexes of the Structural Model so as to have reliable results from the analysis, a pair of redundant items were also set as free parameters to improve the model. Figure 3 shows the Final Structural Model.

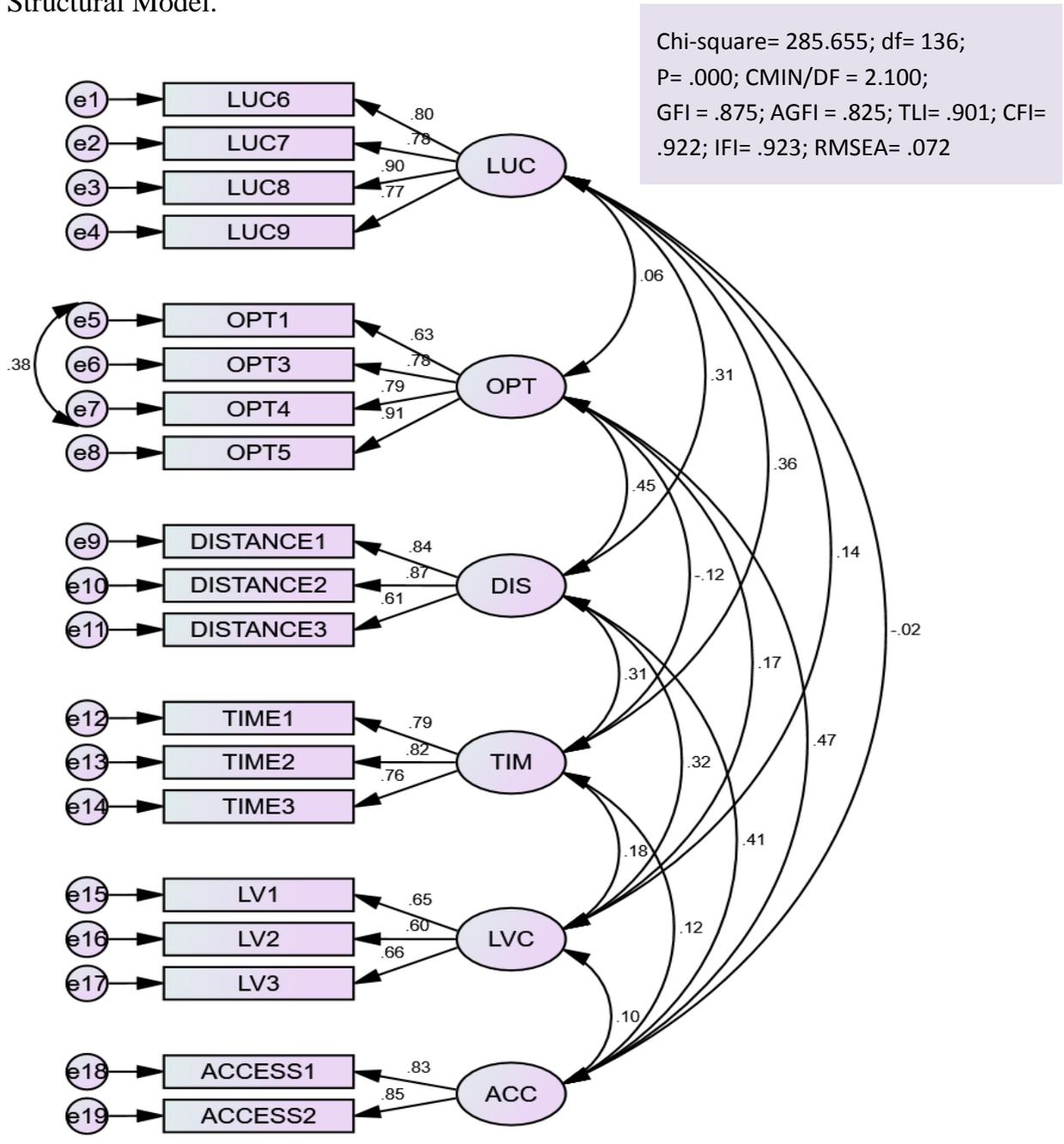


Figure 3: Final Structural Model with Standardized estimates

The final model fit with the data was evaluated using common model goodness-of-fit measures estimated by AMOS, which was than these of initial model. The model exhibited a fit value exceeding or close to the commonly recommended threshold for the respective indices values of 0.875, 0.825, 0.901, 0.922, 0.923 for the GFI, AGFI, TLI, CFI, IFI are satisfactory with respect to the commonly recommended value of equal to 1.0. RMSEA (0.072) which satisfied the threshold of 0.2. In brief, the final model is reasonably considered to fit with the data collected.

The assessment hypothesis is based on results in Table 3 where standardized estimates and their significance level are provided. A positive sign of parameter estimate indicates a positive direct effect.

**Table 3: Results of hypothesis testing**

Hypothesis	Estimate	S.E.	C.R.	P	Result
LUC <--> OPT	.020	.026	.778	.436	Not Supported
LUC <--> DIS	.139***	.038	3.670	***	Supported
LUC <--> TIM	.160***	.039	4.079	***	Supported
LVC <--> LUC	.036	.024	1.532	.125	Not Supported
LUC <--> ACC	-.008	.039	-.195	.845	Not Supported
LVC <--> OPT	.035*	.019	1.811	.070	Supported
LVC <--> DIS	.090***	.028	3.239	.001	Supported
LVC <--> TIM	.049*	.026	1.880	.060	Supported
LVC <--> ACC	.031	.028	1.087	.277	Not Supported

Notes:

\*\*\* Significant at 0.01 level

\*\* Significant at 0.05 level

\* Significant at 0.1 level

Based on the result of regression in this study, our following hypothesis for land use changes: “Centre distance has significant impact on Land use changes” (H1), and “Mobility timing has significant influence on Land use changes” (H2) are supported by data. Similarly, there are evidences to support several hypotheses for land value namely: “Centre distance has significant influence on Land values” (H6), “Mobility timing has significant effect on Land values” (H7), and “Development opportunity has significant effect on Land values” (H8). In contrast, the data does not support the rest hypotheses, which is an unexpected result by virtue of the previous literature review on the relationship between land use changes, accessible amenity and land value.

Especially, the results have shown that a positive relationship between Centre distance, Mobility timing and Land use change. In other words, if there are change of land use thanks to public transportation investment, the Centre distance and Mobility timing will be imprinted a positive impact being about 13.9% and 16.0% respectively.

Moreover, in the terms of land value increment, the finding confirms a positive effect of Centre distance, mobility timing and development opportunity on land values. It means that if the effect of changes in land value is determined due to investment of public transport, the Centre distance, Mobility timing and Development opportunity will be contributed to a numerical quantity being 9.0%, 4.9% and 3.5% respectively. In particular, compared with other factors, the Centre distance had the strongest influence on change of land values.

#### **4. Discussion and Conclusion**

This study attains to adopt a conceptual model that explains how investment of public transport can affect land values in Hanoi city. The findings indicated that some hypotheses were supported by the data like 1, 2, 6, 7, 8 while the opposite (without supporting) is true for the rest hypotheses (3, 4,5, 9).

Generally, the major findings are that owing to investing public transport, the Centre distance, Mobility timing and Development opportunity have positive influence on land values, however there is no significant relationship between Land use changes, Accessible amenity and land values in the scope of this study.

Some findings of this research work may have extended to the body of knowledge of urban economics, real estate economics and land administration in general, and urban land use and land values in particular especially as it relates to urban development in developing countries. Based on understanding the relationships among factors it can be provided more information for planners to manage urban development, property investors to make a decision investment in property, policy makers to make policy, and researchers to refine our understanding of urban system.

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# HOUSING DEVELOPMENT FOR LOW - INCOME PEOPLE IN HANOI

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## **Abstract**

*Housing for low - income people has emerged as a major concern in developing countries, especially Vietnam. The present study sought to define the factors that influence the development of low - income housing in Hanoi - a densely populated city and also the economic - cultural center of the country. We used the statistical method, comparative method of housing data and projects implemented in the period 2008 - present. Then systematized the basic theory and analyzed the status quo for low - income housing. The results demonstrated that urbanization, migration, the gap of rich and poor people, and government policies have dramatically affected low - income housing. Therefore, building policies as well as enhancing many incentives and raising the incomes for people is one of the optimal solutions for the development of low - income housing.*

**Keywords:** *Housing, low income, urbanization*

## **1. Introduction**

According to the statistics, now the housing funds are not shortage but low-income people do not have accommodations or have to stay in cramped apartments because of the phenomenon of real estate speculation that the government has no effective policy to prevent. According to the Hanoi Department of Construction, in 2017, about 11 million square meters of new housing has been built, but housing for low – income people is only about 60,000 square meters. According to the statistics of Vietnam General Confederation of Labor, housing demand for low – income people in urban areas is expected to be 1 million units by 2020, but currently only over 10,000 units per year. At present, only 20% of workers in industrial zones have stable housing. It is estimated that by 2020, there will be approximately 33.6 million

square meters of housing for 4.2 million people. Currently, have 59 housing projects for workers in industrial zones with the scale of 66,950 apartments meet about 30 – 40 thousand people. Due to the gap between supply and demand, 284,000 households live simply and temporarily. The number of houses under 30 square meters (under 7 square meters / person) is 1,131,000. Most workers in industrial zones live in cramped apartments with poor sanitation. This negatively affects the health and well - being of workers. On the other hand, property prices in the real estate market have increased rapidly while incomes and accumulations of people are still very low; Especially the staff of cadres, civil servants and workers in the industrial zones are the ones who have main incomes from wages, the rise in wages does not keep with the rise of price in general market as well as the housing market in particular. Thus, the ability to own an apartment of these objects increasingly difficult.

## **2. Methodology**

The article uses statistical, described methods to analyze the factors impact on housing for low income. In addition, inheriting selective domestic and international researches have announced related to this topic: Selective inheritance of many related research are published in Vietnam and over the world. Collecting and researching domestic and foreign documents on housing issues for low - income people in Vietnam in general as well as Hanoi in particular. Contemporaneous, this topic uses selectively the data and information published in mass media. This article will answer the question:

What are factors that affect the development of low - income housing in Hanoi?

What is the current status of low - income housing development?

Which solutions to develop housing for low - income people?

## **3. Literature review on housing for low income people**

### ***3.1. Concepts***

#### ***Low - income people***

According to this research topic, the concept of low – income people defined here include only those who are able to receive the support and have solutions to return the incentives has been awarded. Those people who live in very old houses without repair or renovation.

Low - income people are the people who have a stable income and able to accumulate funds to improve the living condition, with the support of the State on long-term loans for installment payments, are created preferential conditions on land policies and infrastructure (the borrowers are able to repay the loan).

Low - income people are the people who do not have home or have a house but in narrow area, not more than 4 square meters per person.

### *Housing for low - income people*

**Housing for low - income people** is the term referring to houses, buildings, housing construction projects are built to solve housing demand for low – income people, poor people, people with economic difficulties, people who have jobs but have difficulties in arranging housing by the Government and the support of the benefactors through the form of the State will build, then rent or sell to these objects at preferential prices.

Low - income housing is usually operated by local government such as the district government or city government.

**In Viet Nam**, low - income housing is defined as houses which the State or organizations and individuals of all economic sectors to invest in building for the subjects specified by the Housing Law rent or hire - purchase (renters after a specified period of time are entitled to buy and is recognized ownership of that house) according to the regulations of the State.

### *3.2. Overview research relating to low - income housing*

Up to now, there have been many research projects on housing issues in Vietnam in general and in Hanoi in particular as well as many research topics on the status quo of social housing, housing for low - income people... are executed by the organization and individuals.

However, in the previous studies mainly focused on general housing development solutions, low - income housing is mentioned only as a small component of the housing system of the whole society, there are not many in - depth studies on this issue. There are several related studies as following:

Nguyen Manh Ha (2008) confirmed the necessity of social housing policy for a part of cadres and civil servants working in state agencies, the objects are entitled to the social housing regime that the State issued in the Journal of Foreign Information. Thereby, the article shows that the necessary to develop and finish this policy to meet the practical requirements, ensure social security and achieve the efficiency as desired.

Trinh Duy Luan (2009) outlined the principles for mobility, the relocation in resettlement conditions, the problems that social relations and economic relations cause to resettlement housing... Resettlement is not a mere movement, but a complex problem with many different aspects of life. The article also pointed out that in order to solve the housing problem in general and resettlement housing in particular, the most important point to note that we are in the process of operating the socialist - oriented market economy.

Le Thi Bich Thuan (2015) and research team from the Institute of Architecture Research - Ministry of Construction have analyzed the status of low - income housing in Vietnam's urban and scientific basis of architecture and construction technology to solve the problem of low - income housing in accordance with the current socio - economic conditions. Since then, proposed synchronous solutions from land use planning, architectural solutions, construction technologies, building materials for low - income housing. The research team also recommended policies and financial mechanisms for construction of housing for low - income people in urban areas in Viet Nam to create favorable conditions for low - income people to improve their houses.

In the world, housing programs in general and low - income housing in particular have been implemented for many years. From the experiences of developed countries in Europe to emerging economies countries in Asia, these projects have brought benefits to hundreds of millions people in many countries in which we can refer, learn. Therefore, in addition to the publiced relevant decrees and regulations, there are many materials include books, essays, articles in specialized journals. Here is an overview of some books, topics related to the thesis content:

Edgar O.Olsen (2001) focus studied about:

(1) Consider the justifications that have been offered for housing subsidies to low-income households and the implications of these justifications for the evaluation and design of housing programs.

(2) Describe the most important features of the largest rental housing programs for low-income households in the United States.

(3) Summarize the empirical evidence on the major effects of these programs

Jingchun Lin (2011) focused on providing an overview of low – income housing development around the world and briefly introducing the development of this segment in China. Since then, the author has provided some appropriate policy recommendations for the development of the affordable housing market of Guangzhou, China from the previous experience. In particular, with similar cultural and economic backgrounds, Guangzhou has many things to learn from experience of Hong Kong and Singapore to develop low – income housing.

Reem Abed Elkhalik (2014) provided general information on low – income housing in Jordan as well as the factors that influenced the demand for low – income housing. Simultaneously, the author also showed the current status of low – income housing here, thus designed some proposals for low – income housing development in Jordan.

## 4. Discussion and Conclusion

### 4.1. Actual situation of low - income housing in Hanoi

To evaluate the development of low - income housing in Hanoi, this article focus on the number of construction suppliers, the number of project, floor areas and the quality of housing.

#### 4.1.1. Achievement

##### *Quantity of the low - income housing:*

Recently, a series of housing projects for low - income people in Hanoi has been implemented such as: Houses in Sai Dong, Long Bien; New urban Dang Xa, Gia Lam, Ngo Thi Nham residential project, Ha Dong district, project of construction investment houses for low - income people in North of An Khanh ...

Hanoi has some housing projects for students such as housing for students at New Urban Area in My Dinh II and housing for students at New Urban Area in Phap Van - Tu Hiep.

**Table 1: Information of low - income housing projects in Hanoi**

No	PROJECTS	INVESTED CAPITAL (billion dong)	AREA (m <sup>2</sup> )	NO OF APARTMENT	CAPACITY
1	Low – income housing in Sai Dong	647	45,704.4	840	4,000
2	Housing for students at New Urban Area in My Dinh II	979	95,000	1,300	7,500
3	New urban area in North of An Khanh	3,391.45	746,650	5,196	17,485
4	Housing for students at New Urban Area in Phap Van – Tu Hiep (Hoang Mai district)	1,900	210,000	1,400	20,000

(Source: <http://www.vinaconex.com.vn>, <http://diaocvietonline.vn>, <https://batdongsan.com.vn>)

In 2014, Hanoi has 66 social housing projects have been implemented with 5,016,977 square meters floor. Therein, 44 social housing projects, low-income housing equivalent to 37,800 apartments; 10 housing construction projects for students with 362,775 square meters floor, meeting 39,144 students; 12 housing projects for workers.

By 2016, 36 social housing projects have been completed in Hanoi, bringing the total floor area up to 1,347,000 square meters, only reached 75% compared with the target of the State and practical needs. And arranged and settled accommodation for 11,800 households.

Reported at National Online Conference about social housing, houses for workers in 2016, Mr. Pham Hong Ha – Minister of Construction informed that 3.7 million square meters of social housing in urban areas and industrial parks has been put into use in Hanoi up to now, contributed to solving housing for nearly 500,000 low - income people, workers in urban and industrial areas. According to calculations of the actual housing needs, the needs of social housing, low - income housing, official housing, resettlement housing; development results to the end of 2015 are as follows:

**Table 2: Needs of social housing, low - income housing, official housing, resettlement housing: Results of the implementation to 2015**

Indicators	Low – income housing (m <sup>2</sup> )	Housing for workers (m <sup>2</sup> )	Housing for student (m <sup>2</sup> )	Official housing (m <sup>2</sup> )	Resettlement housing (m <sup>2</sup> )
According to the indicators of housing development program was approved by the Prime Minister	1,800,000	1,600,000	540,000	1,400	1,600,000
According to actual demand to 2015	1,800,000	485,034	540,000	0	1,600,000
Results of the implementation to 2014	534,734	150,320	303,037	900	618,360
Results of the implementation to 2015	1,346,670	245,749	363,008	1,400	839,460
Compared with actual demand	453,330	239,285	176,992	0	760,540

(Source: <https://sotaichinh.hanoi.gov.vn>)

**Table 3: Plan for housing development in Hanoi in 2015  
and the period of 2016 – 2020**

<b>Indicators</b>	<b>Social housing for 9 subjects according to Decree No. 188 in 2013 (m<sup>2</sup>)</b>	<b>Housing for workers (m<sup>2</sup>)</b>	<b>Housing for students (m<sup>2</sup>)</b>	<b>Official housing (m<sup>2</sup>)</b>	<b>Resettlement housing (m<sup>2</sup>)</b>
According to the indicators of housing development program was approved by the Prime Minister (accumulated 2012 – 2015)	4,023,000	4,600,000	1,340,000	3,500	4,000,000
According to actual demand to 2020 (accumulated 2012 -2015)	6,023,000	813,288	1,340,000	0	4,000,000
Results of the implementation to 2015	1,346,670	245,749	363,008	900	839,460
Development indicator 2016 – 2020	4,676,330	567,539	978,992	0	3,160,540

*(Source: <https://sotaichinh.hanoi.gov.vn>)*

Long - term plan from 2016 - 2020 of People's Committee of Hanoi, based on actual demand for social housing is 6,023,000 m<sup>2</sup>, increased nearly 50% compared to expected (4,023,000 m<sup>2</sup>). People's Committee of Hanoi has also announced plans to develop social housing by 2020, clearly shows that there are 22 projects with a total floor area of about 3,124,000 m<sup>2</sup>, estimated at 52% of actual demand, and reaching 78% of the target City Housing Development Program.

**Table 4: Housing and Urban Indicators to 2020**

<b>INDICATORS</b>	<b>UNIT</b>	<b>2009</b>	<b>2015</b>	<b>2020</b>
Urban population	Million	25.43	35	44
Urbanization's rate	%	29.63	38	45
Average number of people / household	Person	3.7	3.4	3.2
Average housing area /person	m <sup>2</sup> / person	19.2	26	29
<b>HOUSING DEMAND</b>				
Total of apartments/ houses	Million	6.76	10.2	13.5
Total area	Million m <sup>2</sup>	476	905	1260
Total increased area (compared with the current area)	Million m <sup>2</sup>	0	429	784

*(Source: Housing Profile – UN Habitat, 2010)*

In addition, by the end of 2014, there are 21 projects in Hanoi registered to convert from commercial housing to social housing with the scale of construction about 11,400 with the total investment of about 9,000 billions; 12 projects registered to adjust the structure of the apartment with the initial construction size of 3734 apartments adjusted up to 5,234 apartments.

#### *Quality of low - income housing:*

Referring to social housing, people often default think about cheap, small area, poor utility and obvious quality is also “cheap”. However, recently, the low – income housing is cheap housing but the quality of construction, technical infrastructure, society and services are better. Such as, from Dai Kim project to the most recent Minh Khai project always attracts the attention of buyers.

The low - income houses of Handico5 are always designed equivalent to the average apartment in the market with good materials, friendly environment. Besides, there are many smart utilities that give the residential area a beautiful living space of the residents. Not only home but also services, utilities, management, entertainment, community connection. For example, some projects will be able to provide sufficient facilities and services such as Sai Dong, Long Bien and Vinh Yen urban areas...

Many new urban areas grow up with the quality of infrastructure in accordance with modern standards. Trade shall, sport and entertainment services meet environmental standards, treatment of waste water such as: Linh Dam, Dinh Cong, Trung Hoa - Nhan Chinh new urban areas. Besides, there are many housing for low-income people, staff, teachers, students: housing for low income people in Xuan Dinh, Nam Dai Co Viet resettlement area ...

#### *4.1.2. Limitations*

However, up to now, the picture of low – income housing, resettlement housing in Hanoi is very fragmentary, lack of seamless.

#### *Migration and urbanization issues*

Rapid urbanization has led to a large urban-rural migration rate, especially in large cities such as Hanoi and Ho Chi Minh City. As a result, demand for housing is rising, especially for low – income housing. Migrants to cities often have to live in rented houses, temporary houses.

**Table 5: Distribution of housing in Hanoi and Ho Chi Minh City between migrant and non - migrant households based on their current residence**

Characteristics of the household	Ha Noi		Ho Chi Minh	
	Migrant	Non-migrant	Migrant	Non-migrant
<b>Kind of houses</b>				
Permanent house	52,0	78,4	11,7	28,2
Semi – permanent house	31,0	17,0	81,0	70,2
Durable wooden frame house	4,4	1,7	1,5	0,2
Simple house	12,5	2,9	5,7	1,4
Total	100,0	100,0	100,0	100,0
<b>Ownership</b>				
Private house	52,0	96,2	17,5	70,8
Rent from state	0,9	0,8	0,4	0,1
Rent from private	46,5	1,2	81,6	28,9
Collective house	0,1	1,7	0,1	0,0
House of the state & private	0,4	0,1	0,3	0,2
House has no ownership	0,0	0,0	0,1	0,0
Total	100,0	100,0	100,0	100,0

(Source: Mid - term housing and housing census 2014)

*High house prices along with large price difference*

Besides, the current situation in Hanoi is many projects being implemented at the same time, but the projects price has a very clear difference affecting the affordability to pay of households. With the same preferential land use fee, preferential loans, but housing projects for low income people sometimes have the price difference is double, some projects are less than 9 million/ m<sup>2</sup>, but some up to 15-17 million/ m<sup>2</sup>

**Table 6: Reference price of some housing projects for low – income people**

NO	NAME OF PROJECT	PRICE (/M <sup>2</sup> )
1	Social housing project in Minh Duong, Son Dong, Hoai Duc district	8,5 million dong
2	Social housing project 143 Tran Phu (Ha Dong)	16million dong
3	Low – income housing construction project – B4– CT1 and B5 – CT2, North of Co Nhue, Chem	10 –13 million dong
4	Social housing project 30 Pham Van Dong	14.9 million dong
5	Dang Xa, Gia Lam Urban Area	9 million dong
6	Song Da high – rise apartment buildings, Tran Phu, Van Quan, Ha Dong	15 – 17 million dong

(Source: <http://hosomuanhathunhaphap.blogspot.com>)

*Land and housing funds for low-income people are severely lacking*

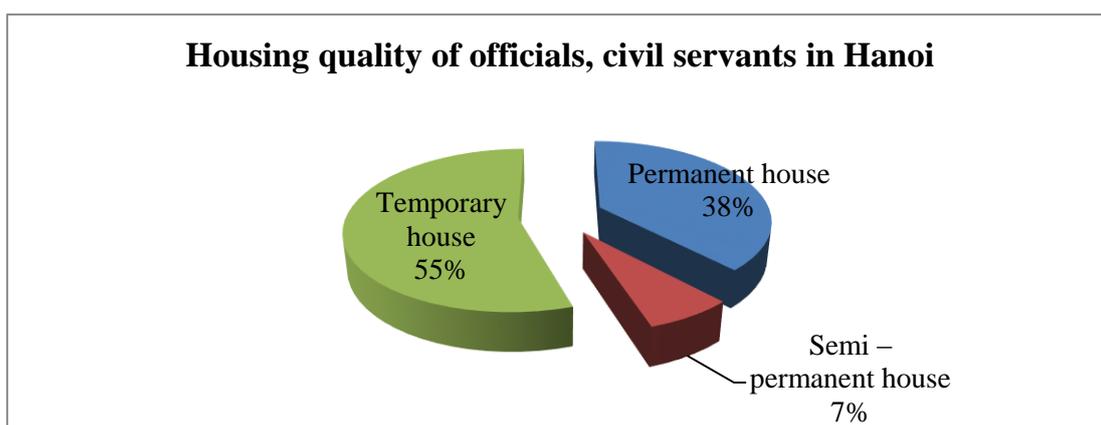
Hanoi is currently in serious housing shortage, especially for low and middle income people, and immediate needs at least 7 million m<sup>2</sup> of housing, equivalent to 120,000 apartments for those who need home urgent in the area. According to the investigation of JICA (Japan), the demand for housing for rent, hire purchase of officials, civil servants, workers... about 18,000 apartments, therein the poor need to improve housing about 30%.

In 2017, the total area of new housing in the city is about 11 million m<sup>2</sup>, of which there are only 60,000 m<sup>2</sup> of social housing, and 164,000 m<sup>2</sup> of resettlement house.

According to the new results published by the Ministry of Construction, currently only 22% of the nearly 3 million students are in the dormitory; only 20% of 1 million direct workers and about 1.2 - 1.5 million indirect workers have accommodation; about two thirds of the 2 million officials and civil servants have their own houses, the remainder must live in the compound, tabernacle... Thus, Hanoi is now facing a lot of difficulties in housing. The average housing area of people receiving salary from the State budget and especially low – income people is low and does not guarantee the necessary living space.

With the population density is too large, housing problems become more urgent. Simultaneously, land fund for housing is extremely limited so the planning of housing in Hanoi needs long – term calculations to meet the needs of residents.

**Figure 2. Housing quality of officials, civil servants in Hanoi**

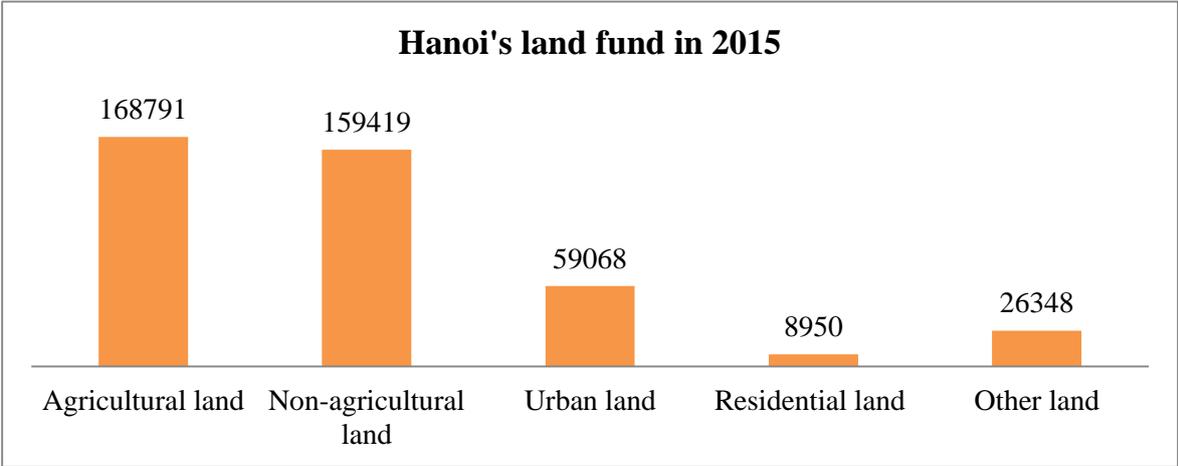


*(Source: The scheme on housing policy for officials and civil servants)*

Projects that serve other target groups are not as effective as expected. For example, the registration of schools on the number of students wishing to enter before implement to 15,000 students in the housing projects for students. The same situation occurred in the segment of housing for workers in industrial zones. Of a total 24 units with 1,084 rooms can serve nearly 10,000 shelters in the pilot project of Kim Chung

Commune, Dong Anh District serving workers in the North Thang Long Industrial Park, now have more than 3,000 vacant

**Figure 3. Hanoi’s land fund in 2015**



(Source: Statistics Office in Hanoi)

According to the Resolution on the ratio of residential land, housing for the development of social housing in projects of commercial housing, new urban areas in the city have to spend 25% for residential land, or 25% of the floor area to develop social housing, low - income housing. However, by the end of 2015, in Hanoi, there is only the functional urban area North of Tu Liem (with an area of about 86.5 ha with a population of about 8,000 - 8,500 people have been approved by Hanoi People's Committee in June 2014) is to spend 25% of the land fund to develop social housing.

*Support policies are incompatible and synchronous*

However, while the demand for low – income housing is very high, the number of projects has been implemented very low, many switch housing projects remains slow have affected the target of creating low – income housing... as the national housing strategy outlined. The package 30,000 billion to support the development of social housing has a low disbursement rate, partly due to a lack of supply and projects eligible disbursement.

Moreover, State preferential policies have not really reached the enterprises, therefore, they can not encourage and attract enterprises to build social housing, low - income housing. In addition to being exempt from land use fees, rent for construction land for low - income housing and housing for workers, the enterprises involved in building social housing in Hanoi as well as across the country are not entitled to other incentives.

Enterprises which invested in construction of low - income housing are exempt from value - added tax (VAT) and corporate income tax (CIT) for four years

(According to Decision no. 67/2009/QD-TTg). However, after nearly 3 months, in Decision No. 96/QD-TTg dated 22 July 2009, the investor is entitled to a 50% reduction in VAT only and entitled to corporate income tax exemption only in 2009. This lead to many enterprises are depressed due to changes in preferences. In addition, the incentive policies have indicated that enterprises are given priority loans, interest rate support... but it does not specify which banks apply this offer, so it is not easy to access loan.

The Government has not yet issued specific price regulations that make the prices of apartments inconsistent and lack of transparency; the standard of apartments is only general, which leads to people do not have the correct basis to compare the quality and price of the projects to make a reasonable choice

#### ***4.2. Some solutions to develop low - income housing***

##### *4.2.1. Facilitate to improve the low - income housing*

###### *Upgrade the quality of housing*

While the quality of low - income housing is a problem, this solution aims to safeguard people's lives, ensure minimum accommodation as well as improve living conditions while minimizing the cost of living. Simultaneously, in terms of technical infrastructure, it is recommended that the State and citizens work together in which the State acts as the main investor and the citizens contribute labor to reduce the burden on the low income people.

*Development and expansion of low - income housing construction projects with the installment payments*

Buying a house for low - income people is very difficult without the support of the State. The State can apply supportive policies to people who buy houses, such as people can pay in different phases: pay 50% of the value in phase 1, pay 30 % of the value in phase 2 and the rest can be paid in 5-10 years ...

##### *4.2.2. Develop investment in low - income housing market*

Liberalization of housing construction for low - income people: all components and all types of businesses, organizations and individuals that meet technical and financial conditions are eligible to participate in low - income housing construction. Diversify forms of investment, types of housing development and business organization: private, state, joint-stock, joint-venture, cooperative. Besides, it is necessary to strongly encourage corporations, real estate investment companies, construction companies (including foreign corporations and companies) to have financial and technology capabilities directly invest into this field. In addition, strengthen the building materials market and services related to the construction and provision of housing for low - income people.

#### *4.2.3. Solutions for land - use planning*

For low - income housing, land funds are needed to connect with the workplace and public services, to form “The complex”: “Industrial zone - Housing for workers- public services”, “Universities - dormitories - public services”...

Hanoi needs to have detailed planning (including land fund assigned to enterprises for low - income housing construction). Long-term and widespread strategic planning must be completed, to provide a framework for linking policy and urban space so that the planning and investment in housing, the entire social infrastructure - urban space are basically developed according to urban planning.

#### *4.2.4. Financial solution*

*Having a financial system properly to ensure adequate supply of capital for production and maintenance of the housing fund and facilities, as well as creating the conditions for the purchase can be repaid over a long period.*

Establishing "Housing saving fund" (This fund is formed on the basis of the restructuring of housing development fund in localities). Funds are formed by contribution of employees salary at the prescribed rate (Some countries set 10-15%, the lowest is 3-5%). “Housing saving fund” for low - income people to buy houses and mortgages by itselfs and then pay off monthly for many years, maybe up to 10 years. Shift the focus from facilitating the supply side to facilitating the demand side. When the demand side has enough capacity to pay, the market will follow the supply and demand mechanism to meet that demand in terms of price, quantity and quality. Gradually, the competitive mechanism will operate vigorously, adjusting supply and demand relations and prices. In short, the market will perform its function of effectively mobilizing the resources of the society.

#### *4.2.5. Public-Private Partnership Solutions*

Vietnam can study the model of the German House Savings Fund in the direction of privatization and cooperation of public-private form (PPP). This is perfectly suited with present conditions, when the state budget is not enough to fully support the fund, while raising capital from non-state sector for funds has become the inevitable trend.

### **4.3. Conclusion**

Low - income housing is a problem that any nation or any city faces. The quality of low - income housing is also a measure of the development of the social security system life's quality, the beauty of architecture, the landscape of a locality and the whole country, confirm the social management level of the State and local government. The necessary condition is the housing issue is one of the top priorities,

must be resolved comprehensively and stably for the country can develop in a sustainable way in the coming time, strive to become a modern industrial country. Under the difficult conditions of our country in general and Hanoi in particular, how to build and develop low - income housing, social housing in a suitable way so that these objects stabilize their lives, peace of mind to work is very necessary.

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# PROMOTING MARKETING'S APPLICATION IN INVESTMENT PROMOTION IN PHU THO PROVINCE, VIETNAM

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## **Abstract**

*Today, marketing is not only applications for products and services but also to expand common applications in many fields, and other products. In particular, investment promotion is an application of marketing activities in the field of investment to attract investors to a specific locality. Based on the collection of secondary data related to research topics, the paper will analyze the current investment promotion and application of marketing tools in investment promotion of Phu Tho province in the period of 2013 - 2017. Thereby, proposed a number of recommendations to accelerate the application of marketing in investment promotion to enhance the effectiveness of the promotion of investment, contribute to attract investment capital serves the goal of economic development - social of Phu Tho province.*

**Keywords:** *Marketing, investment promotion, investment capital, Phu Tho.*

## **1. Introduction**

Investment capital is one of the prerequisites for the development of each locality. The attraction of domestic and foreign investment capital in the province plays a very important role in promoting the economic development of a locality. In order to attract investment capital, localities must introduce investors to the potential and advantages of localities. For this, the localities need to conduct investment promotion activities to attract investors to choose locality as investment locations.

Today, marketing is not only applications for products, services normally but also be extended to various fields and other products. Besides, in terms of local marketing, investors are the local customers. Accordingly, the marketing application in attracting investment is inevitable. Investment promotion is an application of marketing activities in the field of investment in order to attract investors to a particular locality.

Being a central province in the mountainous region of northwestern Vietnam, it is the center of science, technology, agriculture and forestry and the cultural, social and humanities center of the whole country. Phu Tho has many potentials and strengths to develop industry, small scale industry, forestry, mining and tourism. With these advantages, Phu Tho head of investment attraction in the northern mountainous provinces.

However, Phu Tho province is still a poor, so in the coming time, attracting domestic and foreign investment capital remains one of the top priorities of the province. Accordingly, the province has actively implemented the investment promotion and has applied the marketing tools in investment promotion. However, investment promotion activities in the province is now also not promote the province's potential, untapped efficiency of investment promotion tool in the process of mobilizing the potential investors. Therefore, the promotion of marketing applications in promoting investment in Phu Tho province is really necessary.

The paper will analyze the current investment promotion in Phu Tho province and the application of marketing tools in investment promotion; From the research results, some recommendations will be made to promote the application of marketing in investment promotion of the province to improve the effectiveness of investment promotion, contributing to the attraction of investment capital for economic - social development of the province.

## **2. Method**

### ***2.1. Theory on marketing's application in investment promotion***

#### *2.1.1. Concept*

According to SRI International, Investment promotion is a collection of activities to encourage corporations, private businesses or enterprises to invest in or expand their manufacturing business in their home country, thereby achieving the ultimate goal of increasing employment, turnover, export outputs and values, or other relevant economic benefits.

Another approach by Wells and Wint (2000) suggests that Investment promotion includes certain marketing activities undertaken by governments and

organizations to attract foreign direct investment [12]. These activities include: advertising, direct marketing mailing, investment seminars, organizing investment promotion delegations, participating in trade fairs and exhibitions, distributing publications and documents; direct marketing efforts; Facilitating investors to visit, exchange and cooperate with local businesses; assisting the foreign investors in obtaining the business licenses; preparing the projects; guidelines for feasibility studies and support services for investor's coming into operation.

In our country, the term “investment promotion “ is being used quite commonly, but there is no clear definition to be understood and applied uniformly. Right at the Prime Minister's Decision No. 03/2014 / QD-TTg dated 14/01/2014 detailing the state management of investment promotion activities does not define what is the investment promotion, but only listed principles and contents of investment promotion activities. Therefore, there are many different ways of understanding and applying this concept.

In general, we can understand the following: Investment promotion is a socio-economic activity aimed at improving the quality and effectiveness of attracting economic groups, enterprises, units and individuals inside and outside the country to their countries and localities for investment. Investment promotion is actually a marketing activity in attracting investment, the result of which is the investment capital attracted.

### *2.1.2. Contents of investment promotion*

Investment promotion includes the following main contents: Building investment promotion strategies, building image, building partnerships, providing services and support to investors, using marketing tools in investment promotion.

Developing an investment promotion strategy requires the following steps: Evaluate the needs and investment potentials, focus on sectors and regions where investment has been made; Build the investment promotion strategies.

Image building: For effective image building, the following steps should be taken: Identify investor's perceptions and image building's objectives; elaborate marketing topics; select and develop promotion tools and participate in marketing coordination programs.

Partnership building: Partnerships bring great benefits and effectiveness to enable investment promotion activities to be successful. There are several types of partnerships that fit into three main functions: Partnerships for product development, partnerships for marketing and partnerships in the field of customer services.

Providing services and support to investors: Support on investment and support services for investors throughout the project cycle from the initial planning stage and the survey stage, the stage of project establishment to the stage of project development and after issuing the investment license is also one of the very important aspects of the investment promotion.

### *2.1.3. The marketing's application in investment promotion*

In broad terms, marketing is activities designed to create and promote any exchange that satisfies the needs and desires of the person. Whenever one wants to persuade someone to do something, which means that he or she has performed marketing activities. It may be that the Government persuades people to make planned births; a political party that persuades voters to vote for their candidate in the presidency; A business persuades customers to buy a product.

In marketing, the term promotion is referred to as a basic tool aimed at communicating products and businesses to customers in order to convince them. Thus, from the perspective of marketing, it is possible to understand investment promotion as a tool to convey information about a locality, a country to investors with the goal of attracting investment into that locality or country. Using the marketing's tools in investment promotion: Public relations; Advertisement; Participating in fairs and exhibitions; Organizing conferences, seminars on investment opportunities; Organizing and participating in investment mobilization.

### *2.2. The process and research method*

To achieve the goal of the study, the authors performed research process and research methods as follows:

Step 1. Data collection. Within the scope of this study only use secondary data. First, the authors identify data needs and data sources to conduct research. Then, use the research method at the desk to collect secondary data. With data from the Phu Tho Statistical Office, Phu Tho Department of Planning and Investment, Report on Provincial Competitiveness Index of the Chamber of Commerce and Industry of Vietnam ...

Step 2. Data processing. After collecting data, aggregated, sorted and categorized by different topics. Then entered into the Excel software to calculate the necessary indicators and graph the illustrations.

Step 3. Analyze the data. Use descriptive statistics and comparative analysis to explain the data; the research results will be used as the basis for proposing recommendations for the research topic.

### 3. Results

#### 3.1. The attraction of investment capital of Phu Tho province in the period of 2013 - 2017

Over time, Phu Tho is interested in building and perfecting policies to create a favorable investment environment. The province has issued many preferential mechanisms and policies to attract investment capital into the province. Accordingly, attracting investment capital has been developing strongly, making Phu Tho become one of the leading provinces to attract investment in the midland and mountainous areas in the north.

**Table 1. The investment capital for development in Phu Tho province for the period of 2013 - 2017**

*Unit: billion VND*

No	Indicators	2013	2014	2015	2016	2017
1	State capital	5.758.341	5.813.228	5.643.436	5.508.068	5.157,0
2	Non-state capital	6.859.926	8.032.763	10.999.280	12.604.833	14.500,0
3	Foreign direct investment	839.936	1.070.960	1.424.163	2.978.300	4.000,0
<b>4</b>	<b>Total</b>	<b>13.458.203</b>	<b>14.916.951</b>	<b>18.066.879</b>	<b>21.091.201</b>	<b>23.657.000</b>

*Source: [3]*

In the period of 2013 - 2017, the investment capital for development in Phu Tho province will increase rapidly, the structure of investment capital will be shifted positively: Reduce investment capital from the state budget, increase non-state investment capital and foreign direct investment capital. The restructuring of this investment is consistent with the national and international development trends.

The annual investment capital of the province has significantly contributed to the economic growth of the province. Accordingly, the economy of Phu Tho province in 2017 reached a high growth rate, exceeding the target set, gross domestic product (GRDP) in 2017 at comparative prices in 2010 reached 35,634.5 billion, up 7.75% compared to 2016 (exceeding the plan of 0.25%); in which the industry and construction sector increased by 10.66%; service sector increased by 7.48%; agriculture, forestry and fishery increased by 3.74% [2].

#### 3.2. The investment promotion in Phu Tho province

##### 3.2.1. The strategy on investment promotion Phu Tho province

Based on the socio-economic development strategy of Phu Tho province till 2020 of the Prime Minister (2008) and on the Regulation on elaboration and implementation of the national investment promotion program in each period of the Prime Minister Prime Minister (2012), Phu Tho province invites investors in all areas towards low energy consumption and environmental protection.

In particular, it encouraged and attracted the following projects: infrastructure business in industrial parks, assemblies, agricultural mechanics, electricity, electronics, supporting industries, wood processing construction materials, high-class textile and apparel, beverage, agricultural projects applying high technology with large scale, modern technology in association with processing and consumption of products, development of transport services logistics, resorts, high-class recreation, shopping centers, supermarkets, western medicine production, education and training services, high quality health services... [1]

**Table 2. List of priority areas for investment to 2020 of Phu Tho province**

No	Area	Number of projects, programs
1	Agriculture and Forestry	11
2	Industry	19
3	Services and travel	11
4	Infrastructure	34
4.1.	Traffic	14
4.2.	Irrigation	11
4.3.	Power system	5
4.4.	Industrial parks, industrial clusters	4
5	Public sector, resources and environment	12
5.1.	Urban, public and environmental infrastructure	6
5.2.	Post and telecommunication, science and technology and information technology	6
6	Sociocultural	30
6.1.	Education - training, vocational training	11
6.2.	Health - society	6
6.3.	Cultural information	10
6.4.	Sports	3
7	Security and defense	4

*Source: [4]*

At the same time, Phu Tho province also encourages investment in the form of FDI, BOT, BT, BTO, 100% foreign capital.

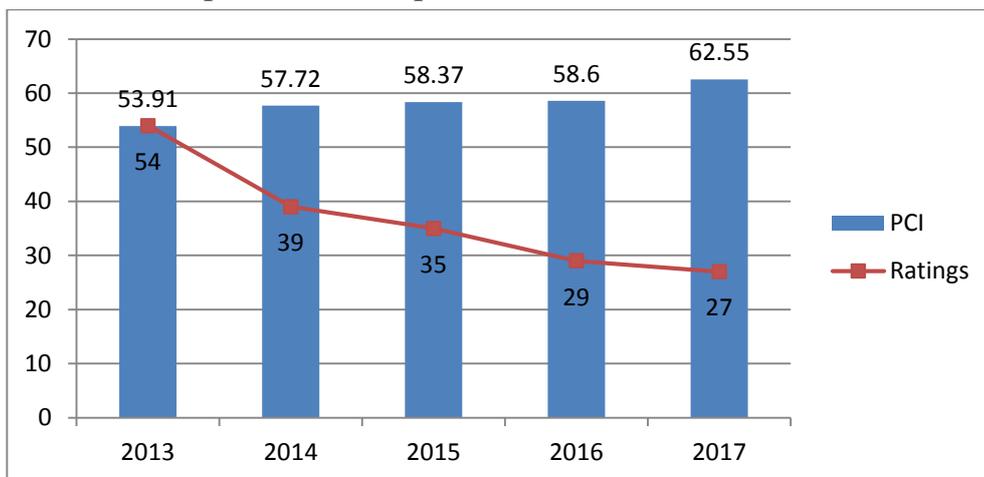
Especially, in 2017, Phu Tho province has set up an investment promotion program, focusing on researching and assessing potentials, markets, trends and

investment partners. Establishing databases in service of investment promotion activities; making lists of projects calling for investment; To set up publications and documents in service of investment promotion activities; propaganda, promotion, introduction of environment, policies, potentials and investment opportunities; training, strengthening capacity in investment promotion; support organizations, businesses and investors to learn about the laws, policies and procedures for investment, potential, markets, partners and investment opportunities; to implement the project after being granted the investment registration certificate; Implementing domestic and international cooperation on investment promotion [7].

Then, in 2018, the province will continue to develop investment promotion programs with the aim of attracting investment projects in the fields of high technology and supporting industries. focus on attracting investments by corporations large, the investment projects producing products with content of science and hi-tech, value-added, potentially large contribution to budget and socio-economic development of the province, investment projects using less energy and saving land. Strive to attract investment registered capital in 2018 (including FDI and domestic investment) from 5,500 to 6,000 billion VND, increasing by 10 - 15% compared to 2017. Investment promotion activities must be in line with the five-year and annual socio-economic development plans of the province; consistent with industry planning, land use planning of districts, towns and the list of investment priorities; create changes in action to improve the responsibility, quality and efficiency of investment attraction [8].

### 3.2.2. Image building

In the past years, Phu Tho province has been interested in building a image of a local with many potential and attractive investment and business environment, which is reflected in provincial competitiveness index.



**Chart 1. Provincial competitiveness index of Phu Tho province for the period of 2013 - 2017**

Source: [10]

In the period of 2013 - 2017, the provincial competitiveness index of Phu Tho under the assessment of investors continuously increase the score and increase the grade. In recent years, Phu Tho is one of the first localities in the administrative reform under OSS.mechanism. The province has built up the image of the land of spirituality exhausted, many potential for economic development and tourism. With abundant human resources, young workforce, high education level, friendly people; along with many preferential mechanisms and policies. Particularly, the dynamism and determination of the provincial leaders in improving the investment and business environment and accompanying enterprises; To renovate the thinking and the style of leadership, direct and organize the management of work in a deep, effective and practical spirit associated with rearranging the organizational structure of the lean and effective political system. Thus, contributing to attract investment capital for socio-economic development of the province.

### *3.2.3. Building partnerships*

Over the past years, provincial leaders have been interested in establishing relationships with provincial investment partners.

For local partners, the province has established long-term cooperation with other localities throughout the country. Especially, Phu Tho province has built up comprehensive cooperation relations with Hanoi capital. Accordingly, the two provinces regularly maintain, enhance the visit, work and attend major events of the two provinces and cities in the coming time. Promote exchanges and share experiences in the field of investment promotion and attraction, in the formulation and implementation of mechanisms and policies to support and attract investment; Solutions to create conditions for mobilizing more capital or other resources for development investment; Implementation of investment law policies, especially the implementation of investment projects in the form of public-private partnerships. In addition, the province has actively approached and directly mobilized a number of large corporations and corporations with financial and technological capabilities and markets to invest in a number of key projects; Follow up on difficulties and support implementation. Since then, the province has invited many big investors such as Trung Nam Group, Vingroup, Sun Group, Song Hong Thu Do, Thaco Truong Hai ...

For foreign partners, the province is regularly maintaining relations and exchange information with partners, timely specifying and implementing the contents of the cooperation agreement signed with the province of Nara (Japan Son Tay (China), Luong Nam Tha (Laos), Hwaseong City (Korea), bringing the external activities of the province more and more in depth, effective and real. In particular, Korea is the biggest partner. In 2017, the province has welcomed and worked with

more than 30 domestic and foreign businesses and investors to explore investment opportunities, including many investors from Japan, Korea, India, Taiwan, Hong Kong, Slovakia, Italia ...

**Table 3. Number of active projects of foreign partners in Phu Tho province**

*Unit: Thousand USD*

Nation	2014		2015		2016	
	Number of projects	Investment capital	Number of projects	Investment capital	Number of projects	Investment capital
India	1	20.000	1	20.000	1	20.000
Irac	1	15.100	1	15.100	1	15.100
France	1	5.000	1	5.000	1	5.000
Czech Republic	1	1.000	1	1.000	1	1.000
Indonesia	1	5.000	1	5.000	1	5.000
Korea	83	345.660,9	87	400.660,9	90	653.173
Taiwan	3	1.583	3	1.583	3	5.433
Japan	6	8.060	6	8.060	7	23.940
China	2	8.836	3	9.636	3	16.783
<b>Total</b>	<b>99</b>	<b>410.239,9</b>	<b>104</b>	<b>466.039,9</b>	<b>108</b>	<b>745.429</b>

*Source: [3]*

In addition, Phu Tho has been intensifying its contacts, requesting support from foreign representative offices in Vietnam and overseas Vietnamese representative missions to connect, formulate and establish relations. with the Province of Trento (Italy), Gyeonggi Province (South Korea), Bussy Saint Georges (France), ...

In addition, Phu Tho has been strengthening contacts, requesting support from foreign representative offices in Vietnam and Vietnamese representative offices to connect aboard to connect, build and establish relationships with the Trento Province (Italy), Gyeonggi Province (Korea), Bussy Saint Georges City (France), ...

#### *3.2.4. Providing services and support to investors*

Over the past time, leaders of Phu Tho province have focused on promoting business support. Particularly, the province has thoroughly grasped all departments and sectors to implement measures to improve the business environment, to support and develop all enterprises in the spirit of Resolution No. 19-2016 / NQ-CP dated 28

/ 4/2016 and Resolution No. 35 / NQ-CP dated 16/5/2016 to make Phu Tho becoming a new destination of domestic and foreign investors.

Besides, the province also actively supports and helps enterprises enjoy the preferential mechanisms and policies of the State and the province. In particular, the guide enterprises to carry out investment and business procedures and implement projects after licensing, support enterprises in seeking investment locations and information on policies and environment. investment, procedures for registration, adjustment of investment registration certificates ... are also many innovated in the direction of professionalism and efficiency

**Table 4. The documents on investment support policies in Phu Tho province in the period of 2010 - 2017**

<b>Numerical order</b>	<b>Text number</b>	<b>Content</b>	<b>Date</b>
1	04/2012/QĐ-UBND	Decision on investment support for investment projects in Phu Tho province	12/01/2012
2	25/2012/QĐ-UBND	Promulgating the Regulation on support for small and medium industrial enterprises to invest in modernizing and modernizing technologies in priority domains in Phu Tho province.	21/12/2012
3	15/2004/NQ-HĐND	The Resolution stipulates the specific support policies to encourage enterprises to invest in agriculture and rural areas in Phu Tho province in the period of 2015-2020.	15/12/2014
4	9/2017/QĐ-UBND	Decision promulgated specific mechanism to attract investment in Phu Ha Industrial Zone, Phu Tho town, Phu Tho province.	12/04/2017

*Source: Author synthesis*

The province has also issued preferential policies and incentives, allowing domestic and foreign investors to select locations, land areas and choose the form of land allocation for project implementation. The province has provided budget support for compensation and ground clearance for projects that are encouraged and attracted to investment; instructed electricity and water supply service providers to build roads to the fence of industrial zones and clusters; promoted s the mobilization of resources for investment in the construction of key socio-economic infrastructures. Many

important infrastructure projects were completed and put into use effectively, create more opportunities and conditions to promote development in the areas of social life in the next stage.

### *3.2.5. Use marketing tools in investment promotion*

Over time, Phu Tho province has developed and implemented many investment promotion programs. In order to be effective in investment promotion, the province used promotional tools in marketing, specifically:

#### *First, public relations.*

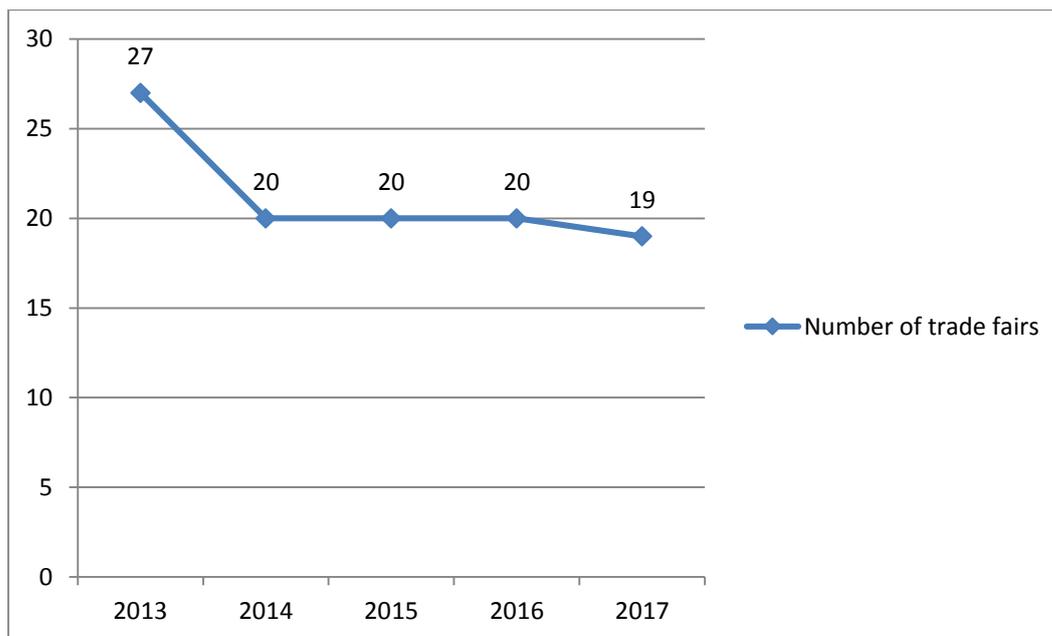
Phu Tho province has focused on building relationships with investment partners, the province has promoted direct investment contact with corporations, large corporations in the country such as Saigon Tourism Corporation; Hanoi Housing Development and Investment Corporation; Traffic Engineering Corporation (CIENCO). The leaders of the province had direct contact with the Embassies in Hanoi such as Embassy of Japan, Embassy of France ... In addition, the province has implemented the investment project in a strict and close way, and paid attention to the rights and interests of the people; The province has propaganda, advocacy and explanation so that the people understand clearly the meaning of investment projects for the local socio-economic development; Since then, there has been a consensus among the people in attracting investment into the province.

#### *Second, advertising.*

Phu Tho province has launched advertising programs through newspapers, radio, television and on the website of the Department of Planning and Investment ([www.dpi.phutho.gov.vn](http://www.dpi.phutho.gov.vn)), the Northern Investment Promotion Center ([www.ipcn.mpi.gov.vn](http://www.ipcn.mpi.gov.vn)) and the portal of the Ministry of Planning and Investment (<http://www.mpi.gov.vn>) to promote propaganda about the potential, opportunities and investment policies of the province.

#### *Third, participation in fairs and exhibitions.*

In the period of 2013 - 2017, Phu Tho province has actively organized trade fairs, on average 21 times per year. In particular, the Hung Vuong Fair is one of the annual series of provincial events held on the occasion of the Hung Temple festival for organizations and enterprises to promote trade promotion activities, promote and introduce their potential and production capacity, products and strong brands; at the same time, enterprises can look for investment opportunities, sign commercial contracts, and sell products to consumers.



**Chart 2. Number of trade fairs organized by the province from 2013 to 2017**

*Source: [10]*

In addition, the province has also actively participated in domestic and international fairs, in which there are trade promotion programs of Hanoi such as Regional specialty Fairs, Vietnam goods Fairs ... through which introduce the potential, strengths and support for specific products, advantages of Phu Tho province are promoted and accessed to capital's consumers.

*Fourth, hold conferences and seminars on investment opportunities.*

The investment promotion conference is not a new activity for Phu Tho province. Over the past time, provincial leaders have paid attention to organizing investment promotion conferences to introduce provincial investment opportunities to investors. Accordingly, the province has successfully held conferences and seminars on investment promotion in Phu Tho province for Korean enterprises (Hwaseong city); Chinese Enterprise (Tianjin City); Indian businesses (businesses introduced by the Indian Chamber of Commerce and Industry); thereby promoting the image, potential and advantages of the province to investors. In particular, in 2015, Phu Tho province held a large-scale investment promotion conference calling for investment promotion. This is really an opportunity for enterprises, organizations to survey, learn and evaluate the untapped advantages and potential of the province, from which plans for investment or cooperation with enterprises inside and outside the province to effectively implement the projects in the future. Accordingly, the province has attracted more 10 FDI projects with total registered capital of over 86 million, bringing the total number of FDI projects to 147 projects, with total registered capital of nearly US \$ 1 billion [6]. The success of the investment

promotion conference in particular, the activities of investment promotion in general in recent years has opened up new opportunities for wave investment in Phu Tho.

Not only investment promotion conferences in the province, Phu Tho also took the initiative in holding investment promotion conference in other localities in the country and abroad. Currently, the trend of Korean enterprises to invest in Vietnam is very large, the largest among the ASEAN countries. South Korea has been the largest investor in Vietnam with a total investment of \$ 59 billion (as of March 20, 2018). In two consecutive years, in 2017 and 2018, the province held an investment promotion conference in Korea to attract more Korean businesses to invest in the locality. In 2017, the province held an investment promotion conference entitled "Phu Tho - the potential and opportunities for investment" in Korea. Accordingly, Phu Tho province has 150 foreign-invested enterprises with a total registered capital of nearly 1.1 billion USD, of which 120 projects from Korea with a total registered capital of 793 million USD.

In 2018, the province held an investment promotion conference in Japan with the expectation of Japanese enterprises to continue expanding their investment in Phu Tho.- this is the second largest foreign investor in the province, with seven Japanese investment projects with total capital of nearly \$ 40 million focusing on wood processing, textiles and footwear.

This is a continuation of the investment promotion activities of the province with Japanese partners, creating a lot of prospects in the promotion of foreign investment. In the context of the global industrial revolution of 4.0, Japan is one of the leading pioneers in the world. Phu Tho is actively promoting and inviting Japanese enterprises to apply high technology in the province, which will be an important point, creating a pioneering advantage, boosting the economic surplus, contributing to raise management knowledge and improve the lives of workers.

#### *Fifth, organization and participation in investment mobilization.*

Apart from holding conferences and seminars on investment opportunities, the province also actively contacts and mobilizes direct investment for large corporations and corporations with financial, technological and market capabilities in order to invest in some key projects, such as the Belgian companies have invested in the metallurgical sector; production of industrial glue; medical equipment; beer production; processing tea, wood..., including Umicore Group; Soudal, VK company.

Through the introduction of the Department of Investment Promotion and Investment Promotion Center in the North, the province has been received and mobilized investment for investors from countries that need to learn about the investment's environment and preferential mechanisms and policies when invest in

the province. Coordinating and organizing investment promotion in Japan on the occasion of the provincial leaders attending the East Asia Conference with a view to attracting and calling for strong investors in the field of electricity and electronics; hi-tech agriculture in Mie and Nara provinces in Japan, enhancing the efficiency of investment promotion through bilateral investment promotion channels with neighboring provinces.

Tools for investment promotion continued to be completed such as adding information to the database, distributing provincial introductory books (which included information such as profiles, image maps, investment environment, general and sectoral plannings, industrial clusters, land use planning, information on investment projects) with DVD subtitles in English and Japanese, Korean, Italian, Russian to serve missions senior leaders of the province when inviting investment promotion. In 2017, more than 1,500 sets of investment promotion documents were sent to interested investors, domestic and foreign diplomatic missions to visit, work and explore the investment environment of the province [10].

### ***3.3. General assessment on the investment promotion in Phu Tho province***

#### ***3.3.1. Results***

In recent years, investment promotion has made important contributions in attracting and using domestic and foreign investment capital effectively in projects, exploiting potentials and advantages with the socio-economic development of the province.

Provincial investment promotion activities and programs are built in line with the Party's policies and legal policies, in line with the province's socio-economic development strategy and national investment promotion programs; to ensure the attraction of domestic and foreign investment capital according to the socio-economic development orientations of the province.

The province has built a local image with great potential and a favorable investment environment. At the same time, actively establish long-term relationships with domestic and foreign partners effectively. Accordingly, in the province there have been some large domestic investors and the number of foreign invested projects has increased.

The province provides investors with many services and investment support activities that meet the needs of investors.

Using a combination of tools in the investment promotion program and achieved significant results.

#### ***3.3.2. Limitations and causes***

In addition to the achievements, the investment promotion of the province in the past years still have some limitations to overcome, specifically:

Firstly, although the province has paid attention to and developed the investment promotion program, however, the province has only implemented the decision in the last two years - 2017 and 2018; Moreover, investment promotion activities are lacking in synchronization, information on investment promotion has not followed the requirements of investors, some investment promotion activities stopped at the stage of contact and introduction. not closely follow, do not make investors clearly see the potential, advantages and economic benefits when investing in the province.

Second, although the province has been active in building relationships with local and foreign partners; However, this work has not really achieved high efficiency. The number of investors coming to learn about the investment environment and investment performance is low compared to the potential of the province; In particular, it has not attracted many big projects with high technology content; Foreign partners are mainly in developing countries, the number of investment projects of developed countries in the province is low, not attracting many prominent foreign investors.

Thirdly, the province has provided land-related assistance to investors, however, the land fund for investment promotion is limited, the transportation is not convenient; In particular, the time for transportation of goods from Phu Tho to Hai Phong port remains a concern for foreign investors, especially Japanese investors.

Fourthly, the human resources in the locality are plentiful; however, there is a shortage of high quality human resources and skilled technical workers; , so the attraction of large investment projects is likely to contribute to the budget and projects using high technology environmentally friendly is limited.

Fifth, during the investment promotion process, although the province has used a combination of marketing tools to achieve high efficiency. Promotional tools, however, are mainly traditional tools, which have not yet applied many modern, relevant and highly effective tools in the context of the 4.0 industrial revolution, leading to Investors have difficulty accessing information.

#### **4. Discussion and Conclusion**

Over the past time, the investment promotion in Phu Tho province has made fundamental changes, attracting many domestic and foreign investors to production and business in the area, this not only creates especially important "step dance " for socio-economic development but also contributes to building and popularizing the image of Phu Tho province at home and abroad.

However, the investment promotion of the province still has limitations, which require the drastic and synchronized implementation of the whole political system. In

the current context, the issue raised in the investment promotion for the province is to continue attracting new investors and at the same time promoting the investors who have investment projects in the province, promote the project implementation or continue to expand investment in the province. Goals and objects of investment promotion activities need to be expanded, the content of promotional activities requiring extended to the deployment phase of the project.

To further exploit the potentials and strengths of the province, to create conditions for the mobilization of investment resources of various economic sectors for socio-economic development as well as to raise the efficiency of the investment promotion in the province; in the coming time, Phu Tho province should promote marketing application in investment promotion, specifically:

Firstly, continue to innovate investment promotion methods through the organization of investment promotion activities suitable to each object of investment attraction, especially transnational corporations, large domestic corporations; Strengthen the organization of seminars and seminars for investment promotion by thematic and specific partners, focusing on key markets such as Japan, Korea, Singapore, USA; Promote cooperation with foreign diplomatic missions in Vietnam, international organizations such as JETRO (Japan), KCCI (Korea), BOI (Thailand), IE (Singapore), EUROCHAM, AMCHAM..., international investment consulting companies to organize investment promotion activities and access to potential investors.

Secondly, to promote market research activities, which focus on both market investors and the local market in terms of the investment location. For the investor market, it is necessary to understand the their investment motives as well as investment aspirations for the local, in which focus on target investors. For the investment location market, it is necessary to focus on gathering information and researching experiences to attract investment in the province's advantageous fields such as tourism, agriculture and forestry, industry... to apply the experience of other provinces in the province.

Thirdly, to build a website for investment promotion of the province to provide information on the investment environment, trade and tourism in the province correctly, timely and quality for domestic and foreign investors wishing to learn and invest manufacturing and trading in Phu Tho. At the same time, the website will introduce policies on investment incentives, programs to support enterprises in the fields such as: Consulting investment projects, branding, conferences, seminars; introducing the images, culture, people, potential development in the fields of the province with the domestic and foreign businessmen and those who need to learn about Phu Tho. In addition, the need to regularly update the information related to

the promotion of the potential advantages and the list of priority projects to attract investment in the province on the website and other means of mass media, through events of investment promotion at home and abroad.

Fourth, strengthen the application of information technology in investment promotion, which emphasizes applications social networks facebook and design, build videos, short films about 30 seconds, 5 minutes, 10 minutes ... to promote the potential and advantages of the province in attracting investment through the youtube application.

Fifth, encourage and promote the direct participation of investors to promote investment location through direct referrals to other investors and posted the images on investment location on the social networking site.

Sixth, promote e-marketing applications in investment promotion. In order to implement this solution, there should be support and coordination and implementation of various departments to ensure the necessary conditions and build a healthy electronic transaction environment. The necessary conditions are: a stable internet connection with high speed; information posted on the internet is accurate, transparent, multi-dimensional and full; ensuring the safety information and security of commercial transactions. In addition, there should be a strict and effective legal corridor in ensuring the safety of internet trading transactions.

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# FACTORS AFFECTING CASHEW NUTS DEVELOPMENT IN THE CONTEXT OF CLIMATE CHANGE: RESEARCH IN BINH PHUOC PROVINCE, VIETNAM

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## **Abstract**

*This research done to discovery factors affecting cashew nuts quality in Binh Phuoc Province. Base on data collected from 200 observations processed by SPSS 20, with Cronbach's Alpha scale reliability testing techniques, factor analysis (EFA), correlation analysis and multiple regression analysis. The research results determined that there are 6 factors that directly affect the quality of cashew nuts at the research site. Base on the research results, the implications of governance have been proposed to be good for the quality of cashew nuts in the face of climate change.*

**Keywords:** *Cashew, factor, Climate, Binh Phuoc province, Vietnamese.*

## **1. Introduction:**

Cashew is one of the industry of Vietnam, and ranked 4th in the rankings of the world cashew accounted for 4% of export in the total volume and total turn over reached 14,847 tons equivalent to 128.78 million USD, reduced 5.08% in volume and 13.08% in turnover compared to 2018. The average export price is 9.23% equivalent to 8674.03 USD/ ton. In recent years, there has been a decrease in unimportant reasons.

Climate change is the main factor responsible for variations in cashew harvesting from year to year in Brazil (*Camargo, 2010*) giving global climate change forecasts, with relationships significant impact on cashew yield in Brazil. Climate change is posing risks for cashew production, cashew grower's livelihoods and their families around the world. Change in temperature and precipitation, rainfall patterns, as well as ebouxtrreme weather events can affect the production cycle and negatively affect cashew production. To develop a strategic approach that can effectively cope with climate change and its impact in cashew production, a development of inter - regional partnership called seed initiatives articles climate (c&c) have been set.

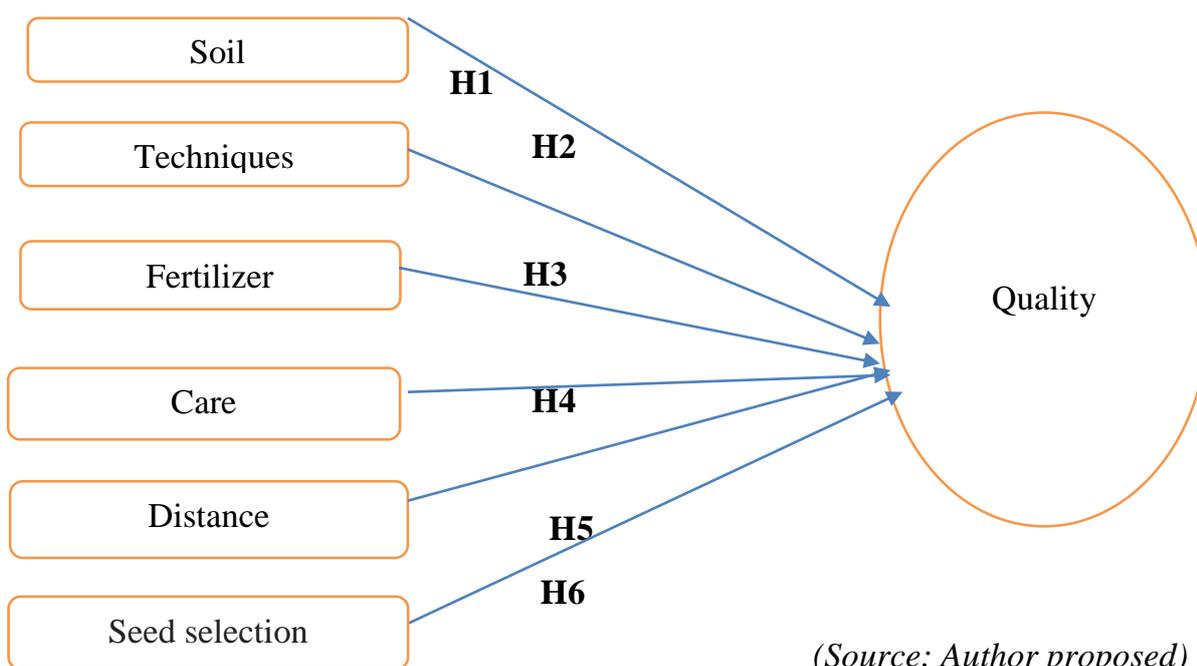
However, there's much competition in the world from the quality of cashew nuts, so the cashew growers increase in everyway that how to get qualitative cashews

and reduce the cost. There are many cashew researchers in the world such as *Nazneen, 2004, Davis, 1999. Albrecht và coworker (2009), Ali, S. H. A., & Judge, E. C. (2001)*. And some Vietnamese researchers: *Mai Thanh Trung (2011), Mai Thi Thuy Trang (2010), Lê Thanh An (2008)* researched about cashew development. The research purpose is analyze the factors affecting the development of cashew in the face of climate change. The research also examine the relationships of factor and impact level of each factor on the quality of cashew nuts grown by farmers. The results of this experimental research will be the basis for managers and farmers to have appropriate policies to improve the quality of cashew nuts.

**2.The method of research:**

The author’s research uses quantitative research method through 2 stages: preliminary research and official research. Preliminary research (qualitative techniques) are conducted by group techniques and interview experts, thereby adjusting the model and the scale to match the actual research situation. Measuring tool uses Likert 5 scale of succession of research with 21 observed variables measuring 6 independent factors and 3 observed variables measuring dependent variable *According Hair with coworker (1998)*, the minimum number of observation needed to analyze the exploratory factor (EFA) is  $N=5*X$  (Observed variables). In this research, the author used a large observation size to ensure reliability. So, the author’s official research passed with 232 direct surveys through simple random sample collection techniques. After rejecting 32 surveys form weren’t invalid, there were 200 surveys left in the analysis.

**Research model:**



### Research hypothesis:

Soil: H1 has the same direction relationship with the quality of Cashew

Techniques: H2 has the same direction relationship with the quality of Cashew

Fertilizer: H3 has the same direction relationship with the quality of Cashew

Care: H4 has the same direction relationship with the quality of Cashew

Distance: H5 has the same direction relationship with the quality of Cashew

Seed selection: H6 has the same direction relationship with the quality of Cashew

### 3. Research results:

#### 3.1. Describe research characteristics:

Objects of author's survey is 200 cashew growers in Binh Phuoc province, because it has suitable soil for perennial crops.

**Table 1: Characteristic of research samples**

Variable	Group classification	Frequency	Rate (%)
Sex	Male	72	36
	Female	128	64
Experience	Under 5 years	50	25
	From 5-10 years	50	25
	From 10- 15 years	50	25
	Over 15 năm	50	25
Area	Under 1 hectare	37	18.5
	From 1-5 hectare	70	35.0
	From 6-10 hectare	56	28
	Under 10 hectare	37	18.5
Qualification	High school	21	10.5
	Intermediate	2	1.0
	College	8	4.0
	University	165	82.5
	Over university	4	2.0
Age	From 30- 40 years old	68	34.0
	From 40- 50 years old	66	33.0
	Over 50 years old	66	33.0

(Source: Author's survey)

### 3.2. Verify the scale

**Table 2: Reliability coefficients Cronbach's Alpha**

<b>Observed variables</b>	<b>Number of variables observed</b>	<b>The observed variable coefficient The lowest total</b>	<b>Cronbach's Alpha</b>
Soil	2	.629	.772
Techniques	4	7.45	.890
Fertilizer	2	.900	.974
Distance	5	.719	.917
Seed selection	5	.645	.844
Care	3	.731	.879
Quality	3	.606	.802

(Source: Author's survey)

### 3.3. EFA factor distribution

The EFA independent variables results shows that there're 6 factors formed with 24 satisfactory observed variables. Coefficient KMO = 0,749 (satisfy condition  $0,5 \leq KMO \leq 1$ )  $\Rightarrow$  EFA for data is appreciate. KMO verifies Bartlett has meaning Sig.=0.000<0.05  $\Rightarrow$  Observed variables are correlated. Cumulative variance of factors reaches 76.865% > 50%. This shows that 6 factors explain 76.865% variation of observed variables.

The EFA dependent variables results shows that there's 1 factor formed with 3 satisfactory observed varriabes. Coefficient KMO = 0.692 (satisfy condition  $0,5 \leq KMO \leq 1$ )  $\Rightarrow$  EFA for data is appreciate. KMO verifies Bartlett has meaning Sig.=0.000<0.05  $\Rightarrow$  Observed variables are correlated. Cumulative variance of factors reaches 72.005% > 50%. This shows that 1 factor explains 72.005% variation in the quality of cashew. The above Cronbach's Alpha and EFA test results show that the scale of independent and dependent factors meets th requirements for value and reliability and will be included in the next research.

### 3.4. Correlation analysis:

The corelation matrix shows the significance of very small coefficients (Sig=0<0.005), so the correlation coefficients are statistically significant and are eligible to be included in the regression factor analysis. The inspection of regression assumption also shows consistent, non-infringing results.

**Table 3: Correlation analysis (N=200)**

**Correlations**

		F-DAT	F-Kythuat	F-FB	F-KC	F_CG	F_CS	F-CLHD
F-DAT	Pearson Correlation	1	-.002	.003	-.004	-.001	.001	.203**
	Sig. (2-tailed)		.980	.962	.950	.985	.993	.004
	N	200	200	200	200	200	200	200
F-Kythuat	Pearson Correlation	-.002	1	.000	.005	-.001	.002	.200**
	Sig. (2-tailed)	.980		.997	.939	.989	.976	.005
	N	200	200	200	200	200	200	200
F-FB	Pearson Correlation	.003	.000	1	-.002	-.002	.006	.342**
	Sig. (2-tailed)	.962	.997		.972	.979	.933	.000
	N	200	200	200	200	200	200	200
F-KC	Pearson Correlation	-.004	.005	-.002	1	.002	-.003	.341**
	Sig. (2-tailed)	.950	.939	.972		.975	.963	.000
	N	200	200	200	200	200	200	200
F_CG	Pearson Correlation	-.001	-.001	-.002	.002	1	-.005	.330**
	Sig. (2-tailed)	.985	.989	.979	.975		.940	.000
	N	200	200	200	200	200	200	200
F_CS	Pearson Correlation	.001	.002	.006	-.003	-.005	1	.152*
	Sig. (2-tailed)	.993	.976	.933	.963	.940		.031
	N	200	200	200	200	200	200	200
F-CLHD	Pearson Correlation	.203**	.200**	.342**	.341**	.330**	.152*	1
	Sig. (2-tailed)	.004	.005	.000	.000	.000	.031	
	N	200	200	200	200	200	200	200

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

*(Source: Author's survey)*

### 3.5. Regression analysis

Independent variables R <sup>2</sup> correct = 43%	Regression coefficients (β)	Coefficients β	Significance level	Multicollinear statistics	
				Dung sai	VIF
Constant	-0.07		0.000		
DAT	.205	.204	0.000	1.000	1.000
Ky Thuat	.200	.198	0.000	1.000	1.000
FB	.345	.341	0.000	1.000	1.000
KC	.344	.341	0.000	1.000	1.000
CG	.334	.331	0.000	1.000	1.000
CS	.154	.153	0.005	1.000	1.000

(Source: Author's survey)

**Notes:** DAT(Soil), kythuat (techniques) FB(Fertilizer) KC(Distance), CG (Seed selection), CS( Care),). R<sup>2</sup> correct =0.430. StatisticalF (ANOVA)=25.928 (sig=0.000). Durbin-Watson= 1.904

With the result of statistical value F=25.928 with Sig0.000 demonstrates the regression model is suitable for data in 6 variables. ViF coefficient of the other 6 variables with value < 2 show that there is no multicollinearity. R2 coefficient corrects 0.43 indicating that 43% of the variation of the dependent variable is explained by independent variables. Urban disperses randomly around the path to zero degrees and oscillates a lot at the amplitude +/- 1, indicating that the assumption of linear contact doesn't violate. Histogram frequency chart shows the standard distribution curve overlapping the frequency chart. Mean value is as small as 0 mean (0.00) and the standard deviation of 0.982 close to 1 indicates the distribution is not dispersed far from the straight line are expected so it can be concluded that the assumption of normal distribution is not violated. Thus the above liner regression model is suitable.

Unstandardize regression:

$$CLHD = -0.07 + 0.345 * FB + 0.344 * KC + 0.334 * CG + 0.205 * DAT + 0.200 * KH + 0.154 * CS$$

The regression coefficients bear the sign (+), which represents the independent variables having the same directional impact as the dependent variable. Comparison

of the impact level of these 6 variables on the dependent quality of cashew nut (CLHD) in the following order: We can see that the fertilizer factor (FB) has the strongest impact ( $\beta = 0.345$ ), next is distance (KC): ( $\beta = 0.344$ ) next is seed selection (CG): ( $\beta = 0.334$ ), then soil (DAT) with coefficient  $\beta = 0.205$ , climate factor (KH ) and the coefficient  $\beta = 0.200$  and finally the care factor (CS) with coefficient  $\beta = .0154$ .

#### **4. Discussion and Conclusion**

*Fertilizer factor* has the strongest impact on the quality of cashew, growers can choose suitable fertilizer for cashew, not only choosing on one or two day but also choosing feces, needs to plan specifically the development of cashew trees when fruits are available. And at the end of season, we need any kind of fertilizer to have big fruits and produce quality cashew. And we use organic fertilizer such as pig manure, compost to fertilizer the soil better.

*Distance factor* is the second factor impact on the quality of cashew. As distance between trees should be from 5-10 meters. With this distance can help the roots, foliage avoid touching each other to develop, convenient for care. Depending on the climate and the area where the plants grow well, sloping areas should be planted to avoid soil erosion.

*Seed selection factor* is the third factor. Seed selection needs farmers who have long-term experience or well-trained in university lecture hall, having collisions with reality, they can choose cashew tree which can develop strongly, to limit death after official planting.

*Soil factor* is the fourth impact factor. Cashew plants with good drought tolerance are not picky, but this is also a diseased plant like many different edible plants, it also suffers from a bacterium, fungus that causes root rot, harming leaf parts. Drying the soil after plowing under the sunlight for a long time, drying soil after plowing under the sunshine for a long time, while using antiseptic to disinfect soil before planting is necessary, can not be ignored.

*Climate factor* is in the impact of climate change is more and more serious in level with increasing input costs, leading high cost corollary, low profit and the risk of producing cashew nuts is unsustainable if at the beginning there is no farming technique to adapt to climate change. In fact, uneven rainfall, reduced annual total rainfall, severe climatic conditions in the dry season affect the sustainable development of cashew in Binh Phuoc. The obvious affect is that the late rain phenomenon causes cashew to divide early germplasm without focusing on

productivity and prolonging the dry season. In addition, drought and water shortage are becoming more serious.

*Care factor* is the final impact on the quality of cashew nuts. People weed around the stumps regularly, if the grass grows much, it creates favorable conditions for the development of pests. It is advisable to intercrop short-day plants such as legumes, while helping to take advantage of the area and help to keep the soil from losing nutrients due to soil washing. Shouldn't plan too big trees, it will lead to light scramble status, nutrients do not focus on growing cashew trees. In addition, regular pruning will create ventilation and help light distribute evenly. Phenomenon of scramble for light will not exist, easily take care of and follow the status of the tree. Do not cut too close or cut off the young shoots of the tree, avoid stripping the bark, should apply lime to the deep cut to avoid bacterial entry.

#### **4.1. Limited research:**

Limited research is to choose to perform sampling at Binh Phuoc. The reliability and universality will be even higher when expanding the research of cashew growing areas in Vietnam on a larger scale.

In addition, the sampling method needs a higher representation. This is a simple study, all issues are built on a quantitative scale based on the theory and previous research models, so there are limitations on the theoretical basis that may have many factors affecting better cashew quality.

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# PEOPLE'S LIFE AND EMPLOYMENT AFTER AGRICULTURAL LAND ACQUISITION IN YEN PHONG DISTRICT, BAC NINH PROVINCE

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## **Abstract**

*This study aims to assess the status of life and employment of people whose agricultural land is acquired in Yen Phong district, Bac Ninh province as a basis for proposing some solutions to the life and employment of people whose land is acquired more improved. Secondary data on land acquisition, natural conditions, socio-economic conditions in the study area were collected in the departments of Yen Phong district. Households whose land was acquired were divided into 03 groups. Household group I consists of households that have been acquired less than 30% of the total area of agricultural land currently in use; Household group II consists of households that have been acquired with 30% to 70% of the total area of agricultural land currently in use; Household group III includes households who have been acquired over 70% of the total agricultural land area in use. For each group of research households, 45 households were randomly surveyed. After land acquisition, the life and employment of people whose land is acquired are mainly better. However, some people after land acquisition are still in lack of jobs, unsecured incomes; there are many social evils, dust pollution; garbage has not been collected. Solutions to overcome these problems include guiding households to effectively use compensation and support money; planning to train and change jobs; invest in building additional apartments for employees; doing better environmental sanitation.*

**Keywords:** *Acquisition, Agricultural Land, Employment, Life, Yen Phong*

## **1. Introduction**

In the process of industrialization and urbanization, land acquisition for socio-economic development for national and public interests is inevitable, including agricultural land acquisition. This makes many households with all their land acquired or a part of agricultural production land have to change their careers or seek other jobs outside agriculture (Nguyen Van Suu, 2009). This is not an easy problem for many households and individuals whose agricultural land has been acquired due to their limited

qualifications, lack of appropriate vocational training, high age or psychological fear of changing jobs (Bui Ngoc Thanh, 2009). Besides, the acquisition of agricultural land also brings a great income for many households and individuals up to several hundred million VND that change their life but may also include some social evils loss of security and social order. In addition, some localities after land acquisition, many factories and enterprises have been built with a sudden increase in workers affecting security, order and living environment (Nguyen Thi Hong Hanh et al., 2013).

Like the whole country, Bac Ninh province is in the process of urbanization and strives to become a provincial city by the year 2022, so it will recover land and mainly agricultural land for socio-economic development in recent years. This is the largest and most concentrated in Yen Phong district. Specifically, 658.0 hectares of land have been acquired for Yen Phong industrial zone construction and 51.6 hectares for construction of an urban area to ensure accommodation for workers and professionals working in industrial parks and hundreds ha of agricultural land for construction of transportation, communication, electricity, water supply and other public works (Bac Ninh Department of Natural Resources and Environment, 2018). Therefore, the issue of ensuring life and employment for the objects of land acquisition is a big issue that needs to be addressed in order to ensure people's life, employment and income as well as ensuring security and security. social self. The study aims to answer the questions about how employment, income, life, society and environment of people whose agricultural land is acquired change? There should be solutions to overcome the limitations and negatives of land acquisition so that people whose land is acquired have better income and life and environment before land acquisition.

## **2. Method**

Life and employment assessment after land acquisition has some studies that focused on assessing the livelihoods of people whose land was acquired and taking livelihood approaches (Le Thanh Son & Tran Tien Khai, 2016), (Chamber, R. and R.Conway, G., 1991). Some authors focused on analyzing and evaluating social capital, human capital, physical capital, natural capital, financial capital (Minot, N. et al., 2006) but they have not clearly defined capital sources, overlapping capital sources, difficult to be assessed. Therefore, in this study, the author focuses on a number of key criteria to assess the changes in life and employment of people whose agricultural land is acquired, including criteria for labor structure and revenue structure, total income, housing quality, equipment, facilities, infrastructure, security, order and environment.

Secondary data on land acquisition, natural conditions, socio-economic conditions in the study area were collected at the Division of Natural Resources and

Environment, Yen Phong District Statistical Office. Study on the distribution of households whose land is acquired into 03 groups in accordance with the land law (Government, 2014). Households whose land was acquired were divided into 03 groups. Household group I consists of households that have been acquired less than 30% of the total area of agricultural land currently in use; Household group II consists of households that have been acquired with 30% to 70% of the total area of agricultural land currently in use; Household group III includes households who have been acquired over 70% of the total agricultural land area in use. For each group of research households, 45 households were randomly surveyed in November and December 2018 (02 years after land acquisition). Investigation criteria consist of changes in life, employment, income, society and environment of the subjects after land acquisition. The survey information includes name, age, address, educational level, number of participants of each household in production, business, translation and income levels, purpose of using compensation money, support, changes in housing, equipment, facilities, infrastructure, security, order, living environment... Collected data is processed by Microsoft Office Excel 2010. Comparison method is used to evaluate changes in income, employment structure, social issues, environment before and after land acquisition.

### **3. Results and Discussion**

#### ***3.1. Assessing life and employment of people whose agricultural land is acquired***

##### ***3.1.1. Overview of natural conditions, socio-economy of Yen Phong district, Bac Ninh province***

Yen Phong district center (Cho town) is 15 km from Bac Ninh town to the East; 29 km from Hanoi Capital to the Southwest, 8 km from National Highway 1A to the South, National Highway 18 runs through 15 km to Noi Bai International Airport to the West, 115 km from Hai Phong Port to the South, Highway 18 connecting Dong Anh export processing zone and Noi Bai international airport with Quang Ninh industrial and tourist zone runs through Yen Phong from West to East; Highway 3B Hanoi-Thai Nguyen, along with Road 295, Road 286, the road network of Yen Phong has many favorable conditions in the exchange, economic, cultural and social integration with the regions in and outside the province and internationally.

Yen Phong has a natural area of 112.5 km<sup>2</sup>, a large area of Bac Ninh province, a population of 171,592 people, accounting for 14.08% of the provincial population, (of which men: 79,786 people and women: 91,806) people) (Department of Natural Resources and Environment of Bac Ninh Province, 2018). Yen Phong has 14 administrative units (01 town and 13 communes). Yen Phong is developing economy with many industrial parks. The situation of developing such industrial parks greatly

affects the life of farmers. Because they can hardly catch up with the process of industrialization and urbanization. Yen Phong district has formed a number of new urban areas such as Yen Phong urban area, Cho Urban town...

### *3.1.2. Acquisition of agricultural land and employment, income of people whose agricultural land is acquired in Yen Phong district, Bac Ninh province*

In 10 years (2007-2016), the district has acquired 856.4 hectares of agricultural land of 2745 households and concentrated mainly in Dong Phong, Long Chau and Yen Trung communes because these communes are affected of land acquisition for construction of Yen Phong Industrial Zone and construction of works for the Industrial Park. Among households whose agricultural land is acquired, 625 households have been acquired with an area of less than 30% of the total agricultural land area being used, 463 households have been acquired with an area ratio greater than 30% and less than 70% of total agricultural land area is being used, 1659 households are acquired with an area of more than 70% of the total agricultural land area being used.

The vast majority of households have their agricultural land acquired with the main source of income from agricultural production, a small part with additional income from non-agricultural production (construction, mechanics, agricultural product processing, and production, handicraft production...) and from commercial and service activities (trade, hair cutting, skin care, transportation, real estate brokerage...). Specifically, the proportion of workers engaged in non-agricultural production is 24.25% of the total agricultural production and income accounts for 36.21% of the total income of a person; the proportion of workers participating in trade and service activities is 11.55% of the total agricultural production and income accounts for 21.89% of the total income of a population.

### *3.1.3. General characteristics of the surveyed households*

The survey results in Table 1 show that the average number of members of the household groups is approximately equal (from 5.3 to 5.7 people per household). The average working age is above 45 and below 50 with the primary education rate accounting for the majority, the highest is Group I with 45.5% of the total number of people in the group. After the acquisition of agricultural land, the number of agricultural workers in each of the three groups decreased and decreased the most for Group III (1.3 persons / household), whereas the number of non-agricultural workers increased sharply with 2 times (from 1.6 people/household to 3.2 people/household) because this group of households has been acquired agricultural land with a ratio of over 70% and the remaining agricultural land area is not enough to ensure life for in addition, households in this group have received a large amount of compensation for

land, assets attached to land and support for life stabilization, job search, and job conversion. to participate in non-agricultural labor.

### 3.1.4. Fluctuation of agricultural land and labor structure, income

Before land acquisition, the average agricultural land area of a household in different groups was not large (from 2345.3-2874.5 ha) but after the land acquisition, there was a marked change. The remaining average agricultural land area of a household in the lowest group III 390.9 m<sup>2</sup> is about 4.5 times smaller than the remaining average agricultural land area of a group I household (Table 2). This forces group III households to look for new jobs to ensure their members' life because the remaining agricultural land cannot guarantee income to meet the needs of their households. Many households in group III due to the remaining agricultural land are too small to be transferred or leased, lent this area and transferred to non-agricultural labor such as masons, mechanics, transport, repair and translation. motel, hotel, beauty care, real estate brokerage...

**Table 1. Basic Characteristics of Households**

Criteria	Unit	Household Group		
		Group I	Group II	Group III
Average number of people	people	5,5	5,3	5,7
Average working age	year old	45,3	48,4	46,4
Educational level				
Primary school	%	45,5	43,7	35,7
Secondary school	%	22,0	29,6	29,6
High School	%	32,5	26,7	34,7
Labor before land acquisition				
Agricultural labor	people/household	2,3	2,1	2,2
Non-agricultural labor	people/household	1,4	1,7	1,6
Labor after land acquisition				
Agricultural labor	people/household	1,1	1,2	0,9
Non-agricultural labor	people/household	2,2	2,5	3,2

Changes in labor structure of households after land acquisition towards reducing the rate of agricultural labor and increasing the rate of non-agricultural labor. Before land acquisition, all households participated in agricultural production (Table 3) but after land acquisition, many households did not participate in agricultural production and switched to non-agricultural or commercial production.

**Table 2. Changes in Average Agricultural Land Area of Household Groups**

Groups	Area before acquisition (m <sup>2</sup> / household)	Area after acquisition (m <sup>2</sup> / household)	Acquired area (m <sup>2</sup> / household)	Acquired area ratio (%)
Group I	2345,3	1740,2	605,1	25,8
Group II	2543,6	1172,6	1371,0	53,9
Group III	2874,5	390,9	2483,6	86,4

After land acquisition, the number of households continuing to produce agriculture is clear, especially for group III (only 3/45, accounting for 6.67% of the total households). The number of households participating in non-agricultural production belongs to the lowest group (only 7/45 households, accounting for 15.56% of the total households of the group) before land acquisition, but after the land acquisition, the number of households participating in production the largest non-agricultural (34/45, accounting for 75, 56% of the total number of households in the group). Regarding trade and service activities, group III has the most households participating (21/45 households, accounting for 46.67% of the total households of the group).

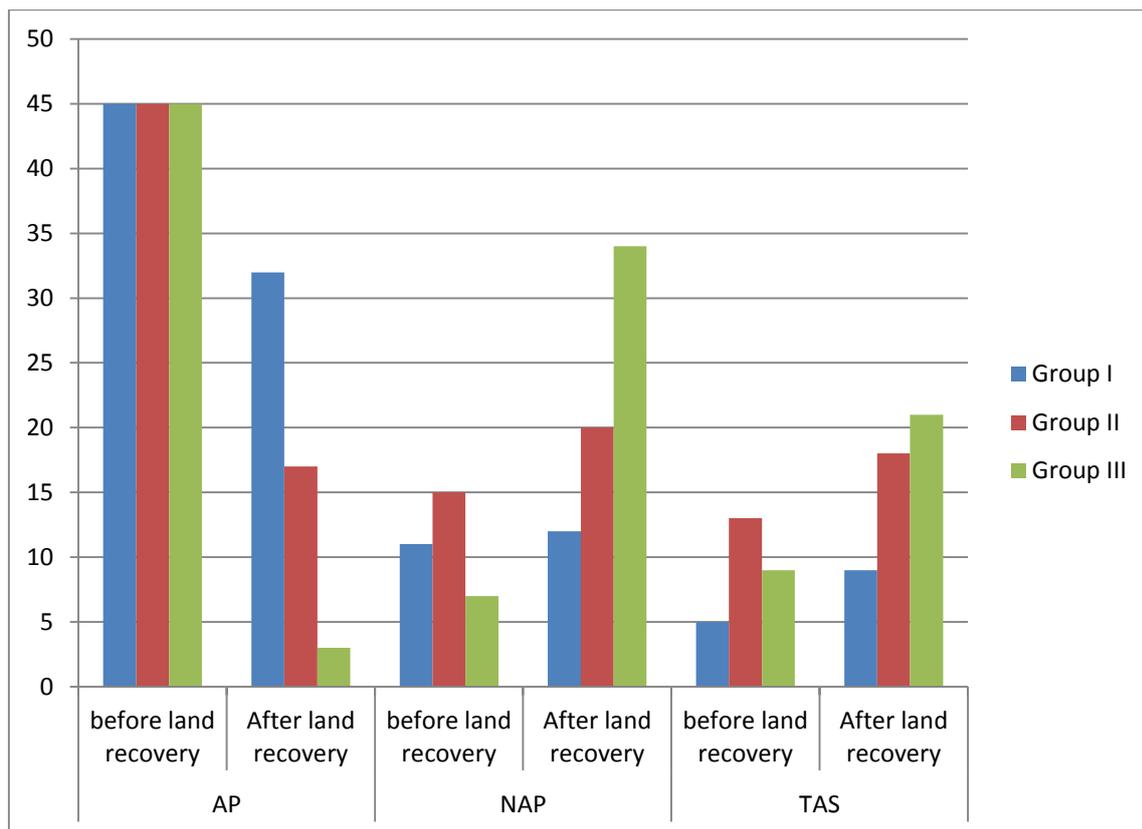
**Table 3. Fluctuation of Labor Structure of Household Groups**

*Unit: household*

Groups	AP		NAP		TAS	
	before land acquisition	After land acquisition	before land acquisition	After land acquisition	before land acquisition	After land acquisition
Group I	45	32	11	12	5	9
Group II	45	17	15	20	13	18
Group III	45	3	7	34	9	21

*Symbol: AP - Agricultural production, NAP - non-agricultural production, TAS - trade and services*

Figure 1 shows that, after land acquisition, labor involved in agricultural production of group I was the largest; labor is the largest in agricultural production and trade, the group III is the largest due to the main reason is the percentage of agricultural land acquired over 70%, the remaining land area is small, even households are not agricultural land has been acquired 100% of agricultural land.



Symbol: AP - Agricultural production, NAP - non-agricultural production, TAS - trade and services

**Figure 1. Chart of labor structure fluctuation**

Table 4 shows that the total income of a person in a month belongs to groups of households increased compared to income before land acquisition with different revenue structure and increase for each household group. Income from agricultural production of groups decreased but income from non-agricultural, commercial and service production increased and increased the most for group III.

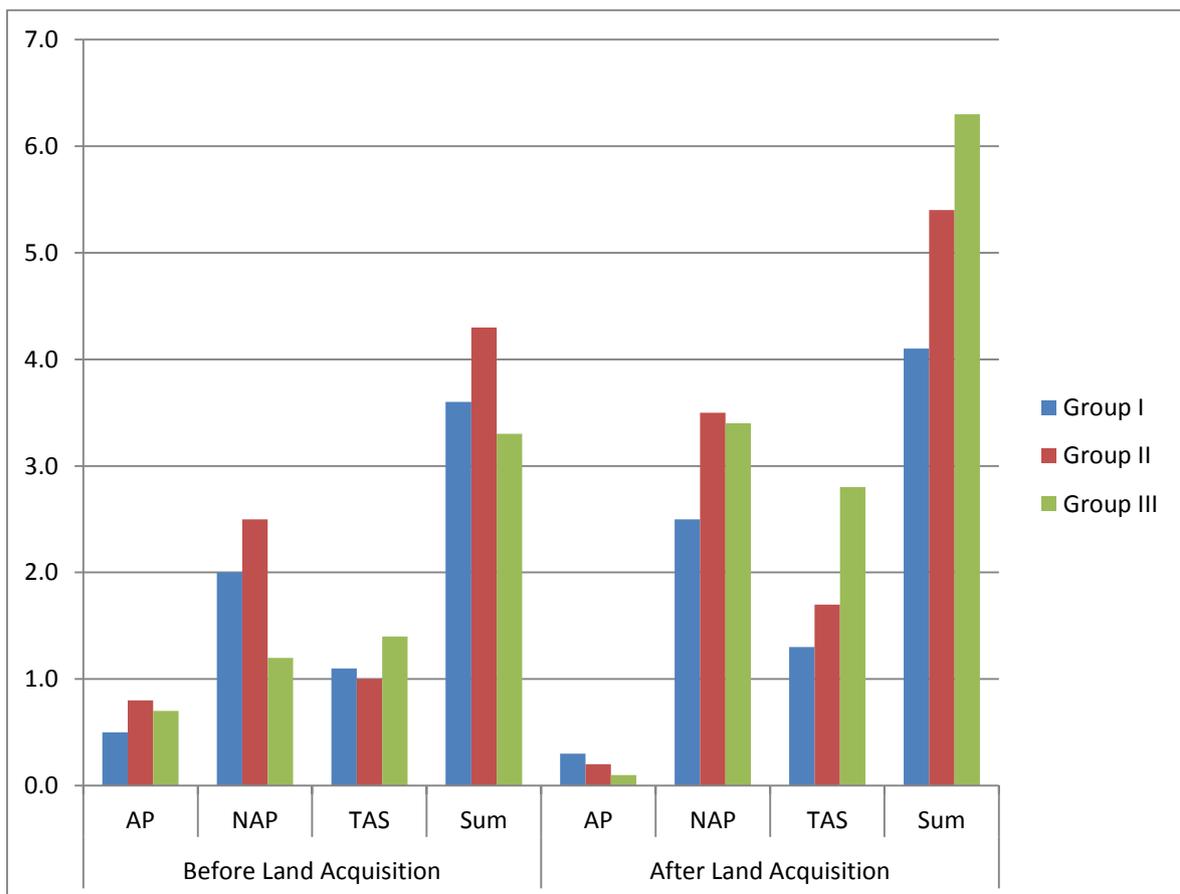
**Table 4. Income of Household Groups**

Unit: million VND/person/month

Groups	Before Land Acquisition				After Land Acquisition			
	AP	NAP	TAS	Sum	AP	NAP	TAS	Sum
Group I	0,5	2,0	1,1	3,6	0,3	2,5	1,3	4,1
Group II	0,8	2,5	1,0	4,3	0,2	3,5	1,7	5,4
Group III	0,7	1,2	1,4	3,3	0,1	3,4	2,8	6,3

Symbol: AP - Agricultural production, NAP - non-agricultural production, TAS - trade and services

Figure 2 shows that the average income of individuals in group II was highest with 6.3 million. VND / month but after the land acquisition, the average income of individuals belongs to group III with the highest of 7.4 million. VND / month. One of the reasons for the increase in per capita income of group III is because many households receive large amounts of compensation and support that have been invested simultaneously in both non-agricultural and commercial production and services. There are many sources of income and quite high such as mechanical engineering, trading, motel services, hotels, real estate brokerage, real estate business, property pledge. However, some people after the land acquisition have reduced income due to their high age, have not received vocational training, so they only have income from agricultural production with small arable land and difficult farming conditions. and only one crop a year. These people often have to receive support from relatives. According to the survey, people who easily change careers are usually between the ages of 20 and 30 years old because they often have high school education, health, and quickly acquire professional knowledge to meet requirements. of companies, especially foreign companies in industrial parks.



*Symbol: AP - Agricultural production, NAP - non-agricultural production, TAS - trade and services*

**Figure 2. Chart of Changes in Income Sources**

### 3.1.5. Change in housing quality, furniture, infrastructure, security, order and environment

According to the survey results, over 53% of all respondents in all 3 groups said that the quality of houses of households with better land acquisition before land acquisition due to using a part of the compensation often, support to expand the floor area, upgrade the house, change the structure or demolish the level IV house to build a higher level house. However, from 22.22% to 28.89% of interviewed respondents from different groups said that their housing quality did not change because they did not renovate their houses because their houses were still good and meet the demand for use. Besides, there are 11.11% of people in Group I, Group II and 2.22% of people in Group III (Table 5) think that their housing quality is worse than before land acquisition due to selling existing houses. have to buy houses of lower quality to have money to pay debts because gambling, lottery when there is compensation, support.

**Table 5. Assessment of Housing Quality after Land Acquisition**

Groups	Better		Constant		Worse	
	Households	Ratio (%)	Households	Ratio (%)	Households	Ratio (%)
Group I	30	66,67	10	22,22	5	11,11
Group II	24	53,33	16	35,56	5	11,11
Group III	31	68,89	13	28,89	1	2,22

According to the survey results, after receiving compensation, the majority of households have used a part of compensation, support to save money, investment in production, non-agricultural business, housing and renovation. private for studying, changing jobs of members and purchasing equipment and facilities for life. Therefore, over 57% of households said that the quality of personal equipment and facilities after land acquisition was better due to the purchase of new and better facilities and equipment, especially some households. bought a car, a truck for life and business. Apart from households who believe that the quality of personal equipment and facilities after land acquisition has not changed, there are also a few households in Group I and Group II (5/45 households, accounting for 11.11%) and only 01 household In group III, it is assumed that the quality of personal equipment and facilities after land acquisition is due to the sale of their equipment and facilities or to buy other equipment and facilities with lower quality to have good payment for debt and other personal purposes.

**Table 6. Assessing Quality of Personal Equipment and Facilities after Land Acquisition**

Groups	Better		Constant		Worse	
	Households	Ratio (%)	Households	Ratio (%)	Households	Ratio (%)
Group I	26	57,78	15	33,33	4	8,89
Group II	29	64,44	14	31,11	2	4,44
Group III	32	71,11	10	22,22	3	6,67

Land acquisition in Yen Phong district serves socio-economic development, so with the construction of infrastructure systems including transport and lighting systems, it has been upgraded, renovated and built the latest near Yen Phong industrial zone that makes the residential areas change markedly. The villages before the land acquisition were inconveniently connecting with Bac Ninh city and neighboring areas. But, now there are many new roads which have been built, expanded and the quality of the road surface is higher. Housing areas for workers are also newly built with beautiful and modern landscapes along with social infrastructure works to directly serve workers and experts.

In terms of security and order, over 65% of all households belong to groups think that it is worse than before land acquisition (Table 7) due to land acquisition mainly developing industrial parks and serving non-agricultural production. so the number of settlers in the area increased dramatically, the previous peace was broken. Especially, there are many cases related to social evils such as silverware, prostitution, drug addiction occurring in the area or large complaints related to land acquisition because people disagree with the method. compensation, support and resettlement projects.

**Table 7. Assessment of Infrastructure, Security, Order and Environment after Land Acquisition**

Groups	Infrastructure			Security and order			Environment		
	Better	Constant	Worse	Better	Constant	Worse	Better	Constant	Worse
Group I	83,4	12,1	4,5	3,7	30,6	65,7	76,4	21,4	2,2
Group II	87,6	9,4	3,0	1,2	31,9	66,9	82,6	14,6	2,8
Group III	88,1	9,4	2,5	1,3	28,2	70,5	75,3	21,5	3,2

Regarding the environment, there are over 70% of households (Table 7) think that it is better to recover land because they have been invested with a common drainage system for residential areas. Stagnant causing unsanitary living environment. Besides, domestic waste is collected regularly so the living environment is also better. Even so,

due to the amount of shuttle bus workers produce continuously 3 shifts in a big day, the emissions of cars and dirt and noise also affect the health of people.

### ***3.2. Some solutions to overcome shortcomings and limitations after agricultural land acquisition***

In order for the life and employment of people whose agricultural land to be acquired better and more stable, agencies and agencies need to guide households to effectively use compensation and support to avoid using money to participate in the society's vices. In addition, it is necessary to have a plan to train and change jobs based on labor recruitment demand of factories and enterprises in the area, as well as industries with future development such as refrigeration and repair. Car repair, mechanical, construction, beauty services or domestic help. For those over 45 years of age, limited qualifications can also be arranged for car maintenance, protection and other suitable work. In order for the living environment to be better, it is necessary to limit the number of shuttle bus workers working in the enterprises by investing in the construction of additional apartment blocks for workers to ensure a good accommodation with the public. Social presentation such as preschools, schools, hospitals and play areas near the workplace for workers to hire. In addition, it is necessary to do better the collection of waste, frequent road cleaning, increasing the area of greenery in new residential areas.

## **4. Conclusion**

After the acquisition of agricultural land for socio-economic development in Yen Phong district, Bac Ninh province, the life and jobs of people whose land is acquired have changed markedly. The rate of agricultural labor decreases, the proportion of non-agricultural workers increases and increases the most for households in group III. The total income of households also increased. Life of people whose land is acquired is better than before land acquisition. However, some people, after being acquired, are still unemployed. Their income is not guaranteed due to their limited level of education, high age, and difficulties to find new jobs. In addition, there are many social evils and dust pollution due to workers' shuttle cars and garbage that have not been collected. For the life and employment of people whose agricultural land is acquired better and more stable, agencies and agencies need to guide households to effectively use compensation and support; planning to train and change jobs; invest in additional construction of apartment buildings for employees to ensure good accommodation with social works for workers to hire and doing better environmental sanitation.

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# **ORIENTATION TO DEVELOP OF A HIGH QUALITY HUMAN RESOURCE IN NAM DINH PROVINCE IN THE 4<sup>TH</sup> INDUSTRIAL REVOLUTION**

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## **Abstract**

*The paper presents the basic contents of developing a high quality human resource in Nam Dinh province in the era of the 4<sup>th</sup> industrial revolution under the impact of knowledge economy and international integration. Stemming from the practical requirements of society, from the human resource development strategy of Nam Dinh in the period of 2011-2020, from the quality of human resource requirements for the 4<sup>th</sup> industrial revolution, from the reality of high quality human resource in Nam Dinh, the author raises the requirements and orientations to develop of a high quality human resource in terms of macro: developing high quality human resource to ensure the quantity, ensure the quality and synchronization of occupational structure and submission degree as well as in terms of micro aspect: forming a number of new personality factors for the province's human resource to meet the objectives of socio-economic development and successfully implement the 4<sup>th</sup> industrial revolution in the locality.*

**Key words:** *Human resource, high quality human resource, development of a high quality human resource in the 4<sup>th</sup> industrial revolution.*

## **Introduction**

High quality human resource is always the driving force of socio-economic development and is an important prerequisite factor to meet the requirements of every industrial revolution era, especially to meet the requirements of the 4<sup>th</sup> industrial revolution in the nationwide as well as in all provinces.

The 4<sup>th</sup> industrial revolution is becoming a common trend, attracting many countries in the world and Vietnam is no exception. It brings a great opportunity for all provinces as well as the country to promote industrialization and modernization. Nam Dinh is a province in the Red River Delta, with a natural area of 1,669.2 km<sup>2</sup> and its population is about 2.2 million people. Geographical location is located at the end of the Red River, on National Highway 1A. The distance from Nam Dinh to the

center of Ha Noi is about 90 km, so it is very convenient for economic development. However, besides the opportunities, Nam Dinh faces to many threats, especially faces to the challenge of quantity of human resource with high level as well as high quality human resource to be ready for a new production period basing on the 4<sup>th</sup> industrial revolution.

Therefore, to solve these human resource challenges, one of the important requirements is that Nam Dinh province must find suitable orientations in developing human resource, in particular, the focus is on developing of a high quality human resource in terms of quantity, quality assurance and suitable structure as one of the urgent requirements for the achievement of the requirements for socio-economic development.

### **Methods**

As mentioned above, high quality human resource to meet the requirements of society's human resource for economic development in Nam Dinh must be considered on the criteria for determining the quality of Nam Dinh human resource, considering the requirements of developing a human resource in the 4<sup>th</sup> industrial revolution for industrialization and modernization, considering the tools to develop a high quality human resource in Nam Dinh. Therefore, in this article, I use three types of study design: Firstly, using the research design to identify factors that affect the development of high quality human resource in condition of the 4<sup>th</sup> industrial revolution in Nam Dinh. Secondly, a descriptive research design and a causal study design are used to describe the degree of impact of the toolkit for state management on the development of a high quality human resource for meeting the target of socio-economic development in Nam Dinh. Based on the analysis and evaluation of research results, the topic of evaluating the current status of development a high quality human resource in Nam Dinh in terms of scale, quality and structure of high quality human resource.

The main research methods are qualitative research methods and quantitative methods that are closely integrated throughout the research process with the desire not only to describe the theoretical picture of how the impact of the development of high quality human resource to meet the target of socio-economic development, but also to quantify this impact through reliable statistics collected from the secondary data from the statistical reports of the Nam Dinh Department of Statistics, the Department of Education and Training, the Department of Planning and Investment, the other departments, the boards,... in terms of quantity, quality and structure of high quality human resource in Nam Dinh. In addition, primary data sources were collected through surveys of the demand of high quality human resource from economic organizations and

agencies to analyze and evaluate the situation of developing human resources for meeting the target of Nam Dinh's socio-economic development.

## **Results**

### **1. Literature review of developing of a high quality human resource in the 4<sup>th</sup> industrial revolution**

#### ***1.1. Some related concepts of high quality resource:***

In the dictionnaire of the Market Economy: "High quality human resource are those who have a certain level of knowledge, expertise, ability and skill with their own creative work in practical conditions. They can contribute to the development of society and of humanity". [8]

High quality human in this article is determined includes leaders and managers; scientific and technological staffs - those who have university or college degrees or higher and a group of skilled technical workers. [4]

From the point of view of "human is the source - human capital", Japanese economist Yoshihara Kunio said that "Human resource development are investment activities to create human resources in quantity and quality meets the needs of socio-economic development of the country and ensures the development of each individual".

From the point of view of "human is an asset", American economist Gary Becker showed a concept "Developing of human resource is to make people becoming a more valuable asset in general efforting to live and work together".

For this article, a concept of developing of a high quality human resource is considered "Developing a high quality human resource is a harmonious development on all three aspects of human resources, including mental, biological and personality, spiritual development; at the same time, it must create a favorable social environment, create a dynamic labor environment to exploit the potential of now available human resource effectively as well as the potential of human resource in the labor market for local socio-economic development as well as for themselves".

#### ***1.2. The characteristics and requirements of developing of a high quality human resource for the 4<sup>th</sup> industrial revolution***

##### ***The characteristics of the 4<sup>th</sup> industrial revolution:***

The 4<sup>th</sup> industrial revolution - known as 4.0 generation industry has been creating dramatic changes, affecting every aspects of human life in the 21<sup>st</sup> century. According to Gartner, the 4<sup>th</sup> industrial revolution derived from the concept of "Industrie 4.0" connecting embedded systems and intelligent production facilities to create digital convergence between industry, business, function and process inside it.

According to Klaus Schwab, director of the World Economic Forum, the view of the 4<sup>th</sup> industrial revolution: The 1<sup>st</sup> industrial revolution used water energy and steam energy to mechanize production. The 2<sup>nd</sup> industrial revolution took place thanks to the application of electricity for mass production. The 3<sup>rd</sup> industrial revolution used electronics and information technology to automatic production. With the 4<sup>th</sup> industrial revolution emerging from the 3<sup>rd</sup> industrial revolution, it combines technologies together, blurring the line between physics, digital and biology.

In processing of socio-economic development, not only industrial development, but also economic and labor restructuring in each sector, each field and in the whole national economy in the direction of technology with the typical elements of the 4<sup>th</sup> industrial revolution are as follows:

**Table 1: The basic characteristics of the 4<sup>th</sup> industrial revolution**

No.	Elements	<i>The 4<sup>th</sup> Industrial revolution</i>
1	Scientific basis	Physics, arithmetic and biology
2	Technical facilities / labor tools	Automatic control machine for embedded system connection
3	Technological basis	Automation, biotechnology, physics
4	Elements of human - machine systems	Automatic control machine; robots work under the program
5	Knowledge	Knowledge becomes a productive force
6	Classification of labor	- Intellectual labor - Artificial intelligence
7	Characteristics of the economy	Industrial economy and knowledge economy

*[Source: Author's research results]*

***The requirements of developing of a high quality human resource in the 4<sup>th</sup> industrial revolution:***

Human resource is a decisive factor for the development social-economic of each province and each locality. To prepare high quality human resource to meet production requirements in the context of the 4<sup>th</sup> industrial revolution which is gradually spreading in Nam Dinh province, Nam Dinh is necessary to determine developing of a high quality human resource is one of three breakthroughs of the strategy of changing its socio-economic development model in locality. Therefore, the development of high quality human resource in Nam Dinh must meet the requirements as follow:

*Firstly*, developing of a high quality human resource for the 4<sup>th</sup> industrial revolution must aim to develop sufficient quantity, quality and high quality labor structure based on the development of intellectual capital including the development of artificial intelligence, in which the orientation of developing high quality labor in area such as cloud computing, automation, machine technology, along with high level data analysis human resource.

*Secondly*, it must ensure that the development of a high quality human resource for the changing of industrial human resource overview of the society of the province as well as in each enterprise, especially where the fields related to information technology or suffered much from this new technology of the 4<sup>th</sup> industrial revolution.

*Thirdly*, among the characteristics of the 4<sup>th</sup> industrial revolution is connecting and sharing data. Thus, a new requirement in developing high quality human resource in Nam Dinh compared to the traditional development method is ensuring a high quality human resource with knowledge and ability to integrate knowledge, equipping a high quality human resource with knowledge and skills necessary related to the fields of science, technology, technology and mathematics while performing the work.

*Fourthly*, in addition to developing of a high quality human resource for the 4<sup>th</sup> industrial revolution, it is necessary to ensure the quality of growth factors thanks to the scale and enhance the competitiveness of high quality human resource.

*Fifth*, developing of a human resource in the context of the 4<sup>th</sup> industrial revolution needs to ensure a better balance between regions, industries and economic sectors.

## **2. The characteristics of human resource and orientation to develop of a high quality human resource for the 4<sup>th</sup> industrial revolution in Nam Dinh**

### ***2.1. The characteristics of human resource in Nam Dinh***

Nam Dinh province is on the way of industrialization and modernization with the characteristic of economy with three intermingled civilizations, agricultural civilization, industrial civilization and some elements of knowledge civilization. In recent years, the general level of human resource in Nam Dinh has continued to be improved and the qualification structure has been gradually improved.

Here are some indicators reflecting the scale and structure of labor according to the 2018 criteria of Nam Dinh province as follows:

**Table 2. Percentage of trained workers classified by professional qualification**

No.	Degree training	Percentage (%)
1	Not trained in technical qualifications	35.7
2	Trained in technical qualifications:	64.3
	- Vocational training:	20.6
	- Professional range:	6.7
	- College:	11.3
	- University or higher:	25.7

[Source: The report of Statistics Department of Nam Dinh, 2018]

In 2018, Nam Dinh has a large population and a larger labor force than the national rate, with a fluctuation of about 2.5%, ranking 8<sup>th</sup> in the whole country, the rate of lacking of work is about 31.8% compared to 23.2% nationwide and 32.5% in the Red River Delta. Through table 2, we can see that: The rate of trained and technical workers in Nam Dinh is much higher, particularly in 2018, this ratio of Vietnam is 28, 6%, while Nam Dinh province is 64.3% with university or higher rate gets 25.7%, the rate of vocational training is 20.6%. These rates help to fulfill the requirement of high quality human resource for developing of socio-economic in the locality.

**Table 3. Structure of technical labor by economic sector in Nam Dinh**

No.	Economic sector	Number of employees (,000 people)	Number of employees with professional qualifications (,000 people)	% compared to number of employees	% compared to professional qualifications
1	Industry – construction sector	213.5	169.3	18.6	79.3
2	Agriculture, forestry and fishery sector	817.4	521.5	71.2	63.8
3	Service sector	117.1	47.2	10.2	40.3
<b>4</b>	<b>Total</b>	<b>1,148</b>	<b>738.0</b>	<b>100.0</b>	<b>64.3</b>

[Source: The report of Nam Dinh Statistics Department, 2018]

According to the report of Nam Dinh Nam Statistical Office in 2018, Nam Dinh has a total population of about 2,200 thousand people, with the number of employees in the labor force is 1,148 thousand people (52.18%), in which the labor in the agricultural sector has 817.4 thousand people (71.2%), industry - construction

sector has 213.5 thousand people (18.6%), the remaining services sector accounted for 10.2%. The number of trained workers of the sectors is quite equal, in which the trained labor force of industry - construction has the highest rate (79.3%). Nam Dinh is striving to 2020, the rate of trained workers in industry - construction and services has increased to over 80%, in which the proportion of labor reduced to 20-30%.

In reality, the current labor source of the province is plentiful, but the quality is still limited, unskilled workers account for a large proportion, technical workers and professional workers are too short compared to the requirements of economic development. social economy. The use of labor resources of the province is still a big gap compared to the available potential, especially the labor force in rural areas. Overall, Nam Dinh has an excess of over 30% of production capacity. Labor structure is slow, labor market is not developed adequately, labor quality growth is slow, demand of labor market is limited and therefore skilled labor will develop in the trend of overcoming out of the locality.

## ***2.2. The contend of orientation to develop of a high quality human resource in the 4<sup>th</sup> industrial revolution in Nam Dinh***

According to the teachings of President Ho Chi Minh: “To build socialism must have socialist people”. Therefore, it can be inferred that the 4<sup>th</sup> industrial revolution requires a human resource of industrial revolution generation 4.0.

Human resource is one of the important factors determining the development of an economy. Therefore, Nam Dinh has accurately surveyed and assessed the quality, quantity and structure of the industry, paying special attention to the shortage of skilled and high level human resource to carry out the policy for developing and training human resource, welcoming high quality human resource for necessary industries in the future. Orientation of developing high quality human resource in Nam Dinh should determine the target of developing industrial human resource with full of bravery, competing capability and actively work in modern and specific development conditions to ensure energy requirements practice force; social capacity; adaptive capacity; creative capacity; capacity to create businesses and develop themselves.

### ***2.2.1. Orientation to develop of a high quality human resource through training and fostering activities***

People are important factors, therefore, training and fostering of human resource must be considered a prerequisite to bring Nam Dinh from an agricultural province into a civilized and modern industrial province in the conditions of economic market, globalization and international integration. Training and retraining of human resources of the country, it is reflected in the number, structure of age, gender structure, qualification and distribution of trained human resource in the

sectors for socio-economic development of local.

With the above thesis, it is necessary to clearly define the priority order of the two fields of human resource training and improving people. It is necessary to strongly navigation education and training system from improving people into an education and training system of training human resource and fostering talents, to meet the requirements of labor restructuring following the trend of increasing knowledge of human resource, and developing the artificial intelligence division for the 4<sup>th</sup> industrial revolution in Nam Dinh province.

The impact of the 4<sup>th</sup> industrial revolution greatly affected the entire human resource of the country as well as Nam Dinh province, especially the threat of heavy unemployment in the unskilled human resource. Therefore, developing of a high quality human resource for the 4<sup>th</sup> industrial revolution in Nam Dinh is necessary to develop in two ways direction points and general, specifically:

According to a survey by the Department of Planning and Investment in Nam Dinh, the forecast of increasing demand for high quality human resource in Nam Dinh in the year from 2018 to 2020 as follows:

**Table 4. Forecasts increased demand of high quality human resource in 2020**

Level of training	High quality human resource is available in 2018 ( <i>,000 people</i> )	Forecasting the high quality human resource for socio-economic development in 2020 ( <i>,000 people</i> )
Trained in technical qualifications:	738,00	946,28
- <i>Vocational training:</i>	236,43	320,60
- <i>Professional range:</i>	76,90	92,28
- <i>College:</i>	129,71	149,95
- <i>University or higher:</i>	294,96	383,45

*[Source: Department of Planning and Investment in Nam Dinh]*

*About education level:* Nam Dinh needs to make efforts until 2020, the province's labor force ensures that the rate of primary school graduation is below 5%; 8% of primary school graduates; graduated secondary school accounted for 35% and graduated high school 52%. In 2018, this rate is 7%; 12%; 33%; 48%.

*About professional and technical qualifications:* In 2020, Nam Dinh strives to reduce the rate of short term trained workers to 35%, increase the rate of intermediate trained workers to 8.5%, college level up to 15.6%; university or higher up to 30%.

*About vocational training:* In 2020, Nam Dinh strives to raise the rate of vocational trained workers to over 35.6%.

### *2.2.2. Orientation to develop physical, personality and mentality of human resource*

To promote full of human resource' ability o meet and complete the assigned work, the employees need to have enough physical and health suitable to their professional and enduring endurance in continuity and prolonged conditions. Workers must have the dynamism and creativity in implementing work and apply the trained knowledge into work and adapt to the changing environment to promote the high level of creativity of each labor in executing, solving work.

For the labors of public sector (*civil servants and officials of the province*): Enhancing the thoroughness, caring both materially and spiritually for vocational skills training and other qualities of civil servants and officials. To the year 2020, the total number of civil servants and officials is about 23,000 people, in which the postgraduate qualification is 20%, college and university is 75%; by the year 2030 the corresponding ratios are over 35% and 65%.

For the labors private sector: In 2018, Nam Dinh has 1,148,000 workers aged 15 and over, in which trained laborer is 18.6%. It is expected that by 2020, the proportion of trained worker will be 30%, the proportion of workers with college and university degrees will be 45% of the total labor force; 3% of post-graduate workers.

To carry out this purpose, Nam Dinh should set out the orientation to improve the quality of vocational education teachers to achieve and have higher standards of professional qualifications, vocational skills, and suitable to structure of training professions. In which Nam Dinh has over 50% of teachers teach at college and intermediate level with postgraduate qualifications. Striving to achieve the rate of over 70% of labor through vocational education have job in the year 2020 and up to 85% in 2030. In addition, Nam Dinh needs to build and organize the implementation of appropriate policies and mechanisms for developing high quality human resource, including the contents of the working environment, employment policies, and income. living conditions, priority policies, attraction for high quality human resource and talents to meet the local socio-economic growth and development requirements.

### *2.2.3. Orientation to develop of a high human resource according to the branches and key areas in Nam Dinh*

Developing of a high quality human resource in Nam Dinh must first meet and ensure the relationship compatible with the development of the local industries

towards the target of industrialization - modernization in the locality.

The efficiency of developing of a high quality human resource must ensure human resource development on all three aspects of scale, quality, and suitable structure, to fully meet the requirements of industry development in the province's economy and ensure efficiency by scale. Ensuring the development speed of the province's high quality human resource must not be higher than the development speed of the local economic sectors to avoid the case of reducing economic efficiency.

Developing of a high quality human resource for industries, sectors, economic regions, companies using high quality human resource to address and immediate high-level human resource of manufacturing industries in the province.

**Table 5. Forecasts increased demand of high quality human resource for sector in 2020**

Level of training	High quality human resource is available in 2018 (,000 people)	Forecasting the high quality human resource for socio-economic development in 2020 (,000 people)
For each sector:	738,0	946,28
- For industry - construction sector:	169,3	615,08
- For agriculture, forestry and fisheries sector:	521,5	189,25
- For service sector:	47,2	141,95

[Source: Department of Planning and Investment in Nam Dinh]

With the forecasting of high quality human resource of Nam Dinh will get in 2020 of 946,28 thousand people, Nam Dinh promotes to restructure towards increasing the proportion of industry and services (*increasing the industry-construction sector from 52% in 2018 to 65% up in 2020; reducing the agriculture, forestry and fisheries sector to 20% down and raising the service sector to 15% in 2020*).

For the development of high human resource in the education and training sector: From now to 2020, Nam Dinh is determined to constantly strive to improve the quality of human resource, with a focus on improving human resource and expanding training professional skills of workers, meeting the requirements of the province's socio-economic construction. Improve the quality of comprehensive education for students at all levels, regions, types of schools. Building policies to attract talents who are excellent masters and graduates. Well implementing the socialization of education and

the policy of diversifying forms of learning in the province to develop of a high quality human resource for socio-economic development.

### **3. Conclusions**

With the 4<sup>th</sup> industrial revolution is taking place widely and deeply in the world, as well as in Vietnam and even in Nam Dinh province, the struggle between the labor force and labor relations in the old socio-economic form always happens. This struggle will stimulate and develop. It is imperative to develop a new labor relationship that is consistent with the current new industrial and economic relations for socio-economic development in the province. Therefore, developing of a high quality human resource in Nam Dinh province in condition of the 4<sup>th</sup> industrial revolution is currently an important human resource strategy to contribute to improve the quality of local human resource and contribute the economic restructuring, labor restructuring towards industrial and modern, meeting the requirements of socio-economic development in Nam Dinh province.

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# ECONOMIC VALUATION METHOD OF HERITAGE AND SUGGESTIONS FOR HAM RONG - NUI DO HERITAGE ECOSYSTEM - THANH HOA PROVINCE

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## **Abstract**

*Restoration and conservation of heritage brings to many values: culture, aesthetics, education, environment, society, history as well as many other values. One of the most mentioned values in recent year is the economic value.*

*When we talk about the importance or value of a heritage, we are truly making a claim on the value: its purpose, experience, identification method, measurement method and its role on the decision making related to conservation, restoration both tangible and intangible heritage values.*

*This paper examines the economic value of restoring and preserving heritage ecosystems from an approach that values the economic value of natural ecosystems and offers some suggestions for valuation process of economic value of the Ham Rong - Nui Do heritage ecosystem.*

**Keywords:** *Heritage ecosystem; valuation of heritage economy.*

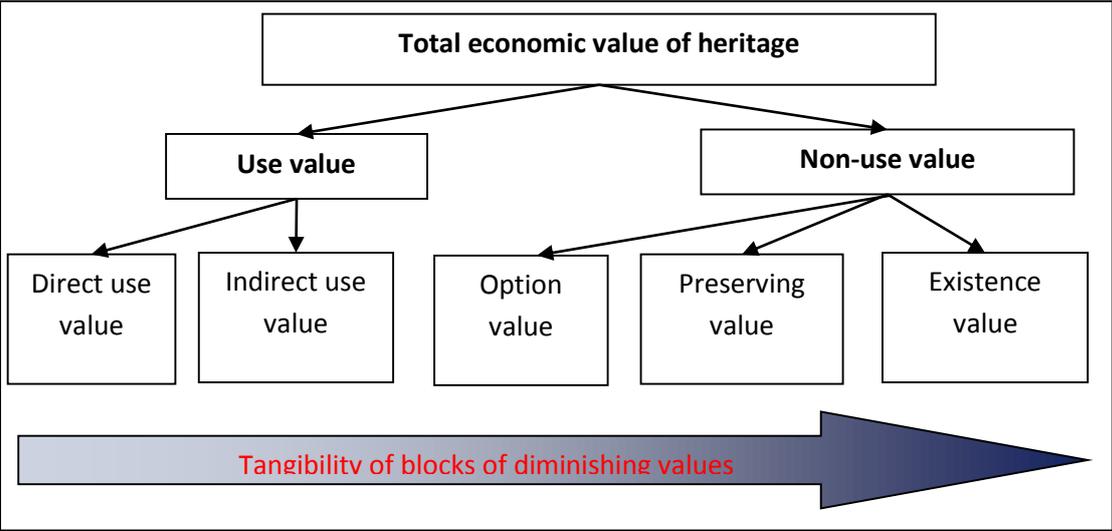
## **1. Economic value of heritage**

For many years, economic value is often considered too shallow and cannot be compared with the meaning of historical resources. Even today, there are still people who make absolute heritage conservation, deny the calculations and supportive views based on economic arguments, and argue that economic calculations have underrated and insulted the importance and unmeasured metaphysical values of human historical heritage. This is true in the long run when the economic impact of heritage conservation becomes much less important than the signification of education, environment, culture, aesthetics and society. However, in the short run, the recognition of economic value is a way for managers and investors to find a common voice, which helps to attract the resources of society to invest in restore heritage.

The concept of value in economics has a long history, at least from the economists of the Adam Smith classic school. It has become a significantly

controversial matter and still been discussed until now. However, the model of neoclassical economy has solved the problem clearly, by determining the value derived from personal interests. Value is something that consumers are willing to pay in return for certain goods or services. Consumers always know how to maximize their benefits rationally through exchange processes in perfect markets. Even if the market fails, for example, in the case of a public goods, it is still possible to measure their values, that is the willingness to pay of individual consumers to express the value of the mentioned goods. Therefore, when we think about the economic value of heritage in this model, we are thinking about the kinds of values which individuals recognize and are prepared to pay in one way or another.

Categories in which the value of heritage can be classified under these terms are well known and clearly stated in the heritage economy. Types of values correspond to the way in which individuals experience heritage, or by using directly or indirectly. Based on the approach of environmental economics and the approach of heritage economists, we can determine the values of the heritage ecosystem through the following diagram:



**Figure 1. Components of economic values of heritage ecosystem**

Direct use value is the cumulative value for individuals, households or businesses through direct consumption of heritage services. It can be experienced in a variety of ways, for example through heritage property ownership, or by enjoying the services of an asset of a heritage by living in a heritage house or working in a heritage building; such values are reflected in market prices, and can be observed, for example, in actual rental values or rental values of heritage buildings used as living houses or commercial facilities.

Indirect use value is the value which heritage brings to many subjects and is the secondary impacting value of heritage conservation. For instance, restoring

heritage creates jobs for locals who do not own any heritage, promotes the reconstruction of cities, brings up many jobs for corporations in the heritage areas.

The option value reflects the wishes of those who are benefiting directly or indirectly from heritage to protect that heritage for their own use in the future. It is measured through the willingly paying price for the protection of these heritages to help that payer continue to enjoy in the future.

The preserving value reflects the desire of current generation to preserve values of heritage for their next generations in the future. It is also measured through the willingly paying price for protection of heritage for their next generations.

The existence value is the one belonging to each individual's perception. It is clear that many individuals may not have come to heritage sites but they may have heard or seen them on films, they want the values of heritage to be protected simply because they see them as valuable and need protecting without any other personal needs. In this case, their willingness to pay only for the desire to preserve the heritage reflects the existing value of the heritage.

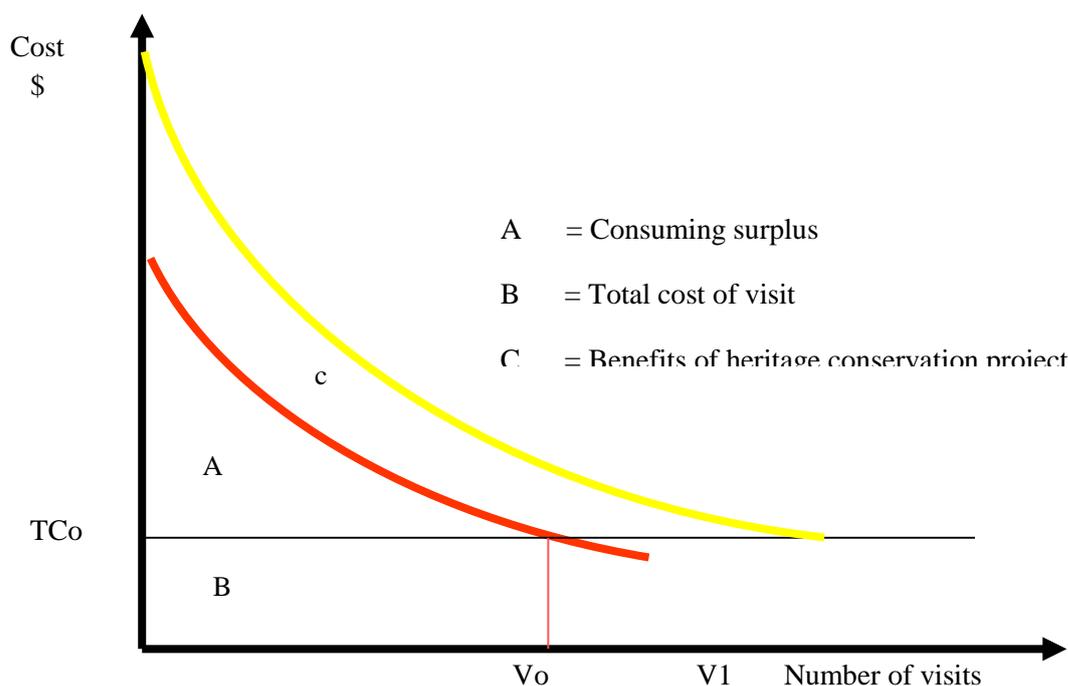
## **2. Valuating the value of heritage method**

### ***2.1. Travel cost method***

The travel cost method evaluates the entertaining value of heritage based on the disclosure of consumer preferences to estimate the demand curve for entertainment. The basic hypothesis of the TCM method is that the cost of going to a heritage site with the purpose of visiting reflects the value of that entertainment site.

The analyst will interview visitors about where they come from, how much they have to spend on the trip and the visiting frequency to that heritage site during the year. Thereby, we can find the functional relationship between the price per visit (travel costs) and the number of visits made. On the other hand, from the willingness to pay of visitors for the trip and the number of visits, it is possible to make a travel demand curve that shows the relationship between the number of visits and the cost of visit. The value of the landscape and entertainment of the study site is assessed as the total benefit of visitors and is measured by the area under the demand curve.

For the application of this method to assess the benefits of the plan of restoring heritage, it is necessary to make two entertainment demand curves, one for the current use plan and one for the case of heritage project. The consuming surplus discrepancy between the two demand curves is the added benefit brought by the project.



**Figure 2: Entertainment demand curve and consuming surplus**

There are 3 basic approaching method in the Travel Cost Method: Zonal Travel Cost method (ZTCM), Individual Travel Cost Method (ITCM), and Random Utility Approach. The ZTCM is the popular and easy one to apply for many heritages, even for those with low visiting frequency.

## ***2.2. Hedonic Pricing Method***

Hedonic Pricing Method uses statistics to identify correlation between price fluctuation of market-priced products and changes in relating environmental convenience. For example, after having the project of restoring heritage, the value of that heritage itself and the more beautiful landscape make the real estate prices go up where people prefer to live. This change can be measured to quantify effective impacts of the project on the heritage value.

Steps:

- Identify the value needs valuating
- Gather data on the asset's price before and after conducting the project
- Select model and valuating functions
- Estimate parameters and the contribution of the heritage in the real estate's value.

For accurate analysis, a large amount of data is required, covering the factors that govern the value and characteristics of the attributes involved in a period in the form of value function data. The main advantage of this method is that it is possible

to measure value based on actual options (Perman, 2003). Finding information about the real estate market is feasible and effective because this information accurately shows the value.

### ***2.3. Contingent Valuation Method***

The Contingent Valuation Method (CVM) is used to assess the value of heritage by building a virtual market through the willingness to pay (WTP) of interviewees in a contingent situation. CVM is applied to many elements of heritage such as the value of heritage restoration to a certain level of quality; landscape value of heritage; value of conservation of tangible and intangible heritage... The quality of a CVM study depends on the quality of the whole process. After collecting all the necessary information by the questionnaire, we calculate the average and median of the WTP / WTA and together with the coefficient affecting the price, thereby calculating the total economic value of the heritage area needing pricing.

This method has superior advantages compared to other direct measurement methods. CVM evaluates both the existence value and the selected option value of the heritage without requiring complex partitioning or subdivision as some other methods (Mogas, 2006). The answers to CVM methods directly measure monetary values. Therefore, these values are theoretically accurate.

Steps:

- *Step 1: Identify products needing valuation and set up contingent market*

It is an important step which significantly affects upcoming results. Setting up contingent markets includes:

- Description of priced services.
- Contingent situations in which services were supplied to interviewees.
- Clarification of payment method: Normally, there are ways of payments such as taxes, fees, donation, transfer through demanding accounts, credit cards, etc.

- *Step 2: Identify survey samples and survey tools.*

Samples of the survey are all subjects who have the potential/ ability to benefit from such goods and services. For example, with the pricing of an entertainment value heritage, the interviewees may be visitors or those who intend to visit.

Survey tools depend on goods that need to be priced to select different forms of survey such as through direct interviews with questionnaires, by mail, telephone, etc. In any way, the questionnaire construction and the way of interviewing for respondents to answer easily are indeed important.

- *Step 3: Receiving paid prices*

After the construction of the contingent market, the researcher can conduct a survey by face-to-face interview, phone interview or mailing.

The purpose of the survey is to determine the maximum Willingness To Pay (WTP) of the survey sample for improving the quality of the heritage or the minimum Willingness To Accept (WTA- Willingness To Accept) for heritage loss. To collect information about WTP / WTA, the following ways may be used:

- Open - ended question: Ask questions directly to the interviewees such as "How much are you willing to pay for the preservation of Dong Son heritage?" The result obtained by this method is number continuous data has a great variation.

- Payment Card: Provide a table of different payment willingness levels for the interviewee to choose a level. The results of this method are random payment willingness levels.

- Bidding game: Offering a price, if the respondents accept, continue to increase the price until they are not willing to pay, then stop. The price obtained by this interview is usually highest because the interviewee may overestimate the value of the property.

- Single bounded: Only ask for opinions on a fixed price for a respondent and use different prices to ask different people. For example, "If the service is provided at the price of \$ xx, do you care and accept?"

- Double-bounded: The interviewer firstly offers a price to know whether the respondents are willing to pay or not. If they are, double the price, and if they are not, halve the price. The obtained numbers from this method is the paying range of respondents.

- *Step 4: Calculating the average WTP*

Calculating the average and median of paid prices after eliminating irrational answers.

- *Step 5: Analyzing factors influencing WTP*

The purpose of this step is to examine the factors affecting WTP. Therefore, WTP is considered an explained variable and we need to define the regression function for a series of explanatory variables such as income, gender, age, educational level, etc.

- *Step 6: Aggregating data for determining the total WTP*

Aggregating data to determine the total willingness to pay or willingness to accept of all individuals at the study site for the value of a heritage or a certain

attribute of the heritage ecosystem. Therefore, how can the value for the entire population be calculated from the average value of the sample? Data aggregation can be done in one of two ways:

1. If the sample is representative, it is possible to multiply the average WTP / WTA of the sample by the total population, which is a good estimation for the total value.

2. If the sample's overall bias reflection is the related population, modifications need to be done by econometrics technique.

- *Step 7: Assessing the conducted CVM survey*

In order to evaluate the CVM survey, it is necessary to answer the following questions: Does the survey have many reluctant response? Is there evidence that the respondents understood the hypothetical market? Compared to other research results, are the paid prices appropriate? In this case, tests can be done to determine the reliability of the answers.

In cost-benefit analysis, hypothetical market-based pricing can be used to compare individuals' willingness to pay to preserve heritage or an endemic value before and after having the conservation project. The discrepancy between the two WTP levels is the added benefit of the conservation plan.

However, this method has some basic limitations. Firstly, the respondent is put into a hypothetical situation. In a hurry or misunderstand the problem, the answer is not close to their corresponding behavior. Secondly, the interviewer can express situations differently, the different approaches for different respondents can cause significant errors. These discrepancies have a significant effect on the average price which is aggregated later.

Contingent market-based pricing is one of the most appropriate methods that has been successfully applied in some heritage areas around the world. In order for the valuation to bring about high-precision results, it is necessary to conduct surveys with a large enough scale, to collect relatively comprehensive information on the economy, resources, society and conservation value of affected area. In addition, the quality of questionnaires and investigation and interview skills should be paid special attention in order to achieve good results.

#### ***2.4. Choice Modelling Method***

Choice Modelling Method (CM) is a method of valuation based on stated preference. This method derives from the combined analysis, the respondents will have many choice sets. From each choice set, the respondents will choose their preferred option. By setting each attribute at a price or cost level, the marginal benefit estimates will be converted into monetary estimates for each change in attribute levels

(Mogas, 2006). Then, the probability that the “i” individual likes “j” option more than n other options in the solution set is understood that the probability of benefit from “j” option is greater than the probability of benefit from the other options.

This method allows us to select multiple options through repeatable attributes and scenarios (instead of having trade-offs as in CVM), allows us to verify according to the logical framework so that those who answers will reveal quite exactly their interests. This approach goes into specific problems instead of abstract issues in the CVM method, provides more information and increases practicality, creates an attraction for respondents.

#### Steps

- Determine the value of heritage needing valuation
- Determine sample and subjects needing analyzing
- Create contingent scenarios (experts)
- Group discussion for questionnaires
- Tests for completing the questionnaires
- Develop the calculating model
- Field investigation
- Handle data and estimate model (fix errors)
- Calculate sample’s value and make generalization

For example, to determine the willingness to pay for the preservation of a natural heritage site, different attributes of that region are given for different uses, each of which will be divided into different level. Then we proceed to ask for personal opinions to know their choices. Based on the survey results, they will know what values people want to protect and the total amount of money they accept to preserve that heritage.

### **3. Suggestions for valuating of Ham Rong - Nui Do Heritage (Thanh Hoa)**

#### ***3.1. Subject of valuation***

Ham Rong-Nui Do heritage is considered a heritage ecosystem with layers of heritage classes, from natural heritage to cultural heritage, from poetic heritage to spiritual heritage. All converge in this area and it has a continuation of cultural inheritance over many periods. However, many relics and heritage have been lost and even forgotten. Restoring values of the heritage will bring great benefits including economic benefits.

If the restoration of heritage values is considered a major project, the valuation of the economic value of the heritage to evaluate benefits brought to many different subjects including: people in the heritage area; community; the investors; government; other stakeholders who are interested in heritage and benefit from the heritage... contributing to identifying important values of heritage and implementing cost-benefit analysis for component projects.

In terms of subject of calculating valuation of economic value of heritage ecosystem in the Ham Rong-Nui Do area, the author has following suggestions:

*Calculating economic value from tourism activities:* The value of tourist landscapes in this area is the overall value, which cannot be separated for each single entertainment location because the nature of this area has both natural heritage, cultural heritage and festival, especially archaeological heritage in a geographical area which is not too large. Therefore, visitors to this area will have the opportunity to experience those legacies that are difficult to separate each legacy in the value of entertainment landscape value. The method of application is the regional travel cost method.

*Calculating direct use value:* People in the heritage area benefit from the project, contributing to creating new jobs and income. These values are calculated through the household production function method.

*Calculating the added value of real estate projects:* The area around heritage will have an increase in real estate value as many people want to own houses in these areas. The valuation of the added value of real estate will approach each project, comparing the value of real estate in Ham Rong - Nui Do area with projects elsewhere to see the value of the heritage affects the price of houses in heritage area. For real estates that have been formed before a heritage restoration project, can be accessed by the method of house price function in which the value of the location in the heritage area is a variable affecting house prices.

*Calculation of option value, preserving value and existence value:* These values belong to human awareness of the importance of heritage, the importance of heritage restoration should depend on each type heritage (objects or intangible objects; culture or natural landscapes, etc.) to select the appropriate calculation model. Featured values can be calculated including:

- Preserving value and existence value of restoration of prehistoric Dong Son culture.
- Preserving value of restoration of ancient city- Thieu Duong, Tu Pho capital;
- Option value of restoring folk Taoist space and folk singing area of Ban A Mountain, Bang Trinh Mountain.

### 3.2. Valuating model and data requirement

The following table describes how the above value types can be determined and the required data to collect for the valuating process.

**Table 1. Requirements on data, hypothesis for types of use value and nonuse value**

Types of value	Valuating technique	Measurement value	Necessary data	Note and hypothesis
Direct use value (directly exploited from the heritage)	On-site valuation for market products uses actual value. For goods that are used directly, use market value for the respective goods. If not suitable, use an indirect opportunity cost approach to assess the time used to harvest through income levels.	The total annual value of each product / service is produced or supplied from the heritage area.	In terms of direct valuation: Market price at the point of each product. Quantity of goods harvested, sold, given away and used in households  In terms of indirect valuation: Unit price for corresponding goods. Cost of input materials Time to use to create products. Chi phí lao động địa phương tương ứng. Corresponding local labor costs. Exchange rate Year (data collection date)	Market prices represent real value in the market with a competitive market at equilibrium (prices are not distorted).  All externalities are identified and included in the price.

<b>Types of value</b>	<b>Valuating technique</b>	<b>Measurement value</b>	<b>Necessary data</b>	<b>Note and hypothesis</b>
Tourism value	Zonal travel cost method/ Individual travel cost method	Annual entertainment value of the heritage area	Data from the visiting survey: Socio-economic variables The place of departure of visitors Travel time The cost of visiting the tourist destination Frequency and length of travel	Roads to the site are suitable for everyone. Each tourist trip has its own purpose. The relationship of demand function can be determined There is no factors except for travel cost affecting the entertainment value of the heritage site. Market price used in valuation is not distorted.
Added value of the real estate	Enjoyment valuation method	Indirect value of heritage restoration through added value of real estate	Market price of real estate by type before and after the heritage restoration project.	Market prices are not distorted Buying behaviors towards real estates can be observed
Preserving value and existence value of the heritage	Contingent valuation method	The nonuse value of the heritage through the WTP price to protect and restore heritage.	Subjects who are benefiting from the heritage or will benefit from the heritage	Individuals who are aware of the importance of each heritage value.

#### 4. Conclusion

Valuating the value of heritage is a new field for Vietnam and the world. In the world, the valuation is usually done for each heritage (temple, pagoda, natural landscape), there are few cases of valuating the value of a heritage ecosystem with many types of heritage in one narrow geographical area.

The approach to economic valuation of the heritage ecosystem in Ham Rong - Nui Do area may stem from the valuation of the economic value of natural ecosystems due to the similarities in natural capital and cultural capital values. By the method of single valuation for each type of value we can sum up to get a picture of the total economic value of the heritage. Economic calculations will raise a voice to the economic value of heritage and the necessity of restoring heritage to managers. Although it is still quite new and lacking in data, we can affirm that the valuation of value of heritage ecosystems can be successful in Vietnam based on valuating methods applied worldwide and experimented in natural ecosystems in Vietnam.

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# COMMUNITY RESIDENTS' WELL-BEING AT WORLD HERITAGE SITE AND SUPPORT FOR SUSTAINABLE TOURISM DEVELOPMENT, AN ANALYSIS IN THE TRANG AN LANDSCAPE COMPLEX - VIETNAM

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## **Abstract**

*The support of local communities plays a significant role in the World Heritage Site (WHS) conservation and the development of heritage tourism. This study aims to better understand the community support for sustainable tourism development by exploring the distinct components of residents' well-being (WB) in the heritage tourism context. The study sample is the group of residents from three different tourism destinations at Trang An Landscape Complex located in the Northwest Vietnam. The analytical result indicates that residents' well-being affects the level of support for the sustainable development of heritage tourism. Moreover, the material well-being domain has the greatest positive effect on the local residents' support. In addition, socio-demographic characteristics such as gender, age, education level, years of residence also have an influence on the residents' support for sustainable tourism development.*

**Keywords:** *Residents' well-being, material/ non-material well-being domain, support for sustainable tourism development, World Heritage Site*

## **1. Introduction**

Tourism is widely recognized as a leading industry with its major social and economic potentials to attract the attention of local and national governments (Ribeiro, 2017). Recent studies have pointed out that tourism development has positive influence not only the country as a whole but also individual local residents through new

employment opportunities and improved public infrastructure (Ko & Stewart, 2002; Lee, 2013; Ribeiro et al., 2013; Sinclair-Maragh, 2016; Styliadis & Terzidou, 2014). Therefore, tourism development is encouraged to stimulate the economy, particularly in developing countries. However, tourism development also causes friction and has a range of negative impacts on the environment, local socio-culture, society and local economy (Sharpley, 2014). Consequently, sustainable tourism has become one of the most popular topics in tourism literature (Tubb, 2003). A local community that plans and uses tourism as an alternative means of strengthening its economic development must develop sustainable tourism to meet the needs and demands of its residents (Puczko, & Ratz, 2000). The development of sustainable tourism is difficult without the support and participation of community residents (Fallon & Kriwoken, 2003; Gursoy & Rutherford, 2004; Nicholas et al., 2009). Thus, the support of residents is a critical factor for ongoing community development.

Understanding the factors impact on local residents' support for sustainable tourism development can help to promote sustainable tourism because communities can assess these factors to predict the level of support by their residents. Therefore, factors that influence local community support for sustainable tourism development have been extensively studied by tourism scholars. These factors, such as attitudes (Lai & Nepal, 2006; Lepp, 2008), perceived effects (Dyer et al., 2007; Yoon et al., 2001), community attachment (Nicholas et al., 2009), and perceived benefits (Gursoy et al., 2002; Nunkoo & Ramkissoon, 2011), may affect residents' support for sustainable tourism development. However, relatively few studies have been examined the relationship between support for sustainable tourism development and the local resident' well-being and involvement in the context of heritage tourism (Smith & Diekmann, 2017).

To fill these research gaps, this study aims to identify aspects of residents' WB in the heritage tourism context. Second, the findings of this study deepen the understanding of residents' WB by demonstrating the impact of the material and non-material domains of WB on residents' support for sustainable tourism development. Furthermore, the effects of residents' socio-demographic characteristics of community support are also discussed.

### ***Literature review***

#### ***Well-being***

Well-being is one of the common words of the decade and is present in most speeches related to people's daily life and activities (Smith & Diekmann, 2017). Well-being has been a philosophical and sociological concern since the beginning of time, especially for key thinkers and academics. Philosophers throughout history have

examined human life satisfaction and the meaning of happiness. Most of the concepts of well-being mentioned can be related to a positive philosophical vision of the world and focus on the individual and what makes people happy (Boniwell, 2016; Rodogno, 2014). This search for an understanding of human well-being has extended over time to disciplines such as psychology, health sciences, and economics. Being multidisciplinary by nature, in recent decades, tourism studies have become more focused on well-being, both from a theoretical and methodological point of view.

Tourism studies began to focus on well-being through a wide range of terms that were partly inspired by philosophy and psychology. Accordingly, the concept of well-being approaches to the emotional and psychological aspects of people. It emphasizes happiness, joy - a state that reflects low negative effects, high positive effects. Uysal et al. (2016), Woo et al. (2015) and Sirgy et al. (2011) suggest that the terms “quality of life”, “life satisfaction” and well-being maybe use interchangeably. On the other hand, there is another approach to the concept of well-being, such as emphasizing human perception and the meaning of life (Gazley & Watling, 2015). Also, Kokko et al. (2013) stated that the concept of well-being includes cognitive and emotional aspects. Kim et al. (2013) argued that well-being - including community well-being, material well-being, health and safety, well-being and emotional well-being - is the important life domain for enhancing local residents’ overall quality of life for tourism. To date, Woo et al. (2015) and Kay & Diekmann (2017) show that the study investigates well-being with specific life domains, including material and non-material well-being domain (community, emotional, and health/safety life) as a determinant of overall quality of life and support for further tourism development.

#### *Relationship between residents’ well-being and support for sustainable tourism development*

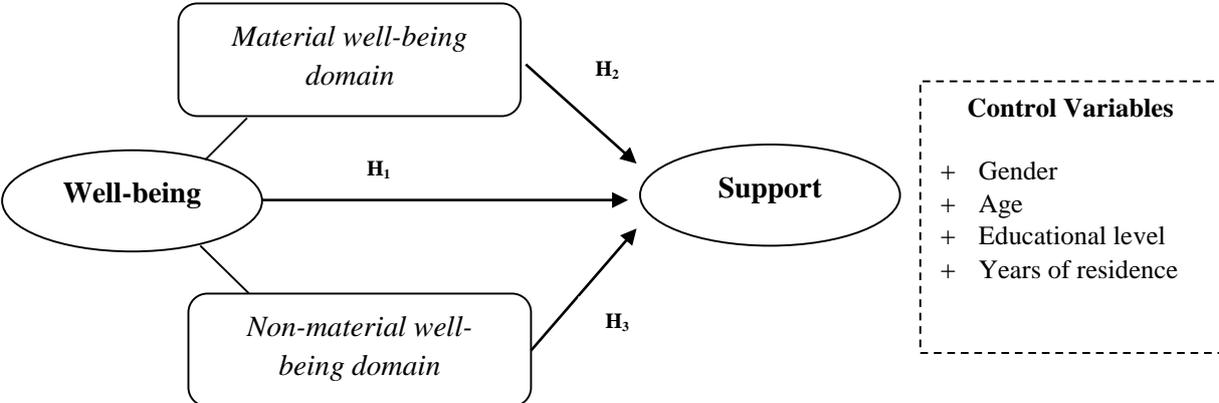
Well-being has measured through many different factors depending on each researcher's perspective and approach. Obviously, it is a core element of policymakers in tourism development in particular and social development in general. Increasing research has evidenced that tourism is beneficial for mental and physical well-being (Kay & Diekmann, 2017). In addition, recognizing the important role of resident’s support for tourism, researchers have focused on understanding their well-being and support. For example, Nunkoo & Ramkissoon (2011) used quantitative research on 559 respondents emphasized a direct positive relationship between well-being and support. The sample population of this study consisted of residents of

Grand-Baie, a tourist resort situated in the north-west coastline of Mauritius - traditionally a fishing and farming village, the site has become the island's main tourist hub. Besides, due to motivating to the researches, Woo et al. (2015) said that well-being had a positive and significant effect on support for tourism development through quantitative research on 407 respondents. The sustained success of tourism development is only likely to be achieved when residents have high WB and are willing to support tourism. Similarly, the study of Nunkoo & So (2016) reported that well-being led to resident's support for tourism in the Niagara Region, Canada with a usable sample of 391 respondents. Recently, the connection between well-being and support for tourism has been emphasized by Kay & Diekman (2017). To sum up, in the research papers on the relationship between well-being and support for tourism, resident's support for tourism development is considered as the final dependent variable of the study. However, the gap in the previous research, there is no research on the connection between well-being and support of sustainable tourism development in the World Heritage Site. Thus, the relationship between well-being and support for sustainable tourism development was more examined by researchers.

*Proposed model*

The model as proffered by Woo et al. (2015) explained the impact of residents' life satisfaction with support for further tourism development. We used Woo et al.'s model (2015) adjusted as our original model for our study. In addition to proposing the direct impact of local residents' WB, we considered the material and non-material WB domain as important processes which in turn contribute to support for sustainable tourism development (Figure 1).

**Fig. 1. General conceptual model of the study**



### *Hypotheses*

+ Hypothesis 1: Residents' WB has a positive impact on their support for sustainable tourism development

+ Hypothesis 2: Material well-being domain has a positive impact on resident's support for sustainable tourism development.

+ Hypothesis 3: Non-material well-being domain has a positive impact on resident's support for sustainable tourism development.

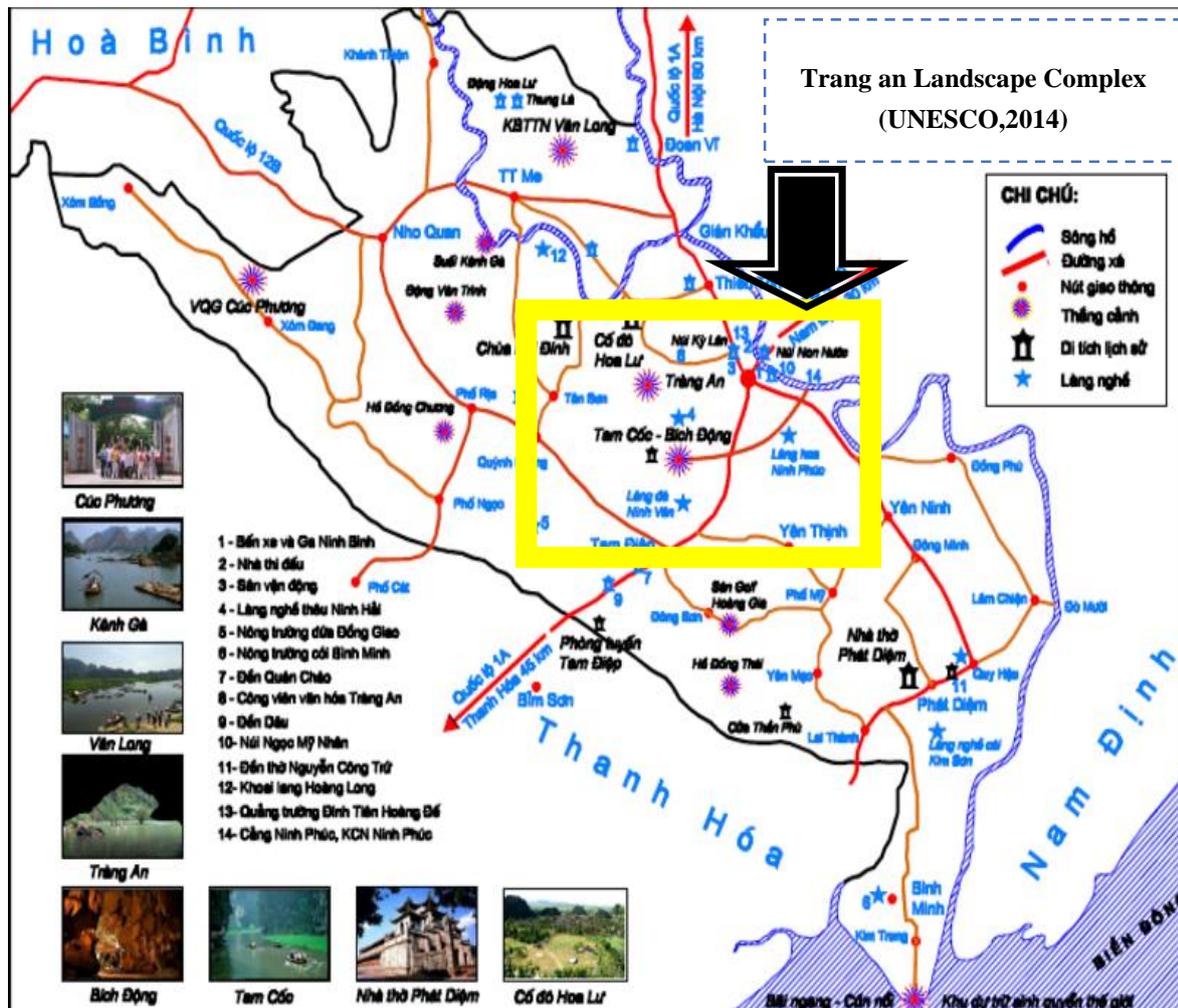
## **2. Method**

### *Research Context*

According to the report of population review statistics in Ninh Binh province in 2017, Ninh Binh population assessment report, there are around 21,000 people in the buffer area. Approximately 14,000 people are living in Trang An and about 49,000 inhabitants are living today in a core zone with 12 municipalities in a central area of around 73,000 and 8 in an 8 buffer zone. In 20 municipalities in Trang An area of scenery, there are about 122,000 people (General Statistics Office of Ninh Binh Province, 2017). Trang An's people mostly belong to Kinh Ethnic Group, and their main jobs are related to agriculture and tourism.

Trang An Tourism Complex, in the north of Ninh Binh Province, has been known as a World Culture and Nature Patrimony. It is the country's first world heritage site combining both natural and cultural aspects. Located in Ninh Binh Province of North Vietnam, Trang An Landscape Complex (Trang An) is a mixed cultural and natural property mainly within three protected areas, Hoa Lu Ancient Capital and Trang An - Tam Coc - Bich Dong Scenic Area, and Hoa Lu Special - Use Primary Forest. The property covers 6,172 ha within the Trang An calcareous massif and is surrounded by a buffer zone of 6,079 ha, mostly comprising rice paddy fields. It is situated about 90 km southeast of Hanoi, in the south edge of the Red Delta. Trang An is administered by the Ninh Binh Provincial People's Committee and administered by the Trang An Landscape Complex Management Board (Unesco, 2014). The scenic complex Trang An was inscribed as Vietnam's first dual world heritage in June 23, 2014, in Doha, Qatar's capital (World Heritage Committee, 2014) A World Heritage Committee (2014) recognized the Global Outstanding Value of Trang An Scenic Area on the basis of three main pillars identified as Guidelines for Implementing the Convention on the Protection of Cultural and Natural Heritage The World, in order to meet the criteria for: culture, aestheticism and geology – geomorphology. (Figure 2).

Fig.2. Diagram of tourist routes of Trang An landscape complex



### Sample and Data Collection

Trang An's central area for protection is 6172 ha, which is situated mainly in three communes namely Truong Yen, Ninh Hai which are in the Hoa Lu district and Gia Sinh in the Gia Vien district. (UNESCO, 2014). And thus, the representatives of this sample are 350 people from 3 these communes. People who involved in this survey have generated the main income in their family or have already been over 18 years old, all of them are living in the examined areas. The sample is distributed as follows: 97 homes in Gia Sinh commune, 161 homes in the Truong Yen commune and 92 in Ninh Hai commune. The test sample they selected was based on stratified sampling and convenient random sampling that contributed to the representativeness of the sample. In this case, the categories of selecting samples which given by the group increase the representation and efficiency of the researching samples and avoid the non-representative sample that has an impact on the results.

Two kinds of data were used by the data collection team, including: primary and secondary data. In addition, the research team used the figures provided by: Ninh Binh Department of Tourism (2018), the Statistical Office of Ninh Binh (2019), the Statistic Yearbook of Ninh Binh (2017), and other articles, domestic and foreign journal scientific research articles. The topic is therefore collected by the method of desk research for the collection of secondary data (Nguyen, 2011). For primary data, the scientific research team of the Department of Economics and Human Resource Management at the National University of Economics examined the families living in three communes of Trang a Complex. The interviewees are mainly the representatives of main family income. In terms of reference materials, the research team used two types of documents, paper (hard copies), and online survey forms (soft copies). With regard to the first survey results, there were 350 votes cast, 304 votes valid and 46 votes remaining invalid because of incomplete information. The response rate is quite high and the information is quite complete based on the number of votes collected. However, during the survey, some people did not cooperate with the team because they were afraid of information security problems. After the local residents completed the surveys, the data was entered into the Statistical Package for the Social Sciences (SPSS) for analysis with the following specific steps: i) Do statistics describing the observable variables of the scale; ii) Assess the reliability of the scale; iii) Verify the value of the scale by means of exploratory factor analysis – EFA; iv) Analyze correlation and multiple regression; v) Analyze variance ANOVA.

### *Measurement scales*

The main constructs in this study were operationalized using scales found in existing literature. In order to measure material and non-material well-being domain, this research developed 16 items from a review of Kim (2012). Three items for cost of living and four items for income and employment were used to measure residents' material well-being domain. In order to measure the non-material well-being, three different sub-domains (community life, emotional life and health/ safety life) were used. These items were measured on a five-point Likert-type with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied.

A 5-item scale for support for sustainable tourism development was constructed to assess the extent of a resident's intention to support sustainable tourism development, based on the findings of Lee (2013). All of the indicators were measured on a 5-point Likert scale with classification of "strongly disagree" and "strongly agree".

**Table 1. Correlation between construct**

	Support	Gender	Education Level	Years of residence	Age	Material WB domain	Non-material WB domain
<i>Support</i>	1.000						
<i>Gender</i>	.072	1.000					
<i>Education Level</i>	.292	-.128	1.000				
<i>Years of residence</i>	.378	-.101	.261	1.000			
<i>Age</i>	-.206	-.013	-.456	-.221	1.000		
<i>Material WB domain</i>	.585	.189	.168	.251	-.187	1.000	
<i>Non-material WB domain</i>	.517	.031	.320	.272	-.190	.652	1.000

Table 1 shows the correlation coefficient between those constructs. The results clearly indicate a positive relationship between perceived value of tourism development, satisfaction with material life domain, non-material life domain, overall quality of life, and support for further tourism development

### **3. Results**

#### ***Statistics describe the sample***

Of the 304 respondents, 67.1% were female and 12.5% were between 18 and 25 years old, with 77% between 26 and 55 years old, and 6.6% over age 56 years. In terms of monthly household income, 16.1% of the sample earned under 3 million Vietnam dongs, 73% earned between 3 million Vietnam dongs and 10 million Vietnam dongs and 10.9% earned more than 10 million Vietnam dongs. On educational level, 24.7% of the respondents had university degrees, 6.6% had attended college, and 38.2% of citizens graduated from high school. The proportion of citizens living more than 10 years registered the largest share, at 81,6%. (Table 2)

**Table 2. Description of the Respondents (N=304)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b><i>Gender</i></b>		
- Female	204	67.1%
- Male	100	32.9%
<b><i>Age</i></b>		
- 18 – 25	50	16.4%
- 26 – 35	60	19.7%
- 36 – 45	117	38.5%
- 46 – 55	57	18.8%
- 56 or more	20	6.6%
<b><i>Level of education</i></b>		
- No education	42	13.8%
- High school education	116	38.2%
- Intermediate education	51	16.8%
- College education	20	6.6%
- University education	75	24.7%
<b><i>Years of residence (year)</i></b>		
- Under 1	6	2.0%
- 1 – 5	14	4.6%
- 5 – 10	36	11.8%
- 10 or more	248	81.6%
<b><i>Average income (million Vietnam dongs)</i></b>		
-Under 3	49	16.1%
-3 – 5	117	38.5%
-5 – 10	105	34.5%
-10 or more	33	10.9%

*Relationships between residents' well-being and support for sustainable tourism development*

According to the table 3, the regression analysis demonstrated that the "Well-being" factor had a non-normalized  $\beta$  factor of 5%, which would have a positive direction impact on support for sustainable tourism development. Specifically, the  $R^2$  (R Square) coefficient is 0.472 - the independent variables explain 47.2% variation of the dependent variable. Sig value testing of the "Well-being" variable is also 0.000 - this variable is statistically significant at 5%.

**Table 3. Model 1 - Regression between residents' well-being and support for sustainable tourism development**

Relationship	B	SE	R <sup>2</sup>	F
Well-being → Support for sustainable tourism development	1.019	.408	.472	23.384**

Note: \*P<.1; \*\*P<.05; \*\*\*P<.01.

Consequently, the "Well-being" factor has a positive impact on "Support for sustainable tourism development". The regression model is rewritten as follows:

$$\text{SFSTD} = 1.019 + 0.603*\text{WB} + 0.075*\text{Gen} + 0.063*\text{Edu} + 0.020*\text{Y} + 0.156*\text{Time} + 0.031*\text{Job} - 0.013*\text{Age}$$

Model 1 indicates that the factor "Support for sustainable tourism development" increases by 0.603 unit, "Well-being" factor also increases by 1 unit. Thus, it can be concluded that the more the local residents' well-being, the more their support for sustainable tourism development well-being.

*Material/ non-material well-being domain engagement influencing the local residents' support for sustainable tourism development*

According to the table 4, the regression analysis demonstrated that the "Material well-being domain" and "Non-material well-being domain" factor had a non-normalized β factor of 5%, which would have a positive direction impact on support for sustainable tourism development. Specifically, the R<sup>2</sup> (R Square) coefficient is 0.442- the independent variables explain 44.2% variation of the dependent variable. Sig value testing of the "Well-being" variable is also 0.000 - this variable is statistically significant at 5%.

**Table 4. Model 2 - Regression material/ non-material well-being domain engagement influencing the local residents' support for sustainable tourism development**

Relationship	B	SE	R <sup>2</sup>	F
Material well-being → Support for sustainable tourism development	.487	.083	.442	21.667**
Non-material well-being → Support for sustainable tourism development	.170	.069		

Note: \*P<.1; \*\*P<.05; \*\*\*P<.01.

Consequently, the "Material/ non-material well-being domain" factor has a positive impact on "Support for sustainable tourism development". The regression model is rewritten as follows:

$$\text{SFSTD} = 0.769 + 0.487*\text{MWB} + 0.170*\text{NMWB} + 0.040*\text{Gen} + 0.075*\text{Edu} + 0.027*\text{Y} + 0.157*\text{Time} + 0.028*\text{Job} - 0.009*\text{Age}$$

Following model 2, the factor "Support for sustainable tourism development" increases by 0.487 units, "Materia well-being domain" factor also increases by 1 unit. And, the factor "Support for sustainable tourism development" increases by 0.170 units, "Non-material well-being domain" factor also increases by 1 unit.

*Effects of socio-demographic factors on the local residents' support for sustainable tourism development*

#### *Gender*

The Levenne test shows that there was a difference between male and female groups (*Sig.* < 0.05). After the implementation of the T- test, there was a difference in supporting sustainable tourism development among resident groups by gender (*Sig.*(2-tailed) < 0.05).

#### *Age*

The ANOVA showed significant differences between age groups ( $F_{(4,303)} = 5.723, p < .05$ ). There is a difference in support for sustainable tourism development between the youngest group (18-25) and the remaining age groups (*Mean Difference* (1-2) = -.32556); (*Mean Difference* (1-3) = -.50056) (*Mean Difference* (1-4) = -.33949) (*Mean Difference* (1-5) = -.04778).

#### *Level of education*

A significant main effect of the level of education on the support for sustainable tourism development ( $F_{(4,303)} = 3.196, p < 0.05$ ). The difference between groups makes sense when comparing no education to high school education (*Mean Difference* (1-2) = -.41738; *Sig.* < 0.05); no education to intermediate education (*Mean Difference* (1-3) = -.37831; *Sig.* < 0.05); and no education to college education (*Mean Difference* (1-3) = -.37646; *Sig.* < 0.05).

#### *Years of residence*

The years of residence have a great influence on the support for sustainable tourism development ( $F_{(3,303)} = 16.598, p < 0.05$ ). For those who have lived in Trang An Landscape Complex for more than ten years, showing support for sustainable tourism is different from those who have lived for less than a year (*Mean Difference* (4-1) = .68776); (*Mean Difference* (4-2) = .39895).

#### **4. Discussion and Conclusion**

Studies on sustainable tourism development programs are gaining attention in the recent period, particularly in the context of developing countries and world heritage sites. Therefore, the study was conducted with the aim of assessing the relationship between well-being and the local community's support for sustainable tourism development in Trang An Landscape Complex. The theoretical model was based on Woo et al. (2015). Our research shows that well-being has a positive relationship to support for sustainable tourism development. Our results are the same as the previous researches (Nunkoo & Ramkissoon, 2011; Woo et al., 2015; Nunkoo & So, 2016; Kay & Diekman, 2017). In addition, we recommend accepting material well-being and non-material well-being that impact support for sustainable tourism development. In particular, the degree of influence of material well-being is greater.

The study also distinguishes support differences from socio-demographic factors. Results of research show that there is a difference in support between men and women. The youngest residents (18-25) have the worst support for sustainable tourism development, whereas those between 36 and 45 show better support. The age group graduating from high school also has the best support. Perhaps this age group is heavily involved in local tourism activities. Those who have a long residence time in the locality often have better support. In short, the well-being of the community has a direct impact on their tourism development support. In particular, the local community will be more concerned about the material well-being domain than non-material well-being domain. Furthermore, socio-demographic factors are also a factor affecting the local community's support for sustainable tourism development.

In conclusion, well-being has a positive effect on support for sustainable tourism development. It means that the high well-being is, the more support for sustainable tourism development is. Moreover, the finding of research has two new points: firstly, well-being - including material well-being and non-material well-being domain affects support for sustainable tourism development but the strongest effect is material well-being domain. Secondly, effects of socio-demographic factors on the local residents' support for sustainable tourism development are different. The new point of this paper is also the gap in the previous research. Thus, the finding importantly contributes to the planning of policymakers in tourism development in particular and social development in general. If the current level of satisfaction in both non-material and material life domains go down, the local residents may not support further sustainable tourism development in their community.

As all other studies, the present study has a number of limitations. First of all, the study collects data from community residents living in three different Trang An' communes. If the study collects data from different destinations, the strength of the relationship between the four constructs may show some variations. Therefore, future research considers collecting data from destinations that may display a differing level of sustainable tourism development. Secondly, this research is limited by the exclusive use of quantitative methods, which test the relationship between the variables that influence residents' support for sustainable tourism development. This quantitative approach describes how residents satisfy in their life, but it does not explain why they have such perceptions (Sharpley, 2014). Thus, a further qualitative analysis would be useful to strengthen the explanations provided, delving into the different profiles that have emerged in our analysis. In particular, a series of in-depth interviews could provide a more detailed justification and a greater understanding of these profiles in relation to residents' support for sustainable tourism development.

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# TOWARDS A NEW CIRCULAR FOR THE ESTABLISHMENT AND OPERATION OF INTERMEDIARY ORGANIZATIONS IN THE SCIENCE AND TECHNOLOGY MARKET IN VIETNAM

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## **Abstract**

*Based on a brief review and analysis of from the scenario of waste sorting technology transfer Case study in Vietnam, the paper highlights a critical point that, a draft Circular replacing the Circular No. 16/2014/TT-BKHHCN dated June 13, 2014, of the Minister of Science and Technology shall be finalized very soon. This new circular stipulates favorable conditions for establishment and operation of intermediary organizations in Vietnam's science and technology market for the time coming.*

**Keywords:** *technology transfer; Intermediary Organizations; Circular*

## **1. Introduction:**

After 30 years of innovation, Vietnamese economy has overcome the stagnation as well as promoted our labor capacity and endless creation. We have gained great and significant achievements having better and better influence. And science and technology have contributed vital parts in that success.

Although the concept Technology transfer services have appeared in recent decades, they have become heated issues studied by many researchers. They have played an important role in the whole world economic development, especially for nations undertaking industrialization and modernization like Vietnam. Studying and making policies, strategies to improve technology transfer services has been considered as a key step to ensure the rapid and sustainable development of a nation. The result of this paper states that, a draft Circular replacing the Circular No. 16/2014/TT-BKHHCN dated June 13, 2014, of the Minister of Science and Technology shall be finalized very soon. This new circular stipulates favorable conditions for establishment and operation of intermediary organizations in Vietnam's science and technology market for the time coming.

## **2. Observation from the scenario of waste sorting technology transfer Case study in Vietnam**

As of the end of December 2017, according to the General Statistics Office, there are over 561 thousand enterprises operating and the demand for new technologies is quite high. Currently only 10% of enterprises use technology since the 1970s, 30% use technology from the 1980s and 50% from the 1990s. many research results implemented by domestic research organizations with low investment costs, however, research institutions and agencies still lack commercialization skills, information and confidence in management of technology. The link between universities, research institutes and manufacturing sector relies heavily on personal connections.

Typically, the commercialization has not been successful in the technology of sorting and disposing of automatic waste by the engineer, Mr. Lai Minh Chuc.

At Ha Nam Province Waste Treatment Plant, the monitoring and control system with automatic mechanical technology and digital image + Internet transmission was completed by Engineer Lai Minh Chuc in May 2010. In order to have a basis to decide to allow mass production, in January 2012, the Ministry of Science and Technology and the Ministry of Industry and Trade decided to support 30% of the capital (equal to US \$ 120,000) for the author to implement the project... By May 2012, Engineer Chuc successfully manufactured his automatic control system with digital programming technology (PLC) and remote control by wireless device and image-perfect technology. The highlight of the 4th generation automatic sorting machine combination, used for sorting input composite waste, is the automatic sorting technology which saves huge cost and energy compared to the sorting lines already import and domestic manufacturing research. :

- Installation area is less than 10%;
- Using 10-20% of fair labor;
- Only use electrical energy equal to 30%;
- The total cost of waste classification is reduced by over 70%;
- Volume of iron and steel for manufacturing reduced by 80%

The most remarkable thing is that the quality of waste sorting of this technology is much higher than that of sorting devices that many people directly pick up waste by hand, overcome the secondary pollution situation of emissions and micro infectious bacteria for workers and the environment around the factory. According to the director of Ha Nam Waste Treatment Plant Nguyen Ngoc Hue (video source of VTV6), this is an automatic technology without manual labor, should be widely used

in Vietnam, as it will be more suitable. compared to other waste sorting solutions. Regarding automatic waste treatment technology, Engineer Chuc has been granted a number of patents by the National Office of Intellectual Property; of invention, such as, number 12044 for Solid Waste Handling and Sorting Equipment with a Patent granted on November 19, 2013

The experts from WIPO have determined the technology price of about 12 million euro. However, due to lack of access to any science and technology intermediary organization, it is only expected that by 2019, the project will formulate two waste plants projects in the South and Central of Vietnam.

### **3. The need to replace the Circular No. 16/2014/TT-BKHHCN on the conditions for establishment and operation of the intermediary organization of the science and technology market**

Based on the above observation from the scenario of waste sorting technology transfer Case study in Vietnam, the author shall review the need to replace the Circular No. 16/2014/TT-BKHHCN on the conditions for establishment and operation of the intermediary organization of the science and technology market.

On June 13, 2014, the Minister of Science and Technology issued the Circular No. 16/2014/TT-BKHHCN on the conditions for establishment and operation of the intermediary organization of the science and technology market (so-called Circular 16) aims to form a network of intermediary organizations, promoting consultancy and brokerage activities in technology transfer, commercializing research results. After 04 years of implementing the Circular, in addition to identifying intermediary organizations, the network establishment purpose was basically not achieved due to the setting of conditions attached to the operation registration procedure.

In the context of reduction of administrative procedures, strengthening support to develop intermediary for the science and technology market, and the innovation ecosystem, it is no longer appropriate for any conditions and set up procedures for establishment and operation registration for intermediary organizations.

The 2017 Law on Technology Transfer and the Decree 76/2018/ND-CP detailing and guiding the implementation of the Law on Technology Transfer stipulates that an intermediary organization to receive support must be an organization performing functions such as connection and brokerage, consulting, evaluating, evaluating prices, ... without setting conditions for each type of intermediaries and procedures for establishment and operation registration. Instead, these two legal documents regulate support mechanisms (subjects, content, forms, sources of support...) in order to improve operational capacity, promote the intermediary organizations in the market, thereby forming a network that can connect,

share resources, information, etc. However, the support content should continue to be concretized as a basis for determining the level support in financial documents of related programs and projects.

Therefore, replacing Circular 16 towards establishing supportive contents shall be an urgent requirement to meet practical requirements.

#### **4. Proposed functions of intermediary organizations**

- to provide consulting and brokerage services, technology transfer promotion, commercialization of scientific research and technological development results; technology assessment, evaluation and assessment; incubation of technology and incubation of science and technology enterprises according to the law on technology transfer.

- to provide innovative start-up support services, including:

a) Advise organizations and individuals on how to improve, innovate technology, technology products, business models; management, exploitation and commercialization of intellectual property;

b) Providing services to support organizations and individuals in selecting, acquiring, decoding, mastering and improving technologies;

c) Consulting and training on scientific research and technological development; complete, apply and commercialize technology; start a business, corporate governance, market development, branding, intellectual property management;

d) Investment, mobilize investment capital, support financial activities, credit for incubating and commercializing science and technology and enterprises;

An intermediary organization performing the functions specified in this circular may be organized in the forms of technology exchanges centers, transfer of technology offices, incubators, or other entities according to the current legal regulations.

#### **5. Identified areas to support intermediary organizations**

- to support according to the value of brokerage contracts, consultancy, promotion of science and technology market, technology commercialization, results of scientific research and development.

- to give priority in participating in programs and projects that support the promotion of science and technology market development and commercialization of scientific research and technological and intellectual property results. Innovation start-up and other related programs and projects using the state budget.

- to support for organizing and participating in events at home and abroad, including: (I) Support to organize and participate in workshops on technology transfer and commercialization; Technology and equipment market (Techmart), Supply-demand technology demonstration (tech demo); exhibition introducing technology, results of scientific research and technological development; Investment day for technology commercialization (Demo Day), Startup Day (Startup Day), Innovation Day (Innovation Day), Invention exhibition (Invention Exhibition), Science and technology exhibition commercialization potential (Techshow);

(ii) Support for providing renting costs of local and international exhibitions for the promotion of science and technology market, technology commercialization.

- to support in terms of innovation start-ups

a) Support the cost of using equipment at technical facilities;

b) Supporting fees for participation in incubation facilities and common working areas;

c) Support under consultancy contracts on procedures for establishment, transfer and protection of intellectual property rights;

d) Support under consultancy contracts on the formulation and implementation of intellectual property policies and strategies;

e) Support according to the value of consultancy contracts on design, protection registration, exploitation and development of the value of inventions, industrial designs and trademarks;

e) Support according to the value of consultancy contracts on the formulation of grassroots standards;

f) Support for testing, verification, inspection and quality certification costs.

### **Conclusion**

Technology transfer intermediary services including technology brokerage, consulting, promotion together with technology assessment, and evaluation services are a continuous chain and a key to success of technology transfer. Promoting the development of technology transfer services is one of the most urgent requirements today. Vietnam is in the period of accelerating industrialization and modernization, thus, issuing new sub-laws to support technology transfer services conducted by intermediary organizations will help to fill the gap between Vietnam with other economies in the region.

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# FOSTER THE ROLE OF FDI ENTERPRISES TOWARDS SOCIO-ECONOMIC DEVELOPMENT IN PHUTHO PROVINCE

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## **Abstract**

*In recent years, FDI calling has been ubiquitous and no longer strange in development strategies of every nation as well as locality. However, there has been heated concern about the practice of how to attract and utilize this genre of capital to achieve the highest level of effectiveness without too much dependence and negative side effects related to it including environmental pollution, technological rubbish or political binding. Also, the question how to improve the performance of FDI enterprises to maximize the capital has seized tremendous concern and interest. This paper focuses on analyzing the current situation of FDI enterprises in the province of Phu Tho in recent years; accordingly, fundamental solutions will be recommended in order to enhance the productivity of those enterprises.*

**Keywords:** *FDI enterprises, capital, productivity*

## **1. Rationale**

Reckoned as an agricultural province with poor infrastructure, Phu Tho desperately needs a remarkable capital to meet the provincial demand of eco-socio development, industrialization, modernization and competitiveness. Highly aware of this situation, Phu Tho has invested great efforts in encouraging all possible resources to address current difficulties along with exploiting available potentials. One of the marked strategies of this province falls for the “click” from outside through completing the macro institution, policies and a series of favorable tools to attract and support investors. Thanks to the aforementioned endeavour, FDI inflow of Phu Tho, which plays a crucial part in socio-economic development of the province, has witnessed continual growth.

However, it cannot be denied that the number of potential investors who have come to investigate the investment climate and conducted actual projects in Phu Tho is still modest, far below this province's potentials. In addition, there have not been several strong financiers who hold strong positions in terms of both capital and technology. On the other hand, the constructive role of FDI enterprises towards the province's socio-economic development has dramatic constrains, compared to those favours received from the local authority.

## **2. The nature and Role of FDI enterprises towards eco-socio development**

### **\* Key Definitions:**

#### *- Foreign Direct Investment (FDI):*

There exists a variety of definitions for FDI, each of which concentrates on certain aspect of this type of capital.

In general, FDI could be defined as: a type of mobilizing international capital, where the owner also acts the direct manager and decides how to use this finance. The appearance and development of FDI is the inevitable result of the internationalization and international labor specialization.

#### *- FDI Enterprises:*

There are different concepts of FDI enterprises, the most widely known of which states that: they are legal entities newly established in the country of investees; parties hold different nationalities and the foreign partners have an acceptably low contribution of capital in order to be directly involved in the management of the enterprise. This concept emphasizes the role of foreign founders in FDI enterprises.

The 1996 Foreign Investment Act did not mention any definitions of FDI enterprises, which only recognized enterprises with foreign investment including joint and wholly foreign-owned ventures. In terms of legal aspect, the aforementioned enterprises operate in the same way as limited companies.

In Vietnam, FDI enterprises are often understood as a form of financing where foreign investors use partial or entire capital to found a new entity following strictly the foreign investment law at the local country of Vietnam to achieve the commonly set objectives of all stakeholders.

According to Article 3 term 18 of 2014 Investment Act "Economic units with foreign investment are those with foreign investors performing as either stockholders or staff members".

Therefore, "*Companies with foreign direct investment (FDI) represent a form of economic organizations where one or more parties hold different nationalities who together contribute their capital and manage the operation of the organization for*

*profitability target and in line with the legal regulations of the home country as well as international rules”.*

*\* Role of FDI enterprises towards eco-socio development:*

*Firstly*, they contribute to the scale of investment, thus, help to promote the eco-socio growth at both national and local level.

In Vietnam in general, Phu Tho in particular where internal reserves are low, conditions for technological innovation are poor, then FDI truly plays an essential role in addressing the shortage of finance while pushing investment, technology advancement, labor productivity, economic growth, and the transition towards efficiency and modernity.

*Secondly*, they create more jobs and help develop the human resource.

Job creation and improved labor force are among the objectives of attracting FDI. Understandably, addressing employment is one of the most crucial factors to promote economic development and sustainability. It could be said that FDI does have a role to play in improving people’s income and life quality<sup>2</sup>.

Moreover, FDI enterprises may exert positive impact on upgrading the human resource of other companies with which they have cooperation, especially their partnership. Such improvement in host countries (receiving investment) can become flourishing when staff of FDI enterprises shift to work for state-owned or self-employed businesses.

*Thirdly*, they encourage the modernization-oriented shift of economic structure.

Economic transition has been a demand at not only internal but international level, which becomes ubiquitous and widely seen nowadays. FDI is an essential component of external economic activities, through which global countries will join more and more into the economic collaboration with others. As a result, this shift is highly needed to match the international labor specialization.

Thanks to FDI, such key industries as oil and gas refining, electronics and home electronics, agricultural processing have been able to witness remarkable growth. In addition, this source of capital stimulates technological application in various economic sectors, which accordingly helps advance the productivity, economic transition in terms of structure proportion and overall efficiency of the national economy. On the other hand, a couple of industries have undergone depression or even collapse<sup>3</sup>.

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<sup>2</sup> According to Vietnamplus.vn: FDI attraction is motivation for Vietnam’s economic growth in 2016, Journal of Finance, Vol 2 (12/2015)

<sup>3</sup> Pham Thi Nga, Pham Thi Thu Huong “FDI with the goal of sustainable economic development in Vietnam”, National Science Conference “Accounting-Auditing and Vietnam Economy in the Industrial Revolution 4.0”, p. 257

*Fourthly*, they boost technological science advancement.

FDI is considered a principal channel to foster technologic competence of the host country as this is among the most central targets of the investment. Fortunately, FDI enables Vietnam to have access to advanced technologies worldwide, paving the ground for technology-intensive industries like electronics, telecommunication, biotech to flourish<sup>4</sup>. Thanks to FDI, a number of modern technologies have been transferred to host countries where they act as milestone in those economies. Also, FDI encourages Vietnamese enterprises to innovate technology, enhance quality, diversify products at competitive prices.

*Fifthly*, FDI into Vietnam will create such influence known as "spillover effect", thereby attracting other capital sources into Vietnam such as ODA and NGO. At the same time, this effect will spread to other economic sectors through the linkage between foreign-invested enterprises and domestic counterparts, technology and management capacity. The spread can spill vertically across businesses or horizontally among firms in the same industry. On the other hand, foreign invested enterprises also create competitive motivation for domestic enterprises to adapt in the context of globalization, accordingly improving the capacity of domestic companies<sup>5</sup>.

### **3. Current performance of FDI enterprises in Phu Tho**

In recent years, Phu Tho has issued several favourable mechanisms and policies on investment attraction with focus on investment promotion, administrative reform, reducing intermediate stages and shortening processing time of investment procedures. With this method, the number of FDI enterprises, projects and capital in Phu Tho has continuously increased. Many foreign investors from Japan, South Korea, India, Slovakia, Italy... came to explore investment opportunities in the province.

#### ***3.1. Authorized projects and Registered capital of FDI enterprises***

Recently, the number of FDI enterprises, projects and capital in Phu Tho has continuously increased. While in 2012, the province had only 85 FDI projects with the registered capital of 491.83 million USD, of which only 68 actually operated with the investment capital of 393.2 million USD, an average of 5.78 million USD /project, by the end of 2017, there were up to 135 FDI enterprises in Phu Tho. By the end of the third quarter of 2018, Phu Tho province had 150 FDI enterprises with a total registered capital of nearly 1.1 billion USD. To be specific, out of the aforementioned 150 projects, 120 were from Korea with a total registered capital of 793 million USD,

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<sup>4</sup> Ngo Van Cuong (7/2015), "FDI in Vietnam", Journal of Political Philosophy

<sup>5</sup> Pham Thi Nga, Pham Thi Thu Huong, "FDI with the goal of sustainable economic development in Vietnam", National Science Conference "Accounting-Auditing and Vietnam Economy in the Industrial Revolution 4.0", pp. 257

accounting for 80% of foreign direct investment in the province, other 07 came from Japan with a total registered capital of around 36 million USD<sup>6</sup>.

**Table 1: Authorized projects and total registered capital of FDI enterprises in Phu Tho in 2012 and during 2015-2017**

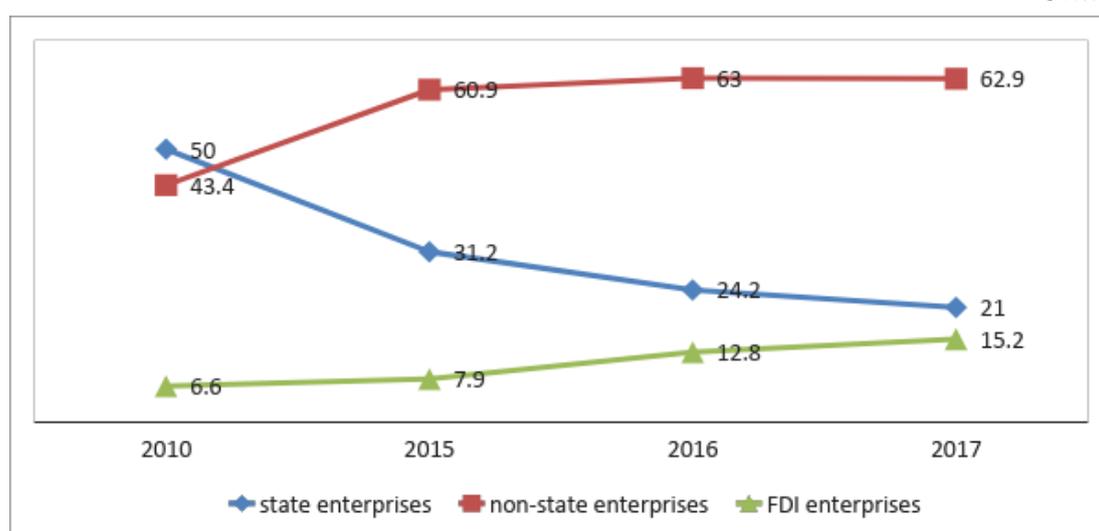
	Authorized projects (project)	Total registered capital (Million USD)
2012	85	491.83
2015	106	800.00
2016	119	906.60
2017	135	1.84.2

*Source: Source: Phu Tho Statistical Yearbook, p.177*

However, in addition to the above achievements, there exists certain limitations in FDI attraction in Phu Tho, including: the number of projects is not large, the scale is small and the technology level is still low. FDI enterprises mainly invest in light industry: garment, textile, leather shoes, processing agricultural products, chemicals for textile and garment industry, packaging ... Projects for manufacturing computer or electronic equipment account for small proportion. Besides, technology level as well as management competence is poor compared to other regions in Vietnam.

### 3.2. Structure of investment of FDI enterprises in Phu Tho

*Unit: %*



**Figure 1: Capital structure by current value in Phu Tho in 2010 and during 2015-2017**

*Source: Phu Tho Statistical Yearbook, p. 161*

<sup>6</sup> Lam Dao An (Vietnam News)

There is no denying the positive role of FDI enterprises in the province's socio-economic development over the years. This economic sector has progressed more and more actively in the context of limited investment capital from the budget while addressing the financial demand of state-owned enterprises for economic development in the generation of industrialization and modernization. It can be seen that, contrary to the slight growth the non-state sector, there is a continuous upward trend among FDI enterprises out of the total investment capital structure implemented in Phu Tho province.

In 2010, the FDI sector accounted for only 6.6% of the provincial capital structure - a modest figure compared to neighboring provinces and the whole country. By 2017, the total investment of FDI enterprises in Phu Tho reached VND 3,601,386 billion, an increase of 5.09 times compared to 2010 (VND 106,820 billion), accounting for 15.2% of the total capital structure. This shows the province's determination and attempt in improving the investment and business environment as well as actively promoting investment in key markets.

However, although the investment capital structure of the FDI sector has continuously increased in the total investment of Phu Tho, the figure of 15.2% is still quite modest for a province with such huge potentials, especially from preferential policies of the province for FDI enterprises.

This poses a problem for the province's FDI attraction policy to continue attracting FDI to improve the proportion of this capital source in the total investment capital of the society to promote its role and efficiency. Actually, FDI enterprises are always an important source of supply and supplement of capital for development, meeting the demand of economic growth, contributing to economic restructuring and improving industrial production capacity, fostering the budget and increasing the general import-export turnover of the province. On the other hand, FDI capital also has a significant impact on technology innovation and transfer to strengthen facilities for industrialization and modernization. The presence of FDI enterprises also creates a strong competitive incentive for other businesses in the province to adapt to the market economy while sharpening the competitiveness for each of them<sup>7</sup>.

### ***3.3. The role of FDI enterprises in Phu Tho in terms of job creation***

Not only creating economic growth, increasing exports, thereby increasing foreign currency revenue, contributing to the provincial budget, FDI enterprises are often businesses with advanced production technology which helps create more jobs

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<sup>7</sup> Nguyen Thi Thu Hien, "State governance of FDI enterprises in Phu Tho province", M.A thesis (2018)

for many local workers. As a result, social security and life quality of local people in this province enjoy dramatic improvement.

It is noticeable that the prospect of attracting workers of FDI enterprises currently is higher than that of other types of business. In fact, labor in FDI enterprises has a tendency to increase while labor in the state and non-state sectors tends to decrease (see table 2).

**Table 2: Number of employees in FDI enterprises in Phu Tho during 2015-2017**

	Total		State		Non-state		FDI	
	Number (thousand people)	Structure (%)						
2015	743.8	100	62.7	8.43	636.6	85.59	44.5	5.98
2016	751.7	100	62.3	8.29	639.9	85.13	49.5	6.58
2017	760.8	100	62.3	8.19	647.4	85.09	51.1	6.72

*Source: Phu Tho Statistical Yearbook, p. 215,216*

Although Phu Tho has made endless efforts in attracting foreign investment, there are still many shortcomings such as: low level of technology, uneven investment proportion. On the other hand, due to the small number of projects, small scale, the labor force involved in this area is quite modest: in 2017, the labor force in FDI enterprises only accounted for 6.72% of the total company employees in Phu Tho, while this figure in the non-state sector was 85.09%. On the other hand, although the FDI sector has created remarkable efficiency, the survey on people working for FDI enterprises reveals such concerns as language conflicts, being disgraced or discriminated, unsecured working conditions, highly toxic working environment, and unsecured workers' meals. In addition, a number of workers also encountered difficulties in renting accommodation or long commuting. A corresponding proportion said that they had to suffer workload or overtime, which badly affected workers' health. Another common concern in FDI enterprises was believed to come from the harsh and unfair labor discipline between foreigners and Vietnamese people.

### ***3.4. Average monthly income of employees in FDI enterprises***

Not only contributing to the state budget and economic development of the province, FDI enterprises have also helped to solving employment for a large number of local workers, based on which social welfare and life quality for local people can be enhanced.

**Table 3: Average monthly income of employees in FDI enterprises in Phu Tho and Bac Ninh during 2015-2017**

*Unit: Thousand VND*

Type of enterprise	Province	2015	2016	2017
State-owned	<b>Phu Tho</b>	<b>7,273</b>	<b>6,871</b>	<b>7,319</b>
	Bac Ninh	7,629	8,249	8,903
Non state-owned	<b>Phu Tho</b>	<b>4,794</b>	<b>5,196</b>	<b>5,303</b>
	Bac Ninh	5,180	5,964	6,951
FDI	<b>Phu Tho</b>	<b>4,500</b>	<b>5,231</b>	<b>5,721</b>
	Bac Ninh	9,019	9,545	10,607

*Source: Phu Tho Statistical Yearbook, p. 267; Bac Ninh Statistical Yearbook, p. 193*

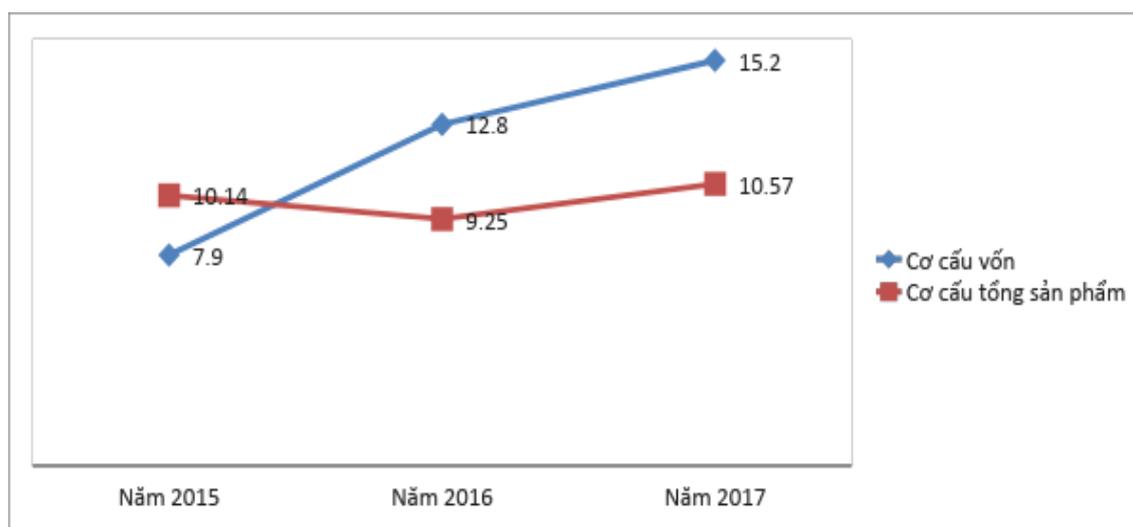
In the period of 2015-2017, the average monthly income of workers in FDI enterprises tended to increase. In 2017, this figure attained almost 5.8 million VND/person /month, an increase of 2.67 times compared to that in 2010. This shows the central role of FDI enterprises in job creation, income improvement and social issue resolution in the province.

However, when compared to the figure of Bac Ninh – one of the leading provinces in attracting FDI, it can be seen that the average income per capita per month of company employees in general and in FDI enterprises in particular in Phu Tho is fairly modest. In the FDI sector alone, the average income of workers in Phu Tho is only half that of Bac Ninh province. The same pattern also occurs at State enterprises.

This shows that the role of the business sector in creating jobs, increasing income and improving the living standard for employees in Bac Ninh province is evaluated quite well. This sets a task for Phu Tho provincial government in the coming time.

### ***3.5. Gross products of FDI enterprises***

In recent years, contrary to the incentives of the province for the FDI sector, the contribution of this sector to the total product of Phu Tho is pretty moderate.



**Figure 2: Structure of Capital and Gross Product produced by FDI area out of Phu Tho's economy during 2015-2017**

*Source: Phu Tho Statistical Yearbook, p. 127*

In the period of 2015-2017, the capital structure of the FDI sector continued to rise in the total investment capital, with 15.2% in 2017, an increase of 1.9 times compared to that in 2015; meanwhile, the total products of this sector accounted for only 10.57%. This shows that the FDI sector has not fully played its role towards the province's GDP.

#### **4. Measures to promote the role of FDI enterprises in Phu Tho**

##### **4.1. Prioritize clean FDI capital**

It can be seen that the biggest limitation in the policy of attracting FDI of Phu Tho province in the past is the lack of high quality human resources and skilled technical workers, thus, hindering the potentials of high-tech and large-scale projects. Consequently, the ability to contribute to the provincial budget or attract environmentally friendly projects are limited.

Therefore, in the coming time, the province should continue to improve the investment climate, diversify investment channels, strengthen support and solve difficulties and obstacles for enterprises to promote project deployment. The province should also focus on selecting clean FDI sources, prioritizing investors who use advanced and environmentally friendly technologies to limit the situation of becoming a technology waste dump as well as to reduce environmental pollution.

Favourable policies for enterprises producing high quality, large-scale and high-value products need to be issued to promote economic restructuring and foster the competitiveness of the economy in Phu Tho. Local authority should encourage

projects that have invested effectively to expand their scale, investment capacity in order to enhance industrial production volume and further product value of FDI enterprises in the total product.

#### ***4.2. Attract FDI towards developing high-tech agriculture as a strong sector of Phu Tho province***

Development of high-tech agricultural applications, heading for clean agriculture is one of the priority tasks and effective measures in restructuring the agricultural sector of the province. In order to improve the value, production efficiency and income for farmers, during the past years, Phu Tho has focused on leading and directing the implementation of many effective high-tech agricultural production models, opening a new direction for the province's economic development through an appealing strategy to attract the participation of the business sector in this field.

The province has released many preferential policies to invite investment into agriculture. From 2014 to 2017, this province enjoyed 71 investment projects in agriculture and rural areas, in which: 61 projects were domestically invested with a total capital of more than 3,400 billion VND; another 27 were high-tech agricultural investment projects with a total investment of over VND 2,100 billion. A number of large-scale enterprises and modern technology applications have been put into operation, making a sound contribution to the growth of the industry.

However, there was the absence of active participation of FDI enterprises - a sector with strength in capital scale, technology science and management skills, in attracting investment into clean agricultural development - an area that is considered to be the strength of Phu Tho. Therefore, in the coming time, the province need to have policies to promote, call and favor in order to attract the participation of FDI enterprises in the high-tech agricultural sector.

#### ***4.3 Strengthen supervision on FDI enterprises in terms of tax responsibilities while ensuring the legitimate rights and interests of workers***

In addition to the task of strengthening FDI attraction and facilitating the operation of FDI enterprises by constant care and support to solve difficulties, it is also essential for Phu Tho authority to fortify management, closely monitor and timely tackle in case of legal violations. The situation of "stagnant taxes" by FDI enterprises in Phu Tho province in the last years has negatively affected the budget collection, resulting in inequality and unfairness in the implementation of tax obligations. On the other hand, this practice also triggered immense impact on investment climate while causing dissent and resentment of the public.

Moreover, the province also needs to strengthen supervision of FDI enterprises in undertaking their obligations and responsibilities to employees, ensuring conditions of the working environment, improving the material and spiritual life of employees through policies on wages, food and accommodation.

## **5. Conclusion**

In recent years, the rapid increase in FDI into Phu Tho has contributed significantly to the local socio-economic development. This is the result gained after tremendous efforts to improve the investment and business climate, proactively promote investment in key markets of the province. However, besides the achievements, it is also necessary to objectively recognize the shortcomings and limitations of FDI enterprises in Phu Tho province during the past years.

The paper analyzes the current status of FDI enterprises in Phu Tho province as an important resource contributing to local economic development.

From the above approach, the paper proposes solutions to promote the role of FDI enterprises towards socio-economic development in Phu Tho province in the future. The solutions focus on: reinforcing the policy of selecting clean FDI sources and pushing FDI attraction to the strong sectors of the province. In addition, to improve the performance of this business sector, measures to strengthen supervision of FDI enterprises in the coming time will be also mentioned.

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# SUSTAINABLE ECONOMIC DEVELOPMENT IN HO CHI MINH CITY

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## **Abstract**

*Sustainable urban development is becoming the top concern of the nations in making and implementing development policy systems. Sustainable urban development is a development process harmonious, effective three pillars: economic development - social inclusion - environmental management effectively. Vietnam is a rapidly urbanizing country. This process makes Vietnam's cities facing many major problems and challenges, especially sustainable economic development.*

*Ho Chi Minh City is Vietnam's largest city. This is a dynamic city with the fastest socio-economic development rate in the whole country. The development of Ho Chi Minh City plays an important role in the overall development of the whole country. However, according to the assessments of the authorities and experts, Ho Chi Minh City is growing slowly and facing many big problems. Based on the analysis of the potentials and advantages of this City as well as the difficulties and challenges of the new development context, this paper recommends groups of solutions to ensure for sustainable economic development in Ho Chi Minh City in the next decades.*

**Keywords:** *Sustainable urban development, sustainable economic development, sustainable economic development in Ho Chi Minh city.*

## **1. Sustainable urban development and sustainable economic development**

Sustainable development is a term using popular in social life. Sustainable development is “a process for improving the range of opportunities that will enable individual humans and communities to achieve their aspirations and full potential over a sustained period of time while maintaining the resilience of economic, social, and environmental systems” (Mohan Munasinghe, 2004).

According to The World Bank, “sustainable development recognizes that growth must be both inclusive and environmentally sound to reduce poverty and build shared prosperity for today’s population and to continue to meet the needs of future generations. It is efficient with resources and carefully planned to deliver both immediate and long-term benefits. The three pillars of sustainable development – economic growth, environmental stewardship, and social inclusion – carry across all

sectors of development, from cities facing rapid urbanization to agriculture, infrastructure, energy development and use, water availability, and transportation” (The World Bank, 2015).

In state management, sustainable development has become the goal and requirement in the process of making and implementing socio-economic development policies. Sustainable development is defined as a balanced and harmonious development process between socio-economic and environmental aspects in the present without harming, negatively impacting the development in the future. In the present, sustainable urban development is becoming a major concern in the developmental process of each nation. Sustainable urban development is an attempt to develop the city by enhancing the economic opportunity and community wellbeing while protecting and restoring the natural environment upon which people and economies depend (Kotharkar and Bahadure, 2010).

Vietnam is a developing country so that the process of urbanization is being implemented so fast. In that process, posing many big problems and challenges, especially ensuring the balance and harmony between sustainable economic development with social inclusion and environmental management effectively. The most important factor in the sustainable urban developmental process is sustainable economic development. This fact is widespread in Vietnam's cities, especially in big cities like Ho Chi Minh City.

Sustainable economic development is therefore directly concerned with increasing the material standard of living of the poor at the "grassroots" level, which can be quantitatively measured in terms of increased food, real income, educational services, health-care, sanitation and water supply, emergency stocks of food and cash, etc. and only indirectly concerned with economic growth at the aggregate, commonly national, level. In general terms, the primary objective is reducing the absolute poverty of the world's through providing lasting and secure livelihoods that minimize resource depletion, environmental degradation, cultural disruption, and social instability (Edward B. Barbier, 1987).

## **2. The economy in Ho Chi Minh city**

### ***2.1. Some results***

Ho Chi Minh City is the largest city in Vietnam, bordering with Binh Duong province in the North, with Tay Ninh province in the North, with Dong Nai and Northeast in the North, with Ba Ria - Vung Tau in the South East and in the South, with Long An and Tien Giang in the Southwest. This city has an area of 2,061.4 km<sup>2</sup> and a population of 8,297,500 people (GSO., 2016). Ho Chi Minh City is a major center for economy, culture, education - training, science and technology. The

development of Ho Chi Minh City has always played an important role in the overall development of Vietnam.

Ho Chi Minh City always maintains a high economic growth rate compared to the whole national average (2013: 7.19%; 2014: 7.49%; 2015: 7.72%; 2016: 8.05 %; 2017: 8.25%; 2018: 8.3%). In the GRDP increase rate of 8.3% in 2018, the increase structure of the regions was: the service sector increased by 8.4%, the industry and construction sector increased by 8.1%, the agricultural sector increased by 6.2%, product tax increased by 8.3%. In the first quarter of 2019, the GRDP of Ho Chi Minh City continued to increase 7.64%.

Sectors structure in Ho Chi Minh City's GRDP in the first quarter of 2019: service sector accounts for 63.1%, industry and construction sector accounts for 21.5%, agriculture sector accounts for a proportion 0.6%, product tax minus product subsidies accounted for 14.7%. Among them, 09 major service industries (trade, finance - banking - insurance, tourism, information - communication, transport - port - warehousing, science - technology, real estate business) production, education - training, health) accounted for 57.7% of the total GRDP; 03 sectors (real estate, trade - port - warehousing) accounted for 34.9% of the total GRDP.

In 2018, some sectors with a high increase over the same period: trade increased by 9.5% (same period increased by 9.4%), transport - port - warehousing increased by 8.5% (same period increased 6.8%), tourism increased 9.2% (same period increased 7.9%), real estate business increased 6.6% (the same period increased 4.8%), science and technology increased 7, 7% (same period increased 7.1%); health rose 7.6% (same period increased 7.4%); education - training increased by 9.21% (same period increased by 9.14%).

In the first quarter of 2019, Ho Chi Minh City had 8,639 newly licensed enterprises with a total registered capital of 147,114 billion VND, increasing 2.4% of the number of enterprises and 46% of the registered capital compared to the same (2018 there were 44,126 licensed enterprises). As of April 2019, Ho Chi Minh City has 380,064 enterprises operating, accounting for nearly 60% of the total number of enterprises operating whole the country. In which, 582 enterprises has registered capital of over 1,000 billion VND (accounting for 0.15%); 7,694 enterprises have registered capital of over 100 billion VND (accounting for 2.02%).

Ho Chi Minh City has 14 industrial parks (3,367 ha), 03 export processing zones (423 ha area) with 1,392 investment projects with a total registered investment capital of 9.19 billion USD; 06 industrial clusters (Le Minh Xuan, Nhi Xuan, Lang Le - Bau Co, Quy Duc, Bau Tran, Duong Cong Khi) with an area of 331.43 ha.

Ho Chi Minh City is also a locality that attracts a lot foreign investment capital. In 2018, Ho Chi Minh City attracted 7.39 billion USD (increasing 11.8% over the same period). In which, the countries with large direct investment are: South Korea accounted for 26.3%; Singapore accounted for 22.2%, Japan accounted for 12.5%.

Ho Chi Minh City's state budget revenue always accounts for the largest proportion in the national state budget revenue. In 2018, Ho Chi Minh City's state budget revenue is of 378,543 billion VND, reaching 100.47% of the estimate, increasing 8.65% over the same period. Particularly in the first quarter of 2019, Ho Chi Minh City collected 98,365 billion VND, achieving 24.65% of the revenue estimate in 2019, increasing 7.18% compared to the first quarter of 2018.

Ho Chi Minh City has always been rated as the most dynamic city of Vietnam. JLL Regional Headquarters ranked Ho Chi Minh City as the second dynamic city in the world in 2017 in its research of City Growth Index 2017: *Which city is changing the fastest ?*.

## ***2.2. Some difficulties and challenges in developing the economy in Ho Chi Minh City***

Ho Chi Minh City's economy is also facing many difficulties and challenges that threaten sustainable development. Some basic difficulties and challenges can be mentioned:

*Firstly*, the economic growth quality of Ho Chi Minh City is generally not sustainable, the service sector and some economic sectors are growing unstable. The growth of important economic sectors of the city is unstable, tends to decrease: the service sector increases by 12.5% in the period of 2006 - 2012, 11.2% in the period of 2011 - 2015, 8.4 % in 2018, 7.7% in the first quarter of 2019; industry and construction sector increased by 10.3% in the period of 2006 - 2012, 7.6% in the period of 2011 - 2015, 8.1% in 2018, 7.41% in the first quarter of 2019. The first quarter of 2019 and 6/9 major service industries of Ho Chi Minh City have lower growth rates over the same period (trade, transport - warehousing, tourism, finance - banking - insurance, real estate, health).

*Secondly*, although the internal structure of economic sectors has changed in the right direction, the value-added content is still low, the rate of machining production is still high and the competitiveness is still low. This fact is manifest in the following aspects: (i) agricultural production depends heavily on cultivated land; (ii) industrial production depends on imports, technology transfer, the rate of localization products low; (iii) the growth value of the industry is mainly based on increasing capital and labor, not moving on labor productivity and technology, intellectuals.

*Thirdly*, the export of Ho Chi Minh City tends to decrease gradually in proportion. Traditional products tend to export slowly, competitiveness is low. The export market of the Ho Chi Minh City is mainly concentrated in some countries.

*Fourthly*, Ho Chi Minh City has many "bottlenecks" that hinder economic development such as: (i) infrastructure in general and transportation in particular are not synchronized, have not met requirements of socio-economic development; (ii) flooded during the rainy season combined with tides; (iii) increasing the mechanical population creates big pressure in managing and developing sustainable.

The difficulties and challenges in sustainable development Ho Chi Minh City are also called by the research projects as problems of a "super city" area such as the rapid increase of population, overloaded infrastructure system, pollution environment... impact on the sustainable economic development in Ho Chi Minh City. JLL Regional Headquarters also shows the difficulties and obstacles of Ho Chi Minh City: "The problem of traffic congestion is still a major obstacle to the quality of life and labor productivity, these are essential elements to be resolved to ensure growth paced in the future "; "To ensure long-term success, these economies need to adapt quickly to innovation and infrastructure improvements" (JLL Regional Headquarters, 2017).

On the state management side, the Prime Minister Nguyen Xuan Phuc also stated: "The socio-economic situation of Ho Chi Minh City still exists many problems, weakness and continues to face difficulties and challenges. If have not new direction, good ways, innovation, facilitating for Ho Chi Minh City developing, this City will stop" (Duc Tuan, 2017).

### **3. Groups of solutions for sustainable economic development in Ho Chi Minh City in the following decades**

#### ***3.1. Group of solutions to ensure sustainable economic growth of Ho Chi Minh City***

*First, the City's authorities create an environment for sustainable development*

First of all, Ho Chi Minh City's authorities should focus on completing and proposing competent agencies to complete the institutional and policy system to create a legal environment for sustainable development. Ho Chi Minh City should propose to the National Assembly, the Standing Committee of the National Assembly, the Government, the Prime Minister and the ministries and ministerial-level agencies to continue improving the institutional and policies system related to the Ho Chi Minh City according to more decentralized direction to the City authorities. At the same time, continue to improve institutions and policies within the

scope of competence, especially concretize the National Assembly Resolution No. 54/2017/QH14 of November 24, 2017 on piloting special mechanisms and policies Ho Chi Minh City's development.

Besides, Ho Chi Minh City's authorities should pay attention to creating development space by reviewing development plans towards synchronous, scientific, predictive and high feasibility. Planning the spatial of Ho Chi Minh City should aim to harmonize between modernity of a large city with the preservation, unity and promotion of cultural values and peoples living in the City. Focus on developing synchronous and modern the infrastructure system to meet the requirements of a future megacity combined with effective environmental protection. In particular, interested in completing the planning for developing distribution, wholesale and retail systems based on the application of technology platforms and operating models of shared economy. Building warehouse system, transportation yards and applying technology to reduce logistic costs for production and business activities.

In addition, Ho Chi Minh City authorities need to make strategies and synchronous solutions to innovate economic areas in the direction of increasing technology and knowledge in the products. Establish a mechanism to attract "new generation" investment flows into Ho Chi Minh City, with a focus on attracting investment in production and business flows based on applying technology and knowledge. There are effective solutions for relocating enterprises that are using a lot of labors in the urban to suburban areas. Those solutions will help Ho Chi Minh City have land to attract "new generation" enterprises. At the same time, there are reasonable mechanisms and policies to mobilize resources for developing in Ho Chi Minh City.

*Secondly, sustainable economic growth based on increasing total factor productivity*

One of the solutions which Ho Chi Minh City's authorities to consider is increasing total factor productivity. First of all, Ho Chi Minh City's authorities need to pay attention to improving the quality of human resources in terms of professional knowledge, social knowledge, ability to acquire and apply scientific and technological advances ... On the ground the quality of human resources will increase the total factor productivity. Besides, orienting investment activities focus on the fields of advanced science and applied technology, artificial intelligence to improve social labor productivity. Promote researching, innovating and applying of advanced scientific achievements into management, production and business activities. Continuing to pay attention and improve the operational efficiency of the creative entrepreneurial ecosystems along; accompanying, supporting with the enterprises.

*Thirdly, paying attention to developing tourism becoming an important economic sector*

Continuing to improve the mechanisms and policies along with a system of solutions to build the tourism sector into one of the important economic sectors of Ho Chi Minh City. Promoting the role of stakeholders; researching and studying the experiences of developing tourism in countries around the world. First of all, the City's authorities study and improve the policies to exploit the potentials and advantages in developing the tourism sector. In particular, paying special attention to combining tourism exploitation with environmental protection, protection of Can Gio marine ecosystem.

Besides, well implementing the planning of tourism activities in the urban. Propagate and disseminate to the people to agree and act with the City's authorities in developing tourism. Innovating tourism promotion activities on the basis of exploiting information and communication technologies.

*Fourth, there is an effective strategy for developing artificial intelligence*

Ho Chi Minh City's authorities should pay attention and issue policies on researching, developing and applying artificial intelligence. Perceiving correctly the role of artificial intelligence as well as opportunities, challenges and risks of Ho Chi Minh City in the developing artificial intelligence by well organizing researching, forecasting and consulting activities on artificial intelligence. Special attention is consulting from Vietnamese experts working in the field of artificial intelligence in the world; international experts; universities, research institutes, scientists, independent consulting organizations... Promoting the role of non-state organizations participating in searching, forecasting and developing activities about artificial intelligence.

In addition, Ho Chi Minh City's authorities should determine the vision and objectives of developing artificial intelligence on the basis of scientific arguments. The goal of developing artificial intelligence needs to be defined at two levels: the common goal (the expected results in the researching, developing and applying the artificial intelligence for the socio-economic sectors in generalization level); Specific goals (expected results in researching, developing and applying the artificial intelligence in sectors and fields; regions).

Ho Chi Minh City's authority also need to identify priority areas in artificial intelligence development. However, in determining the objectives in developing artificial intelligence, should be based on science and consistency in implementation. At the same time, the City's authorities need to organize effective mobilization to create resources for researching, developing and applying in artificial intelligence. The City's authorities should pay attention to investment priorities from the state

budget to focus investment in areas that have the potential to apply high artificial intelligence in the future as well as important areas related to national security room. At the same time, orienting and leading technology corporations, startups invest in researching, developing and applying in artificial intelligence. Completing the mechanism to implement public-private partnerships in research, development and application of artificial intelligence. Encouraging and creating conditions for non-state actors to participate in researching, developing and applying in artificial intelligence in socio-economic fields.

At the same time, for developing artificial intelligence, the City's authorities should pay attention to developing human resources on artificial intelligence. The City's authorities should have a mechanism to encourage capable students and students to participate in researching, developing and applying in artificial intelligence. There is good remuneration for experts and researchers in this field. Selecting and investing in some centers, universities and research institutes to become centers for researching, developing and applying in artificial intelligence. Attracting high quality human resources on artificial intelligence to work in Ho Chi Minh City. In addition, the City's authorities should implement a flexible working mechanism for the world's leading experts (especially Vietnamese experts working abroad) at artificial intelligence centers in Vietnam. The City's authorities should study Finland's experiences in teaching about artificial intelligence for people.

### ***3.2. Group of solutions to exploit effectively the potentials, advantages and resources for developing economy***

*Firstly, identifying the potentials and advantages of economic development of Ho Chi Minh City*

Huynh The Du and his colleagues have made the comment: "One of the fundamental causes making the gap between Ho Chi Minh City with other cities in the region is still large because Ho Chi Minh City still cannot promote well its advantages and exploiting its potentials. This also implies that the growth and development space for Ho Chi Minh City is still very high and the ability to catch up with other regional cities is feasible" (Du, Huynh The at al, 2016). The Political Bureau's conclusion No. 21-KL/TW also affirmed: "The implementation of the Resolution (Politburo Resolution No. 16-NQ/TW on direction and task of developing Ho Chi Minh City by 2020) the City Party Committee and City authorities are still slow, not aggressive enough, have not created a breakthrough to promote the potentials and advantages for the development of Ho Chi Minh City" (Central Executive Committee, 2017).

For sustainable economic development, Ho Chi Minh City's authorities should assess scientifically, comprehensively the development process and identify the potentials and advantages hav not exploited effectively in the past to developing economy. Since then, determining the City's economic development strategy in the coming decades on the basis exploiting effectively its potentials and advantages. There are three basic potentials and advantages of Ho Chi Minh City need to pay attention and exploit effectively in the development process:

*Favorable position in geography, economy - society*

With the position as an economic, cultural, educational, scientific and technological center of the whole country; Being an international exchange and integration center, Ho Chi Minh City has many development advantages, being the driving force for development of the southern key economic region and the whole country. At the same time, with its geographical position, Ho Chi Minh City can be a connecting center, an economic and financial center of the region and the world. Particularly favorable geographical conditions of Ho Chi Minh City can be considered as a gap that has not been exploited effectively to serve the development process of the City in recent years.

*Human resources of large scale, high quality and constantly being supplemented*

Ho Chi Minh City has the largest-scale labor force in the country, with high quality, constantly being supplemented by migrant workers from other localities, from the source of graduates the universities. The people of Ho Chi Minh City who have a market-oriented economic mindset are an advantage of the City in socio-economic construction and development. Besides, Ho Chi Minh City has a team of experts, highly qualified human resources. This is a great resource to help build Ho Chi Minh City into a creative, smart and modern city.

*The largest financial center in the country*

Every year, Ho Chi Minh City receives a large amount of remittances, more than half of the country's remittances. Along with that are credit institutions in the city with capital mobilization growth rate (approximately 30% nationwide) and stable credit balance, well serving the needs of production and business activities of enterprises and people. This is a great resource for Ho Chi Minh City to mobilize resources for socio-economic development as well as for developing the private sector.

*Secondly, managing effectively economic development resources*

The resources for sustainable economic development in Ho Chi Minh City is a difficult problem in the next decades. For solving this problem, the City's authority should plan effectively and manage natural resources such as land, water and air...

within the City along with promoting links with localities in the region to managing and exploiting effectively the common resources.

Based on the planning of Ho Chi Minh City area approved by the Prime Minister, Ho Chi Minh City needs to coordinate with authorities in the provinces in the region to unify the sub-regions in a scientific way to maximizing the competitive advantages and resources of each locality to serve the development objectives of each locality and the overall development objectives of the whole Ho Chi Minh City region.

*Thirdly, interested in developing the City's human resources*

Human resources are the most important resource in development. To ensure sustainable economic development, the City's authorities need to have a strategy to develop human resources so that every citizen of the City is a "smart citizen", responsible for the overall development of the City. For achieving this goal, Ho Chi Minh City needs to build a model of future City citizens, more interested in education to train new citizen classes to meet the requirements sustainable development the City in the future.

***3.3. Group of solutions for building and improving the governance capacity of the City's authorities meets the development requirements***

*First, building the organizational structure and staffs of the City's authorities*

Interest in building authorities have the capacity to meet the requirement of managing and developing the City in the new context. Ho Chi Minh City's authorities should study and continue to improve and propose to the Central Government the model of City's authorities. It is possible that the City's authorities should apply for piloting in the direction of City's authorities at two levels: City level and ward level. In addition, a number of City-level agencies were established under the method of decentralization to coordinate the implementation of tasks in the areas of the City. This organizational model is conforming to the trend of transforming state governance in general and fitting of the context of urban development space together with the rapid development of information technology is increasingly supporting effectively the governance of state agencies. At the same time, it is also suitable for the urban environment - where the educational level is getting higher and higher. This model also meets the requirements of solving socio-economic problems quickly and effectively.

Recruiting and training the cadres of authorities at all levels of the City become "smart officials" to operate "smart cities" and "creative cities". Attracting qualified cadres in the "elite" group of social human resources to work at agencies under the City's authorities, Ho Chi Minh City's authorities should focus on training, fostering

updates of new and scientific knowledge, conforming to practical requirements of each group of cadres. The City's authorities should pay attention training and retraining of groups of management skills, solving new problems, globalization issues ... for staff at all levels of authorities. In particular, the City's authorities should pay attention training and retraining making and implementing the public policy for leading cadres and civil servants at all levels, especially at the City level.

Along with the remuneration regime for the staffs at all levels, Ho Chi Minh City's authorities should improve the mechanism in evaluation and appointing the cadres more scientific and effective. Detecting, training, retraining, planning, leadership training, management training for the leadership team, management levels. Completing the mechanism of allocation of powers commensurate with the tasks associated with specific and clear accountability of each position in the system.

*Second, promoting the role of stakeholders in developing the City*

The private sector of Ho Chi Minh City has great potential. On the basis of general institutions and policies of the State, the City's authorities should facilitate and support with specific and practical mechanisms, policies for the private economic sector developing and becoming an important driving force, becoming partners with the authorities at all levels in developing the City and the country.

In addition, Ho Chi Minh City's authorities should also improve the mechanism for non-state sectors to participate in creating and developing sustainable economy of the City. With the experience and dynamism of the City's authorities in the past time, the growth of the non-state sector, Ho Chi Minh City will be favorable and successful if promoting the role of stakeholders in the sustainable economic development.

*Third, promoting administrative reform*

Continue to review, build and complete the system of mechanisms, policies and administrative procedures. Promote the application of information technology in the management and settlement of administrative procedures to serve the people and serve enterprises. Publicizing the state management activities. Continue to improve and accelerate the implementation of the Ho Chi Minh City Construction Project to become a smart city. In particular, pay special attention to building and managing effectively of smart society.

***3.4. Group of solutions to address the City's "bottlenecks"***

In order to sustainable economic development in Ho Chi Minh city, the City's authorities cannot fail to address the "bottlenecks" in development. There can be three major "bottlenecks" of Ho Chi Minh City: (i) Overloading traffic system causes more serious traffic congestion, which greatly affects people's lives and increases spending

cost, time-consuming business; (ii) The flooding in the rainy season with the influence of high tide has gradually become permanent and the level of impact on the socio-economic life has become more serious, contributing to the increase in traffic congestion ; (ii) The security and order situation in the city has also become a big problem, negatively affecting the socio-economic development, affecting the prestige of the City and being a major agent to prevent become a tourist destination to become an important economic sector of the City.

In the near future, Ho Chi Minh City needs to take advantage of specific mechanisms and mobilize resources to solve these "bottlenecks" as efficiently as possible. For traffic congestion, Ho Chi Minh City should continue to plan the traffic system in a scientific manner, in accordance with the reality on the basis of synchronous development: road traffic, railway traffic, and delivery waterway traffic, air traffic combined with re-planning some residential areas, there is a feasible solution to curb mechanical population growth. In planning and developing the transport system, the City's authorities should study scientifically and carefully in developing underground space to ensure safety as well as sustainability in developing the City. For flooding, in addition to the use of effective flood control methods, the City should calculate solutions to prevent negative impacts of tides such as dyke construction or zoning impacts...

#### **4. Conclusion**

Ho Chi Minh City has always been identified as a dynamic, creative and fast-growing city. The socio-economic development of Ho Chi Minh City contributes greatly to the overall development of the country. However, the general development and economic development of Ho Chi Minh City are facing many difficulties and challenges along with many big "problems" to be addressed. In order to sustainable economic development in Ho Chi Minh city, the City's authorities should implement synchronously, effectively many groups of solutions to exploit the City's potential and advantages as well as to enlist opportunities in the new development context, including the above solution groups.

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**PART 3: HUMANITIES  
AND SOCIAL SCIENCE**



# IMPACTS OF ORGANIZATIONAL CULTURE ON EMPLOYEE ENGAGEMENT WITH ORGANIZATIONS IN VIETNAMESE ENTERPRISES

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## **Abstract**

*Using qualitative and quantitative methods, this study investigates impacts of organizational culture on employee engagement in Vietnamese enterprises. The research model is based on Recardo & Jolly (1997) and Zain (2009) by adding an aspect of "leadership behavior" as one component of organizational culture. With the survey sample of 267 employees working in different types of Vietnamese enterprises, the empirical results show that nine aspects of organizational culture have strongly positive impacts on employee engagement; the aspect of "leadership behavior" has the strongest impacts and the "reward and recognition" has smallest impacts on engagement of employees. Based on the results, some recommendations should be proposed to improve the employee engagement with the organization in the enterprises in Vietnam.*

**Keywords:** *Organizational culture; employee engagement, enterprises*

## **1. Introduction**

The Industrial Revolution 4.0 is now pervading in many fields of study. Despite the outstanding development in technology with Artificial Intelligence, Internet of Things, robotics, the importance of human resources has been affirmed. Human resources contain more special elements than machines. When comfortable, people can work more efficiently than usual, and when not finding comfort, the workers do not achieve the usual efficiency. In the economy with fierce competition, people play a key role, and development of human resource strongly associated with the organization is an important goal. There are many ways to enhance employee engagement with the organization, of which organizational culture is considered a viral and impressive tool. The influence of organizational culture on perceptions, thoughts, feelings, and behaviors

of organizational members is mentioned in Chow et al. (2001), and it has a direct impact on employee engagement.

The organizational culture in Vietnamese enterprises manifested in the cultural aspects has certain differences, so the model of inheritance and supplementation will be tested as an important basis to draw on the aspects of organizational culture that influences employee engagement. Some practical studies have suggested that strong organizational culture will be the foundation for improving the position, brand image, market share of the organization and a factor to attract employees passionately to the organization.

Using qualitative and quantitative methods with a survey sample of 267 employees working in different types of enterprises, this study investigates the impacts of organizational culture on employee engagement with organization in enterprises. By adding aspect of "leadership behavior" as one component of organizational culture of Vietnamese enterprises, the empirical results show that nine aspects of organizational culture have a positive impact on employee engagement; the aspect of leadership behavior has the strongest impacts and reward and recognition has smallest impacts on engagement of employees. The results shed light on understanding organizational culture in enterprises and improving engagement of employees to the firms in Vietnam.

## **2. Literature review**

### ***Organizational culture***

After three decades, the definition of organizational culture has been increasingly developed, and a large number of studies on organizational culture have been conducted (Barney, 1986; Schein, 2004). Although they are not clearly-cut identified, those studies still demonstrate two different directions. The first one is to approach organizational culture from the perspective of business executives (micro-approach), focusing on exploring the management nature of cultural factors in business management (Deal and Kennedy, 1982; Martin, 2003). The other approaches from the perspective of the cultural factors' impacts on business management (macro approach), focusing on the outcome of cultural factors on enterprises, especially for businesses with an organized or multicultural environment (Denison, 1990; Recardo and Jolly, 1997; Zain, 2009).

Organizational culture includes a system of key values, beliefs, awareness, traditional habits and thinking methods, which are supported by all members, and how these interpretations influence their behaviors. Measurement of organizational culture has been done by many researchers, but two most popular measures are developed by Recardo & Jolly (1997) and Zain (2009). According to Recardo & Jolly

(1997), eight dimensions of organizational culture is developed and tested, including: (i) Organizational communication, (ii) Training and developing, (iii) Reward & recognition; (iv) Teamwork; (v) The effect of making decision; (vi) Innovation and risk taking; (vii) Fairness in governance policies, (viii) Orientation on future plans. While Zain (2009) mentions organizational culture measurement as 4 aspects: Teamwork, Training and development, Organizational communication, and Reward and recognition.

### ***Employee Engagement***

Employee engagement has become a crucial element in the research of organizations, managers and in the knowledge of labors' behavior at work. Mowday, Steers & Porter (1979) argued that engagement, which referred to a positive relationship with the organization that made them willing to invest their efforts to the success and development of the organization, was a strong commitment of employees to the organization and the active involvement of employees in a given organization. According to Meyer & Allen (1991), organizational engagement is a psychological state that expresses employees' relationships with the organization, closely related to the decision to remain as a member of the organization. Legge (1995) argued that employee engagement, which was maintained by the imposition control system that led to more responsive and proactive feedback behaviors, was completely different from patiently submissive behavior that was characterized by traditional human resource management. Mathis and Jackson (2000) argued that employee engagement with organizations was the level that employees believe and accept organizational goals and desire to stay. Jex (2002) identified that engagement represented both "emotions and behavioral trends" that toward organization.

With variety of approaches and perspectives in research, researchers do not have a consistent concept of employee engagement with the organization. From the author's observation, "employee engagement is a psychological state of the individual, which creates emotions that make individuals bind themselves to the organization and endeavor to perform a task, or that individual's actions to the organization because of personal vibrations, responsibilities or needs".

There are many different studies on measurement of employee engagement. Angle and Perry (1981) proposed two components of engagement: engagement of values and engagement for maintain. Mowday, Porter & Steer (1979), proposed three components: coherence or consistency, loyalty, commitment. O'reilly & Chapman (1986) proposed three components of psychological commitment to an organization:

compliance, identification, and internalization. Penley & Gould (1988) proposed three components of engagement: morality, calculation, indifference (Alimentative). Meyer and Allen (1991) proposed three components: affective, continuance, and normative commitment.

### ***The impact of organizational culture on employee engagement with the organization***

Many previous studies have shown that organizations with strong culture have the opportunity to attract people with the same vision and belief, accept challenges and contribute for long-term goals. A positive organizational culture will increase the employee engagement, thereby strengthen the operational efficiency of the organization and creating the competitive advantage of the organization.

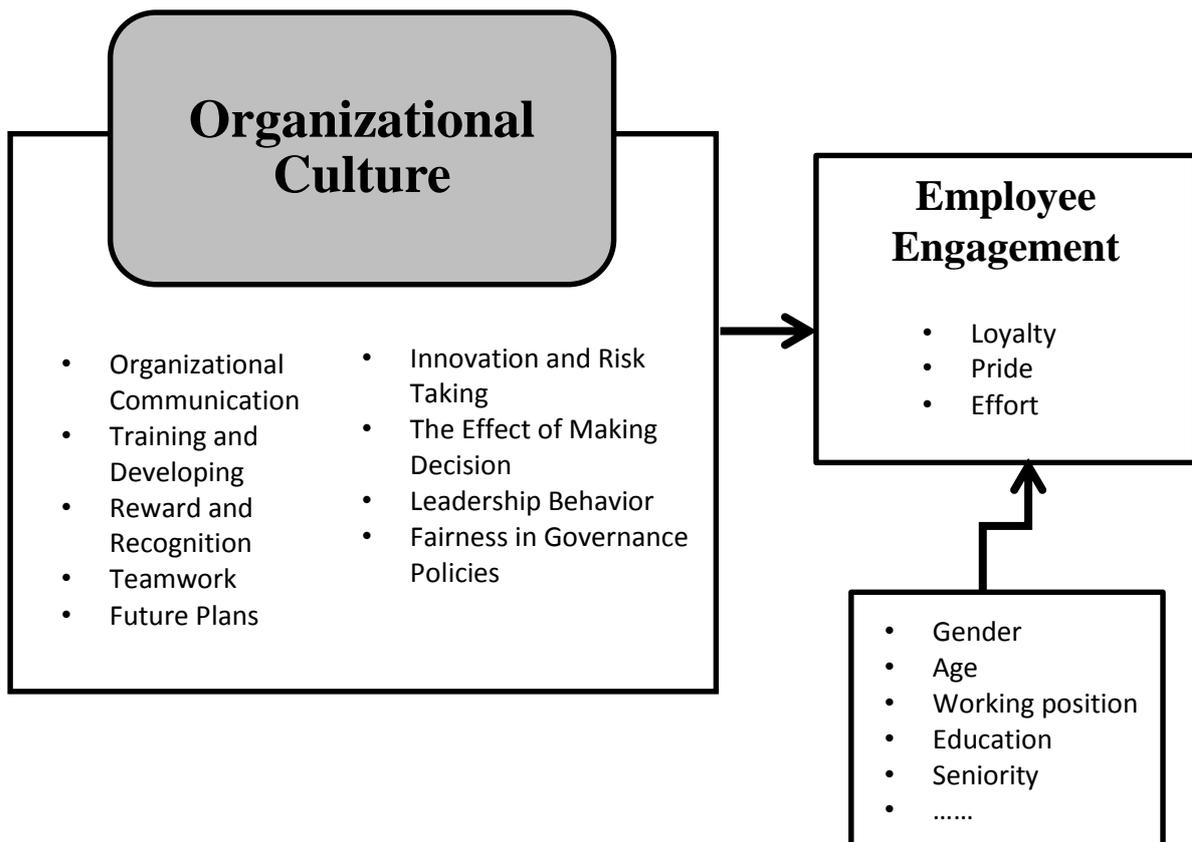
According to Lok and Crawford (1999), organizational culture performs a virtual function as creating connection and enhancing efficiency. Deal and Kennedy (1982) argued that organizational culture influenced employee engagement in the organization and the strength of connection with the organization that correlated with the power of organizational culture. Tran Huu Ai, Nguyen Minh Duc (2014) measured the impact of organizational cultural factors on employee engagement including (i) teamwork, (ii) organizational communication, (iii) training and development, and (iv) reward and recognition, (v) fairness and consistency in governance policies. The Naidoo Study (2014) argued that there were 7 elements of organizational culture that had a strong effect on employee engagement: leadership styles, needs and goals of employees; means to achieve goals; regulatory process; vision and mission; towards the outside environment; and diversification strategy.

Experimental results influenced the organizational culture on employee engagement are different. Therefore, it is necessary to find out the law, which the impact of organizational culture on employee engagement is essential for Vietnamese enterprises.

## **3. Analytical framework and research methods**

### ***Analytical framework***

In the literature review on impacts of organizational culture on employee engagement with the organization, eight cultural aspects appropriated for Vietnamese businesses are selected. In addition, this study has developed a component of “Leadership Behavior”. This is the important component of organizational culture in Vietnamese enterprises. The scales are inherited and adjusted to fit Vietnamese enterprises.



**Figure 1: Research framework**

The research framework is shown as Figure 1, in details, organizational culture consists of 9 aspects, in which 8 variables that represent organizational cultural aspects inherited from Recardo & Jolly (1997) and a new independent variable that measures leadership behavior. The employee engagement with the organization consists of three components as Loyalty, Pride, and Effort, developed by Mowday et al. (1979). In addition, control variables for individuals and businesses include personal characteristics such as: gender, experience, working position,... and control variables for businesses including type, regulation tissues and occupations,... are also specified in the estimated models.

Each organizational culture aspect is measured by questions and statement. The measurement of organizational culture variables is based on studies of Zeffane (1995); Recardo & Jolly (1997); Bass (1997); Nijhof (1998); Ooi & Arumugam (2006); Zain (2009); Huma (2014). The measurement of employee engagement with an organization is based on the famous measurement of Mowday, Steers, & Porter (1979); Tran Kim Dung (2006).

According to the theory and analytical framework used to measure the impacts of organizational culture on employee engagement with the organization, the estimation model can be described as follows:

$$Y = \alpha + \beta X + \gamma Z + \epsilon \quad (1)$$

in which, Y is the employee engagement measured through three aspects (i) Loyalty, (ii) Pride, (iii) Effort. X is a vector consisting of 9 aspects of organizational culture. Z is a vector representing the characteristics of individual employees and characteristics of enterprises; and  $\epsilon$  is random error in the model.

### ***Research methods***

#### ***Survey method***

The study was conducted a survey of workers in Vietnamese enterprises. The sample was selected based on the multi-stage random sampling method. First, the author selects the provinces to participate in the survey. Second, the author chooses the enterprise then sent an email to the business and asked 3 to 5 people with different positions (senior managers, middle managers and employees) in each enterprise to respond to pre-designed questionnaire on GoogleDoc. The number of votes used in the study was 267 votes from 126 enterprises (with a response rate of 12.6%). The survey results showed that the number of survey respondents was mainly women, accounting for 73%, Kinh people accounted for 98.1% with the average age of respondents is 29 years old. Most respondents had university and postgraduate degrees, which accounted for 79% of respondents; 71% of respondents were employees, while senior managers accounted for 3.4% of respondents. Participants who answered mainly working in enterprises less than 5 years accounted for 76.7% of the total number of respondents. For enterprises, small-scale enterprises accounted for 40.8%, large-scale enterprises accounted for 38.6% in the survey sample. Enterprises shared in a relatively equal proportion in the fields of manufacturing, trade and services, of which production accounted for 36.3%, trade accounted for 24.7%, services accounted for 39%. The participating enterprises were mainly domestic private enterprises (56.6%), 12.4% were state-owned enterprises, 15.4% were foreign-invested enterprises and other enterprises accounted for 15.7%. Most of them were enterprises with operating time of over 10 years (accounting for 56.2%).

The questionnaire is designed into three parts. The first part asks about the characteristics of respondents and businesses where respondents work. The second part mentions organizational culture, which includes 9 aspects of organizational culture. The third part deals with the association with the three built-in factors.

### *Scale reliability test*

The test results showed that the criteria fully the requirements of the reliability of the scale. Cronbach's Alpha shows that all observed variables had the average interitem covariance greater than 0.3 and Cronbach's Alpha coefficient greater than 0.8. The results of scale reliability tests showed that all measures and observed variables are satisfactory (Table 1).

**Table 1: Results of reliable assessments of the measurement with Cronbach's Alpha coefficient**

<b>Factor</b>	<b>Indicator Number</b>	<b>Average interitem covariance</b>	<b>Cronbach's Alpha</b>
Organizational communication	5	0.398385	0.8694
Training and development	5	0.3922925	0.8814
Reward and recognition	5	0.474498	0.8857
Making decision	4	0.4223949	0.8787
Orientation on future plans	5	0.3782983	0.8758
Fairness in governance policies	5	0.5250458	0.9224
Innovation and risk taking	5	0.3857622	0.8905
Orientation on teamwork	6	0.3297419	0.8419
Leadership behavior	7	0.4448736	0.8758
Loyalty	7	0.3162876	0.8214
Pride	5	0.3922193	0.8833
Effort	5	0.3649883	0.8738

*Source: Results extracted from SPSS*

The results of the EFA analysis show that engagement measures ensure reliability and validity. Of the 17 original observed variables, there are 15 satisfactory observations of authenticity used to measure employee engagement with organizations within the enterprise.

### *Verifying multicollinearity*

The study carried out multicollinearity test to check the linear relationship among independent variables, using the Pearson correlation coefficient matrix. The results show that there is no multicollinearity among the independent variables used in the model that estimates the impact of organizational culture on employee engagement with the organization.

## **5. Empirical estimation results**

The study is conducted an estimation of three models. Model 1 is a full model consisting of nine aspects of organizational culture and control variables affecting engagement. Meanwhile, model 2 only includes variables that reflect organizational

culture without control variables, and model 3 includes a variable that reflects general organizational culture and control variables. Experimental estimation results are presented in Table 3.

**Table 3: Results of estimating the impact of organizational culture on employee engagement in the organization**

	Model 1	Model 2	Model 3
Communication	0.0535**	0.0495**	
	(0.0247)	(0.0240)	
Training	0.0892***	0.0950***	
	(0.0264)	(0.0262)	
Reward	0.0422*	0.0465**	
	(0.0221)	(0.0216)	
Effectiveness	0.0609***	0.0762***	
	(0.0218)	(0.0213)	
Future orientation	0.119***	0.117***	
	(0.0258)	(0.0257)	
Fairness	0.0565**	0.0602**	
	(0.0252)	(0.0247)	
Innovation and risk	0.0624**	0.0686**	
	(0.0282)	(0.0282)	
Orientation on teamwork	0.0999***	0.0954***	
	(0.0258)	(0.0255)	
Leadership Behavior	0.154***	0.167***	
	(0.0156)	(0.0149)	
Control variables	Yes	No	Yes
Organisationnel culture			0.671***
			(0.0258)
Constant	0.756***	0.804***	1.040***
	(0.1460)	(0.0946)	(0.1440)
Observations	267	267	267
Adjusted R-squared	0.798	0.791	0.775

*Source: Results extracted from SPSS*

*Note: Numbers in parentheses are standard deviations; The symbol \*, \*\* and \*\*\* represent the significance level at 10%, 5% and 1% respectively.*

The estimation models have quite high adjusted R-squared values, approximately 80%. If comparing the adjusted R-squared in model 1 and model 2, it is clear that most of the change in employee engagement in the enterprise is explained by the changes in organizational culture. The characteristics of employees and businesses do not contribute significantly to the change of employee engagement with the organization in the enterprises. If comparing the adjusted R-squared in model 1 and model 3, the model 1 gives a greater adjusted R-squared.

Estimated results from model 1 show that aspects of organizational culture have an impact, which is statistically significant at the significant level of 1% to 10%. In model 3, the estimation results also affirmed that organizational culture has an impact on employee engagement with the organization in the enterprise at the 1% significance level. This result confirms the importance of organizational culture to the engagement of employees in the enterprises. The standardized coefficients of cultural aspects to employee engagement are presented in order from high to low in Table 4.

**Table 4: The importance of organizational culture aspects to employee engagement in organization**

<b>Aspects of employee engagement</b>	<b>Standardized coefficient</b>
Leadership behavior	0.154
Orientation on future plan	0.119
Orientation on teamwork	0.0999
Training and developing	0.0892
Innovation and risk taking	0.0624
The effect of making decision	0.0609
Fairness in governance policy	0.0565
Organizational communication	0.0535
Reward and recognition	0.0422

*Source: Results extracted from SPSS*

The results of multiple linear regression analysis can provide some conclusions. All nine elements/ aspects of organizational culture positively influence and are closely related to employee engagement with the organization in Vietnamese enterprises. The stronger these factors are, the higher the intensity of engagement, in which leadership behavior is seen as an important factor to improve employee engagement. The findings also show the importance of other factors in the model such as: Training and development, employees can participate in training courses, improve professional skills and, expand vision and knowledge formula to build a team

of qualified professionals; Reward and recognition, recognition of employees' dedication, satisfactory rewarding is the motivation for employees to associate with the workplace. Moreover, rewarding aspects such as fair, transparent assessment, implementation of committed policies, high wages and timely encouragement of employees, bringing high efficiency to impact engagement of employees in this study.

## **6. Discussion and conclusion**

This study provides evidence that organizational culture aspects positively impact employee engagement with the organization, which means that these factors are predictable and improve level of engagement of employees. Recommendations for administrators in building and developing organizational culture promote positive behaviors of employees, improve labor efficiency, create competitive advantages for businesses. Based on the empirical results, the study provides policy implications for enterprises in development of organizational culture according to the following specific orientations:

First, enterprises need to focus on encouraging leadership behavior in the organization. In today's competitive socio-economic environment, good expertise and dedication to work are not enough to bring success for workers. Without the support, sharing and orientation of business leaders, it is difficult for employees to achieve success. Therefore, the behavior of leaders in enterprises is an indispensable secret in a dynamic working environment. Business leaders need to consider organizational culture as intangible assets that cannot be replaced; always maintain and develop cultural organization as development of enterprises.

Second, businesses need to an orient future plan. This represents the long-term vision of the organization and has positive implications for employees. When employees are shared and know future plans, they will better understand the organization's activities, feel that they are part of the organization, from which each employee is aware her role and work to contribute and try her best in success of the enterprises.

Third, businesses need to focus on teamwork orientation to improve the performance of employees. The enterprise should provide the necessary conditions for effective operating groups, actively help groups promoting creativity, autonomy and self-responsibility. In addition, applications of group-working and paid help increase the sharing, cooperation and mutual support among employees.

Fourth, enterprises need to pay attention to training and development. In order to create a competitive labor force in the labor market, training is considered as a long-term investment and an important instrument to achieve the organization's goals. In the process of international economic integration, quality of human resources is one of the important competitive advantages in a modern business environment and

is one of the motivational factors for employees at the workplace. In order to promote the effectiveness of training, enterprises need to assess training needs carefully, based on the goals and future development direction of the business. Enterprises need to create conditions for employees to participate in training courses, improve skills and build high-quality staff.

Fifth, businesses need to encourage innovation and accept risks, which is really important and necessary in a competitive environment. To survive and develop, enterprises must constantly innovate in practical activities. Enterprises always encourage new and creative ideas in doing their work. Effective innovations and innovations should be noted and rewarded in many ways. In the common thinking of employees, the salary is only the minimum level of payment stipulated by the State, businesses pay very low main salary to reduce the social insurance premium for the state. Thus, incentive and benefit policies are considered.

Sixth, the efficiency of decision making in the business process is important to the success of individual, group and the whole organization. In the operating process, many decisions that need to be made and implemented timely such as price decisions, packaging, customer services, operating machines,... To achieve the efficiency in decision making, businesses must pay attention to their decision making. Enterprises must build a strategic goal, thereby breaking down smaller goals; giving rights and responsibilities for each employees. Businesses make employees aware and understand the values and losses when deciding on a problem; trust and give employees autonomy. When employees make the wrong decisions, businesses should share the damage. It would make employees contribute and devote themselves to the organization.

Seventh, fairness in governance policy requires enterprises to have effective policy development and implementation. Human resource management policies should be implemented consistently and synchronously for employees. When workers find that businesses are not fair, especially policies related to employees' rights, they feel discontented, frustrated, or even want to leave the business. That makes workers more passive in work, reduce support, discontent. Moreover, the fairness within the enterprise will create positive environment, satisfaction with work and increase the engagement of employees with the organization.

Eighth, businesses encourage and promote communication in organizations. In particular, enterprises develop communication channels so that have sufficient information to carry out their work. It also emphasizes the importance of communication between upper and lower levels. If they encounter difficulties, they can receive timely guidance from their superiors, and eventually increase

performance of employees. It is necessary to focus on adjusting and harmonizing the organizational culture, creating a friendly working environment, sharing and cooperating, mutual respect, and creating cultural links.

Finally, enterprises should reward and recognize timely the contributions of employees. They need internal communication for employees to understand the financial incentives and organization benefits. Helping employees understand and to be recognized and rewarded, they would work hard and have a better contribution. Reward and recognition should be fairly applied as worth as value of labor that employees; thus it would help the organization maintain employee engagement.

The empirical results have affirmed that human factors need to be concerned by businesses. In order to create and develop organizational culture, human factors should be placed in the centre, as the most important resource for sustainable development. Research results help business leaders, managers to recognize, evaluate and select their decisions to develop a more sustainable corporate culture. This also provides business leaders understanding that organizational culture is an irreplaceable asset. The empirical findings provide evidence to build, develop and renew the organizational culture so that to fit the enterprises in each period of development; to stimulate the employees enthusiastically devote their capacity for themselves and the organization. Moreover, organizational culture also creates a competitive advantage, intangible values that help customers and partners distinguish businesses from others. In other words, this is an determinant of the existence and sustainable development of enterprises during the era of the industrial revolution 4.0.

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# DEVELOP HIGH QUALITY HUMAN RESOURCES FOR BANKING AND FINANCIAL ENTERPRISES ENTERPRISES IN THE INDUSTRIAL REVOLUTION TREND 4.0

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## **Abstract**

*Human resources in the Banking - Finance industry include those working in enterprises, organizations and agencies in the fields of investment, securities, insurance, tax, customs, State Treasury, and management. fund management, banks, finance companies, remittances, financial leasing companies, finance companies, credit funds, credit card organizations, payment services companies ... at all angles State management, construction and administration of policies, to businesses, professional associations, training, research, consulting and other non-business units. In the sub-sector of the national economy, banking-finance belongs to the service sector, has developed very rapidly in the past years of innovation, especially in the development trend of the current 4.0 industrial revolution Now, according to that, human resources are constantly increasing both in size and quality.*

**Keywords:** *high quality, human resources, finance - banking industry, industrial revolution 4.0*

## **1. Introduction**

International integration, implementation of market access to financial services under the roadmap and commitment to WTO accession, implementation of commitments of the CPTPP and EVFTA agreements, of the ASEAN economic community: AEC; The trend of industrial revolution 4.0, the development of Fintech,... the competition in the financial and banking sector in Vietnam is increasingly fierce and exciting, the pressure or opportunities and challenges are growing,... not only by international corporations, banks, finance to Vietnam and expanding business activities in Vietnam, but also Vietnamese commercial banks expand, consolidate and acquire, set up networks branches in regional and European

countries. Therefore, the development of human resources for Vietnam's financial and banking sector to meet the integration requirements is a high quality human resource.

So understand what is the high quality human resources in banking - finance. According to the author of the article, it is the person who meets the requirements of the job, is arranged in the banks and financial institutions of Vietnam in a competitive environment, growing integration, the trend of Industrial network 4.0, the development of Fintech.

According to the aforementioned understandings, not those who are trained abroad, having international banking experience can be a high quality human resource of Vietnam's banking industry. Because their work is delivered but they cannot complete well or successfully complete because they do not communicate business, cultural, and habitat, do not grasp the laws of administrative and delivery issues. continued in business in Vietnam, lack of Vietnamese practice. The analysis in the following section can further explain that view.

Also according to the above interpretation, high quality human resources are not only those who are trained and knowledgeable about banking operations but also knowledgeable about the financial market, insurance market, and public finance. trend of industrial revolution 4.0, the development of Fintech,... So the author mentioned here is that high quality human resources in banking - finance.

## **2. Research Methods**

The paper uses qualitative research methods, based on data sources and secondary data, documents and reports of a number of commercial banks, a number of organizations and some businesses, conducting analysis, compare, evaluate and draw comments to clarify the situation and propose solutions according to the research objectives of the topic.

## **3. Research results**

### ***3.1. Overview of the current situation of high quality human resources in the banking - finance sector in Vietnam***

#### ***3.1.1. Regarding the use of personnel for CEO positions***

For more than 25 years, since 1993 when the US abandoned the embargo on Vietnam and Vietnam, it officially resumed relations with international financial and monetary institutions, many banking and financial corporations, Other financial institutions and financial institutions have come and been in business, operating in Vietnam. Among the quizzes, some foreign banks opened branches, insurance groups in Vietnam, they recruited or brought the General Director, Deputy General Director from abroad, that is overseas Vietnamese to work for the branch. in their country,

with the expectation that overseas Vietnamese have the international standard of banking management, both understanding the culture, customs and understanding of the Vietnamese market will achieve success. These are Citibank and Bank of America (USA), ING Bank and ABN - AMRO Bank of Netherlands, ANZ Bank of Australia .... (currently some of these foreign banks have stopped operating in the country). *VNBA (2018)*

Foreign banks using Vietnamese people who have experienced overseas working as the General Director. Ms. Dam Bich Thuy, General Director of ANZ Bank has experienced in Singapore,... Mr. Pham Hong Hai - HSBC Vietnam General Director and HSBC Director Hanoi is also Vietnamese. Some other important positions, such as the director, also employ, arrange, or use Vietnamese people who have experienced. It is shown that Vietnamese people have initially met the requirements of high quality according to international and regional standards in the financial and banking sector in financial institutions in Vietnam and in the region. Dam Bich Thuy has also assumed the position of CEO at an ASEAN bank and is currently the Principal of Fulbright University Vietnam. *VNBA (2018)*

At some commercial banks of Vietnam today, such as Commercial and Commercial Joint Stock Commercial Bank and Maritime Commercial Joint Stock Bank have also hired the General Director who is a foreigner with experience in emerging markets and regional markets. Vietnamese people take on.

Some other commercial banks, securities companies, insurance companies, investment funds, fund management companies, etc. of Vietnam also use a number of foreign CEO titles, such as: International Joint Stock Commercial Bank, Joint Stock Commercial Bank Maritime,... Some commercial banks, securities companies of Vietnam, fund management companies in Vietnam hire foreign consultants in some areas of governance, technology, services,... Or run by foreigners. A number of joint-stock commercial banks attract high quality human resources through recruiting people who have worked for joint-venture banks and foreign bank branches in some positions of head of the head office, director of risk management, technology division. *VNBA (2018)*

Many securities companies, investment funds, insurance companies, fund management companies, etc. operating in Vietnam in both domestic and foreign capital have been invited or hired good experts. rich in experience of foreign securities, investment, insurance... to work in different positions. *Vietinbank (2018)*

Positioning CEO in many banks, financial institutions, securities, insurance, investment funds, payment service companies... using young Vietnamese, well-trained, graduated universities, masters, doctorate in economics, or have worked in

the finance - banking sector in developed economies, such as the US, UK, Germany, France, Australia... have gone through practice, having experience in emerging economies... holding the position of General Director, Deputy General Director, block director ... *VCB (2018-2019)*

### *3.1.2. About recruitment*

Experience in professional work in banks, financial institutions is almost mandatory standards, the first standard for many commercial banks when recruiting in most positions, from professional staff to titles manage. Understanding expertise and experiencing reality is a first standard for recruited human resources. In recent years, most Vietnamese commercial banks have required candidates to have at least 2 - 3 years of experience in the professional field to be recruited.

Must have a good university degree for men and good for women, leading public and specialized public schools. This does not distinguish between men or women, distinguishing public or people-founded schools, those who graduated from that type or the other. Because every year, thousands of students graduate in accounting, auditing, finance, currency, banking, insurance, and investment economics. So to save costs for employers, banks, securities companies, insurance companies,... they must rely on training results, trust in training institutions to do prequalification work immediately. From the beginning based on diploma and graduation transcript. Despite making such standards, in recent years, each round of receiving recruitment documents of BIDV, Vietcombank, Vietinbank, Techcombank... the number of dossiers eligible for receiving is 4 - 8 times higher than the recruitment demand. At a BIDV branch in Hanoi, the recruitment demand is only 23 people, but in the first morning there were 300 qualified people, eligible to apply. At the Joint Stock Commercial Bank for Foreign Trade of Vietnam (VCB), the recruitment of nearly 50 people in the Northern region in May 2017, there were 1,400 people eligible to apply. The number of candidates queuing to apply tueyenr applications at the headquarters of VCB at 198 Tran Quang Khai is nearly 1 km long, the bank has to hire a bodyguard company to ensure order and benefits for the queue of filing profile. Other recruiting sessions of VCB also happened in the same situation. *VCB (2018-2019)*

In Techcombank, after the selection of records, the rate of "fighting" is usually up to 12/1, if it passes this test, the bank will have more training and recruiting time. *VCB (2018-2019)*

In the last 5 years in Vietnamese commercial banks, recruitment has been carried out in 3 steps: recruiting according to the profile and according to the very

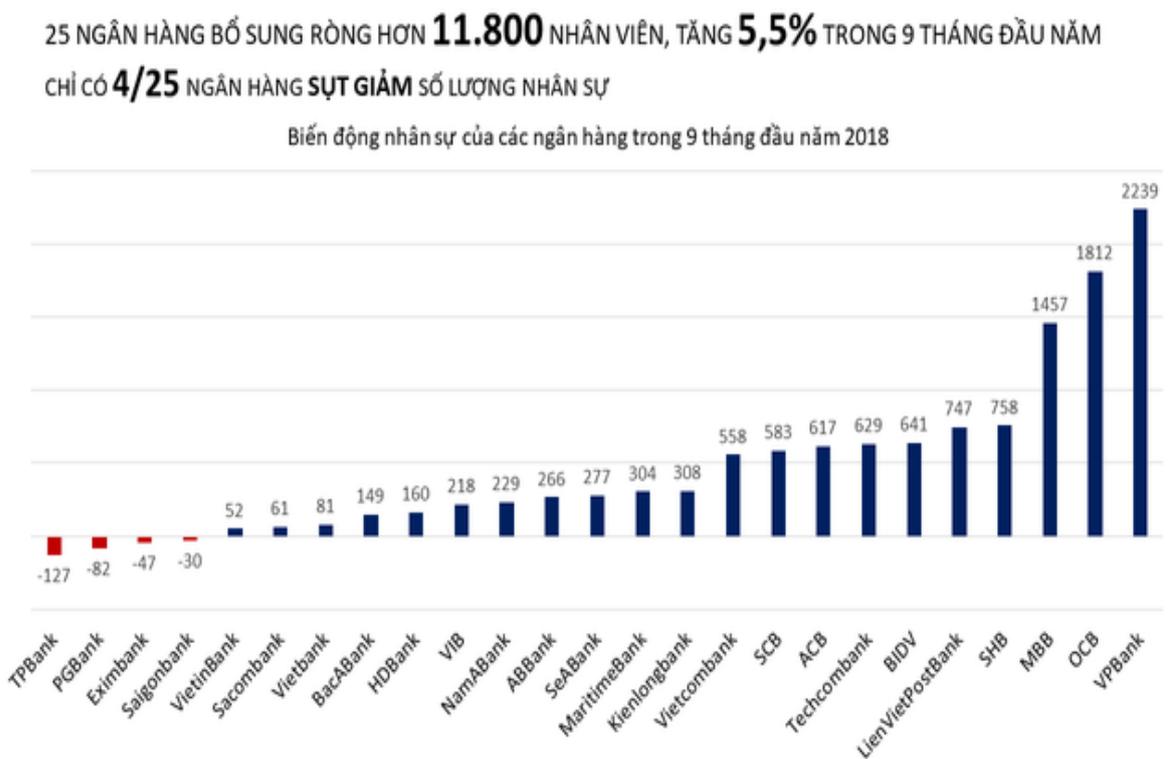
competitive criteria to be accepted as a collaborator, then 3 months of recruitment continue to work on trial work, After 3 months of formal recruitment into signing short-term contracts, if not guaranteed the assigned quotas, after 1 year will be eliminated, while ensuring the target will be officially recruited.

On the one hand, it shows that the supply of human resources in the financial and banking sector is very large but there is limited demand and financial institutions have conditions to recruit high-quality human resources for themselves. This market is moving according to the trend of "screening" and rotation, that is, those who cannot stand the pressure, meet the actual work, cannot guarantee the business targets, or not suitable for them, they apply for leave and transfer to another bank, or get eliminated, terminate the contract, ...

Please give an example, although it has to be restructured in many ways, in 2015, Sacombank recruited more than 2,100 people, in 2016, it recruited about 2,500 people, in order to replace employees who quit their jobs and supplement their staff. Business, 2017 and 2018 also recruit 1,000 people each year. VCB (2018-2019)

Refer to the personnel changes in the first 9 months of 2018 of 25 Vietnamese commercial banks selected in the drawing below.

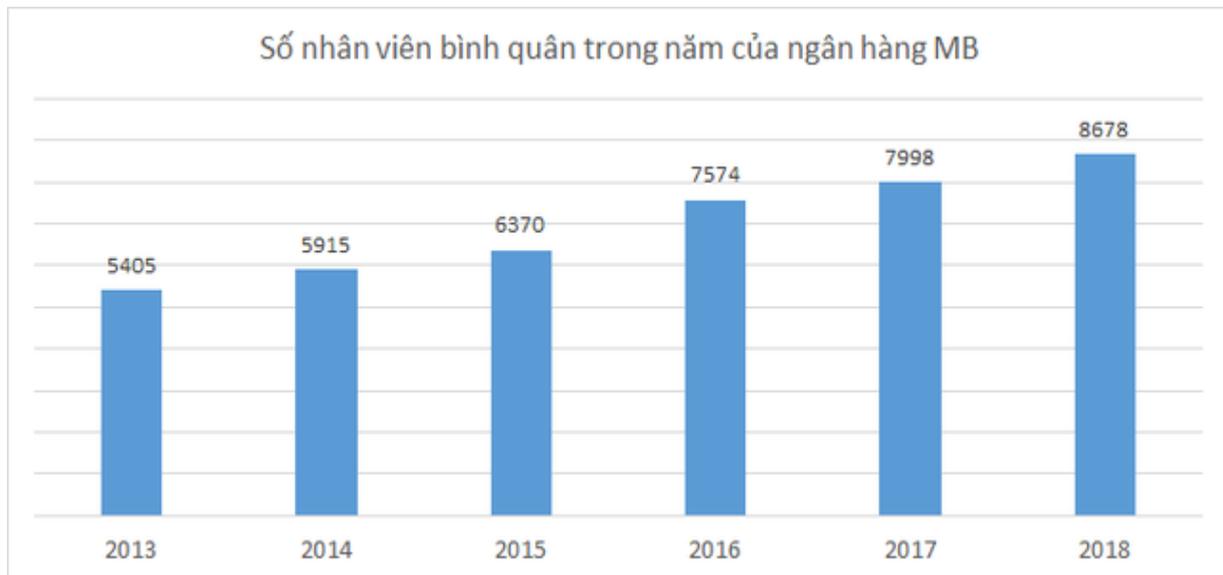
**Figure 1: Human resource changes in the first 9 months of 2018 of 25 Vietnamese commercial banks**



VNBA (2018): "Report on the assessment of current banking human resources", Vietnam Banking Association, hard copy, internal circulation documents, 12/2018

Refer to the personnel changes in the period 2013-2018 at Vietnam Military Commercial Joint Stock Bank, selected in the drawing below.

**Figure 2: Average number of employees in the year of MB in the period 2013-2018**



*MB (2013-2018): "Annual report on human resource changes at MB", Internal Report, MB, Hanoi in January 2019*

Regarding the form and interview standards, behavior, thinking, skills in handling work and situation solving skills:

In addition to the above two criteria, in order to be able to receive resumes, employers must also meet the formal requirements. Because this is a service industry, dealing directly with a large number of different customers, it is necessary to ensure trust, attraction and closeness. polite to customers. Not only that, but also through interviews, dynamic, flexible, confident, capable of working in groups, advancing, analyzing and predicting, development trend, bearing pressure... Of bank employees, securities, insurance, in the future. At Military Commercial Joint Stock Bank, recruitment standards are "strict" so that officials working at the bank must utter if they participate in the entrance exam, they themselves fail! *VCB (2018-2019)*

At Sacombank, priority should be given to selecting candidates in the following order: Qualifications - Qualities - Skills - Forms (appearance, behavior) - Experience in suitable positions. But in general, recruits must meet all four criteria above. *VCB (2018-2019)*

ABBank declared publicly and clearly: always encourage young people who wish to contribute and develop their careers at ABBank and the staff with professional

qualifications in the field of finance - applied banks to work. work at the bank. *VCB (2018-2019)*

About organizing human resource recruitment exams: many securities companies, insurance companies, banks hire "headhunters: Head Hunter" to objectively and professionally do this job. Participants must pass 3 rounds of pre-qualification: prequalification through lake offices and forms, writing exams and interviews. Vietnam Joint Stock Commercial Bank for Industry and Trade also organizes online examinations on computers and online networks. Contestants know the results immediately and there is no fraud to interfere with the examination, examination and summarizing test scores. *VCB (2018-2019)*

### *3.1.3. Regarding the use of human resources:*

Inexperienced people are recruited by banks, securities companies, financial companies, insurance companies, investment funds, before being assigned specific professional jobs and assigning official responsibilities, almost all must undergo training, short-term training courses organized by the bank, financial institution or enterprise itself. The training content, besides learning about internal and cultural regulations of banks, companies and enterprises, is introduced to the traditional history of banks and enterprises, so it is very important that main professional training, specific job training will be delivered, specific business process guidelines will be taken; responsibilities, obligations and entitlements under labor contracts and under current laws. *Vietinbank (2018)*

Organize retraining for working staff and employees: the main content is new knowledge or new requirements, new requirements, held regularly. Organize the re-examination of officials and employees, evaluate the results of the performance of duties and tasks assigned to KPI criteria. Use the right professional skills, use the right people, the right job. *Vietinbank (2018)*

### *3.1.4. About remuneration*

Most joint-stock commercial banks are willing to agree on certain salaries for some people with professional experience in the field of recruitment.

Income is associated with the results of the enforcement of responsibilities, associated with business results. Often commercial banks set a quantitative regime with a distance of 3 levels: the direct profit making, or Front of Office, has the highest income; intermediate level, support, also called Middle of Office, average income level; logistics level, also known as Back of Office, lower income.

Income regime is associated with the target of business allocation for branches, transaction offices and each employee. Many commercial banks use KPI criteria to

assess each department, branch and officer. Currently Vietcombank, Techcombank, VPBank, ... are being implemented throughout this indicator system. *Vietinbank (2018)*

Income reward regime is associated with marketing results, customer attraction and exploitation results, new contracts are signed,... Domestic and foreign travel regime: this form creates a connection on the one hand. bundle of human resources with the bank, on the other hand is also a remuneration regime associated with business results. Salary and salary transfer and other bonuses at the end of the year or the end of the quarter.

### *3.1.5. Some limitations*

First, cases of hiring CEOs are foreigners, overseas Vietnamese, or people with international experience are generally effective, but only at a certain limit of efficiency. However, in fact, there are many financial institutions that seem like foreign experts do not bring expectations as originally expected, have not seen anyone stay long in Vietnam and those branches have not seen outstanding success in Viet Nam. Of course, according to the general principle after a 3-5 year term, foreign banks transfer their managers and managers to their branches. Particularly, there are cases where overseas Vietnamese are deputy general directors of a commercial bank that has not left the position for 3 years and returned to foreign countries! Some cases of foreigners and overseas Vietnamese have yet to see the outstanding success in Vietnam of securities companies, insurance companies, finance companies or investment funds. *Vietinbank (2018)*

Secondly, there is a relatively clear fact, whether students graduate with a major in finance, banking, currency, or business administration major of top universities abroad. or a well-known training institution, ranked 100 universities in the world, if employed to work at banks, finance companies, insurance companies, securities companies,... Vietnam is not sure to immediately promote efficiency and bring satisfaction to recruiters from the first days of work. But even financial, securities, investment, insurance and banking experts are working for the world's best financial institutions, now employed to key positions and key positions. As an executive manager of financial institutions in general, Vietnamese banks in Vietnam are also hard to adapt to business in a specific environment of Vietnam. The business environment of the finance and banking sector in Vietnam has many different points with foreign countries, so there are successful General Directors abroad but not necessarily appreciated in Vietnam.

Thirdly, besides the above-mentioned fact, there is another fact that is a student whether it is a thorough training, how well trained it is in prestigious universities in the country, after graduation. Can not arrange a position of management, whether the

deputy head of the transaction department, deputy head, or independent undertaking a job, not to mention the position of head, deputy director of the branch, ...

Fourthly, training in Vietnamese universities is still heavy in theory, limited in operation, professional, skill, situation handling.... The article would like to analyze some schools The following specific case:

The first is the University of Hanoi's Foreign Trade. Most Vietnamese commercial banks have actively evaluated the recruitment of graduates of this training facility. The outstanding advantage of Foreign Trade University graduates is agility, flexibility, dynamism, ability to communicate and behave; followed by English proficiency and international payment expertise. It is still clear about the banking profession, it cannot be said to be proficient when compared with students of City Bank University. Ho Chi Minh City and Banking Academy.

The reason of the above advantage is that the English training, which is thinking, is the training method, not the professional level in the training process as well as the practical update of the curriculum, discussion content, practical analysis skills. Another factor that is undeniable is that the entrance of the Foreign Trade University has always been the top in the university sector both in terms of Block A and Block D. *Vietinbank (2018)*

The second is the National Economics University, the entrance of specialized admission in Banking - Finance is also an advantage. Then there is the ability to analyze policies, macro, methodical thinking... of graduates that is also an outstanding of many recruitment agencies when evaluating the training results of universities.

Third is a university training institution in the banking industry. The common advantage that employers recruit about their graduates here is the professional qualifications of banking, the ability to work. Song said that when recruiting banks that cannot be used immediately, they must go through professional training in place and at the bank.

Fourth, students of a number of people-founded universities, whose schools have the advantage of deep training in professional skills, have schools, students have dynamic styles, adapt to reality, but generally the Recruitment products cannot be used immediately.

So is it high quality human resources, or improving the quality of specialized training in Finance - Banking will be the crystallization of advantages, the combination of superiority of training methods of all universities learn above! We cannot have the ideal human resource and it is difficult to achieve the combined goal.

### 3.1.6. Causes of restrictions

#### 3.1.6.1. About the curriculum

In the banking sector, almost any university now uses the textbook of that school. I emphasize the word almost. There are even cases of "plagiarism" of other people's curricula, of which the public stated. There are many textbooks that are "reference" to each other quite "miraculously". A small number of textbooks or books are based on translating, confusing and lengthy materials, long-time bank officials also find it confusing and "horizontal". So far, there is no standard textbook, or at least 3-4 standard textbooks are required for 3-4 subjects on the most essential professional skills, recognized by the specialized curriculum editorial board. But in general, there is a considerable proportion of textbooks with relatively good distance compared to actual banking operations, not updating the current banking knowledge, information and operations of Vietnamese banks, if not saying many parts are still backward, especially some universities outside the banking sector. There is a syllabus with information from the time of implementing two Banking Ordinance and both thinking and interpretation of the old mechanism. There is even a professional curriculum of a university that has too many errors about elementary issues, unnecessary details. Also due to subjective expertise in curriculum compilation, so when designing multiple choice exam questions, many sentences are both obscure and error-prone. There is even a banking expert who said that if they test the questions, getting a score of 5 is very difficult and many sentences they don't know how to answer are correct! We have seen immediately the syllabus of RMIT University in Vietnam, they have updated, compiled, supplemented and completed every year, linking the international issues with the reality of Vietnam, both policies, legal regulations and other practical issues. *Vietinbank (2018)*

#### 3.1.6.2. About teaching content and subject structure

Some subjects are not practical for specialized finance - banking training. There is overlap and overlap between professional subjects. Examples of financial and monetary theory include chapters on interest rates, credit, commercial banks, central banks, exchange rates and foreign exchange, etc. But the same content is also in-house. subjects: commercial banking, international finance, international currency and international payment, Central Bank, ...

#### 3.1.6.3. About faculty

There are many lecturers and lecturers of many universities, although they can be sure about theory, reasoning, but have not updated reality, not close to the reality

of financial and banking activities. To overcome this situation, there are people-founded universities inviting experts of the Central Bank, the Ministry of Finance and experts of commercial banks, securities companies, the State Securities Commission, and the National Financial Supervision Committee.... undertaking some chapters or some teaching content, but this method is not commonly implemented. Besides, some experts are busy, so they cannot participate effectively.

There are even cases where students of a private university have just graduated for 2-3 years and have just protected the master's thesis but have taught the theory of finance and monetary in the regular university major. finance and banking of the school itself. Or there is someone who has a degree in economics, a degree in economics, a macroeconomics and a political economy, but now also lectures on both Financial and monetary theory and International Finance for mainstream students. University!!!! Young lecturers, who have just graduated, are preaching in professional classes, as well as inadequacies and inefficiencies. *Vietinbank (2018)*

Also about the faculty and teaching staff, the situation of "overload" or "running numbers", less time to study or practical access, ... also contributes to limiting the training of human resources. High quality force for Vietnamese banking industry. *Vietinbank (2018)*

#### 3.1.6.4. About teaching methods

In recent years there has been an important innovation, especially the top university in the economic sector. But in general, the teaching method of finance and banking in many universities has not had significant changes, discussion, debate and exercises, not much research of the situation.

### **4. Discussion and conclusion**

Within the scope of the paper, the author has no conditions to analyze and explain in detail and details of each specific proposal. But the spirit of general solution to the above situation is in overcoming the mentioned limitations:

Firstly, it is necessary to associate theory with practice, reasoning with practice, continue to innovate both training methods and content of the curriculum, arrange teaching staff, ....

Secondly, it is necessary to have a specific plan for regular updates on new issues, new operations, ... in financial and banking activities. First of all, update in case studies, student discussions; Next is to update in the content of teaching and training, updating in the curriculum, if not updated every year, at least every 2 years, need to add new content. case, group discussion,... in students.

Thirdly, it is necessary to review the contents of the subjects, reduce overlapping, duplication, ensure general subjects and professional subjects.

Fourthly, it is necessary to strengthen cooperation and exchange of information, materials and discussions between commercial banks and credit institutions with training institutions.

On the side of functional units of the Central Bank, commercial banks need to actively invite teachers and scientists at specialized training institutions to participate in scientific research workshops, and actively provide New materials for training institutions, especially professional training materials, foreign survey documents, and seminars should be widely exchanged between training facilities. create and banks. Even training institutions invite practical experts to present research topics, professional subjects, new regulations and policies for students, master students, even teaching staff. young. Should not arrange young lecturers, less practical experience to teach in-service classes for specialized students. Strengthening cooperation of specialized training universities with training and retraining centers of commercial banks.

High quality human resources of the banking - finance industry has always been a topic of top priority, researchers and executives really care. This industry is assessed to bring higher income than business premises, but it is accompanied by strict requirements on both capacity, qualifications, working skills and form of integration requirements.

In addition, the rate of "fighting" to be recruited by banks and financial institutions is also increasing in the context of supply from specialized and non-specialized schools, while the number of banks, financial institutions have declined again following the policy of the State on restructuring. Therefore, there is a need for real innovation in the training of banking and financial human resources at universities.

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# PHARMACIST'S INTERACTION BEHAVIOR AND CONSUMER LOYALTY WITH THE ROLE OF CONSUMER TRUST AND CONSUMER SATISFACTION MODERATION

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## **Abstract**

*The present study aims to test the relationship between pharmacist's interaction behavior and consumer loyalty with the role of consumer trust moderation and consumer satisfaction in pharmacies in Vietnam based on a convenient sample of 327 respondents in Ho Chi Minh City and Dong Nai province in Vietnam and structural equation model (SEM). The results revealed the strongly significant relationship between pharmacist's interaction behavior include perceived pharmacist's listening, perceived pharmacist's listening, perceived pharmacist's professional competence of pharmacist and consumer loyalty with the role of consumer trust moderation and consumer satisfaction in pharmacies. The findings of this research can help the organization to understand customers' needs so that organizations can serve their customers better than their competitors, which finally leads to cost reduction and customer loyalty.*

**Keywords:** *Consumer trust, Consumer satisfaction, consumer loyalty, pharmacist's interaction behaviour, Vietnam.*

## **1. Introduction**

A pharmacy's performance and sustainable success depend on its competitiveness and its ability to attract, retain, and please consumers. Local pharmacies need a clearer understanding of this threat in order to make wise strategic decisions to satisfy consumers. The competitive market environment requires from community pharmacies to develop effective marketing strategies based on contemporary information about consumer behavior in order to attract and develop customer loyalty. An improvement of the business model of community pharmacies appears to be a necessary reaction to the increased competitive pressure (Castaldo,

Grosso, Mallarini, & Rindone, 2016). More effective consumer–pharmacist relations may be the key to achieving and sustaining competitiveness. Community pharmacies are the most accessible providers of primary health care to the community, through the management of therapeutic use of medicinal products, as well as other related pharmaceutical services. The medicines are not just another economic good and the consumers’ behavior naturally is built towards them, mainly in the cases, if they are sold outside of pharmacies. The image and professional performance of community pharmacist are improving in most countries and results in better satisfaction, perception, and appreciation of the pharmacists’ role in the health care team. Despite this, community pharmacists need to be able to reach out to patients, assess their requirements and should play a pro-active role in becoming an effective and indispensable part of health care (Al-Arifi, 2012). The present study aims to test the relationship between pharmacist’s interaction behavior and consumer loyalty with the role of consumer trust moderation and consumer satisfaction in pharmacies in Vietnam.

## **2. Literature Review**

### ***Pharmacist’s interaction behavior***

Pharmacists are representatives for health care experts ranking third in the world, just after nurses and doctors (Anderson, Bates, Beck, Brock, Futter, Mercer, & Yonemura, 2008). They spend most of their time on three duties: distribution, consultancy, and management (Cavaye, Lehnbohm, Laba, El-Boustani, Joshi, & Webster, 2018). They can participate in prescribing, consulting periods and have to take legal responsibilities for each drug item distributed and provide. Pharmacists use their specialized knowledge about types of drugs to maximize the health results and minimize the risks from drugs. They apply their knowledge about drug risks to promote safe usage and to avoid basing the patients and others in the community. Drugstore practice includes preservation, prepare, goes along with methods and knowledge to ensure the quality of using the medicine. As a health professional pharmacist can access easily and provide first health care services including reduced, consultancy in order to enhance health conditions and to decrease the ratio of diseases. A strong pharmaceutical knowledge foundation could tackle problem transformation communication skill successfully (Moles & Stehlik, 2015). The professionalism of a pharmacist is important to provide quality counseling and advising to customers in purchasing drugs. The structural dimensions of pharmacist professionalism are listed as i) a distinct body of knowledge; ii) internal regulating capabilities; iii) extensive training and skill requirement; iv) code of ethics; vi) service commitment; and vii) occupational autonomy (Mardanov & Ricks, 2013).

### ***The relationship between pharmacist's interaction behavior and consumer trust and consumer satisfaction***

The consumer–pharmacist relationship develops through advice and counseling. Advising and counseling services in drugstores are widely practiced for prescription and over-the-counter (OTC) drugs (Mardanov & Ricks, 2013). Trust can be defined as the belief in the integrity, honesty and the reliability of another person (Dwyer & Tanner, 2002). Consumer satisfaction refers to satisfaction with pharmacy delivered counseling services include perceptions regarding the pharmacy visit frequency, counseling received, initiator of counseling episode and the usefulness and effect of counseling on patient's health-related behavior (Kansanaho, Isonen-Sjölund, Pietilä, Airaksinen, & Isonen, 2002). Mesquita, Lyra Jr, Brito, Balisa-Rocha, Aguiar, & de Almeida Neto (2010) had an assessment focus aimed at documenting counseling behavior of practicing pharmacists, rather than an educational focus aimed at equipping pharmacists with effective communication skills. Cavaco & Romano (2010) showed the focusing on pharmacists' communication competencies, should be available to favor interaction skills resulting in a customer's augment of proactive information seeking behavior. Ben Naoui & Zaiem (2010) showed that there is a significant relationship between the antecedents of relationship quality, namely, interpersonal communication, relational contact, conflict resolution, and client-oriented behavior, and relationship quality itself. Relationship quality has also an impact on loyalty which is accounted for positively by satisfaction, and negatively by affective conflict. The important role of the skilful communication between pharmacists and pharmacy consumer in promoting customer's loyalty and pharmacy trust have been illustrated by relevant studies (Castaldo et al., 2016; Antunes, Gomes, & Cavaco, 2015; Athavale, Banahan, Bentley, & West-Strum, 2015; Singh Gaur, Xu, Quazi, & Nandi, 2011). Pharmacy's employee performance, previous experience, and the pharmacist's opinion were factors influencing the purchase of pharmacy (Kevrekidis, Minarikova, Markos, Malovecka, & Minarik, 2018; Rabbanee, Burford, & Ramaseshan, 2015; Moles & Stehlik, 2015; Hanna & Hughes, 2011). Pharmacist's helpfulness and professionalism have a significant impact on customer loyalty (Mardanov & Ricks, 2013; Patterson, Holdford, & Harpe, 2018).

H1: Perceived pharmacist's listening has a significant influence on consumer satisfaction.

H2: Perceived pharmacist's listening has a significant influence on consumer trust.

H3: Perceived pharmacist's advising has a significant influence on consumer satisfaction.

H4: Perceived pharmacist's advising has a significant influence on consumer trust.

H5: Perceived pharmacist's professional competence of pharmacist has a significant influence on consumer satisfaction.

H6: Perceived pharmacist's professional competence of pharmacists has a significant influence on consumer trust.

***The relationship between consumer trust, consumer satisfaction, and consumer loyalty***

Consumer loyalty is the most important advantage for a company that sells products and services. Loyal consumers always return and buy preferred products and services (Mardanov & Ricks, 2013). A common approach is to distinguish between a consumer's attitudinal loyalty and behavioral loyalty (Chaudhuri & Holbrook, 2001; Zeithaml, 2000). Behavioral loyalty is repeated transactions or percentage of total transactions in the category, or total expenditures in the category and can sometimes be measured quite simply with observational techniques. Attitudinal loyalty is often defined as both positive affect toward the relationship's continuance, and the desire to continue to remain in the relationship, and is sometimes defined equivalently with relationship commitment (Al Dmour & Sweidan, 2013). Athavale et al. (2015) revealed the effect of satisfaction and pharmacy trust as a multidimensional construct on pharmacy loyalty behavior. Castaldo et al. (2016) revealed that trust in pharmacists is the first driver of satisfaction and a direct and indirect (through satisfaction) driver of trust in pharmacies, which leads to store loyalty. Consumer satisfaction is often leading to loyalty and trust (Rahmani, Ranjbar, & Gara, 2017).

H7: Consumer trust has a significant influence on consumer satisfaction.

H8: Consumer trust has a significant influence on consumer loyalty.

H9: Consumer satisfaction has a significant influence on consumer loyalty.

**3. Methodology**

Structural equation modeling (SEM) was used to estimate parameters. There are 27 items to measure the variables of the research model. All items are measured by 5-point Likert scales from 1 (completely disagree) to 5 (fully agree). Hair, Black, Babin, & Anderson (2010) indicated that the sample size must be at least 100 in order to use the Exploratory Factor Analysis (EFA) (Hair et al., 2010). In addition, for Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM), Anderson & Gerbing (1988) suggested a sample size at least 150 to obtain parameter estimates of practical use. Bentler & Chou (1987) proposed that the ratio of a sample size to the number of free parameters may be able 5:1 under the normal theory, especially when there are many indicators of latent variables. According to

Tabachnick & Fidell (2007), 300 cases or more provide a significant sample size for factor analysis. In this study, the authors use a sample of 327 consumers were recruited by non-probability sampling methods (convenience sampling technique) at independent pharmacies and pharmacy chain in Ho Chi Minh City and Dong Nai province. The demographic characteristics have shown the diversity of the sample (see Table 1).

**Table 1: Differences in demographics among respondents**

<b>Demographic Variables</b>		<b>Frequency</b>	<b>Percentage</b>
Gender	1. Male	155	47.4%
	2. Female	172	52.6%
Age	1. Under 24 years	107	32.7%
	2. 25-31 years	87	26.6%
	3. 35-45 years	85	26.0%
	4. Over 45 year	48	14.7%
Income/ month	1. Under 300 USD	37	11.3%
	2. 300 - 500 USD	44	13.5%
	3. 501- 750 USD	142	43.4%
	4. Over 750 USD	104	31.8%
Level of education	1. High school or lower	72	22.0%
	2. Graduate	195	59.6%
	3. Postgraduate	60	18.3%
Marital status	1. Others	181	55.4%
	2. Married	146	44.6%

#### **4. Results and Discussion**

##### ***Reliability and Validity***

The data normality was first checked, and thereafter data analysis was undertaken using structural equation modeling (SEM) due to many of the investigated variables' latent nature. A multivariate test of normality was performed, Maximum Likelihood Estimation (MLE) is used for determining the goodness of fit of the model. The estimation results confirmed that the model was valid and reliable: Chi-square =477.641, df = 309, P = 0.000 (<0.05) was still acceptable due to the large sample size (Sengars & Grover, 1993), Chi-square/df = 1.546, GFI = 0.903, TLI =

0.954, CFI = 0.959, RMSEA = 0.041 (Hair et al., 2010; Kline, 2015), the lowest Cronbach's alpha value is 0.806 exceeding the cut value of 0.70 recommended (Hair et al., 2010). The composite factor reliability coefficients of the constructs ranged from 0.810 to 0.887, which met the standard of 0.70 as suggested (Fornell & Larcker, 1981).

All 27 variables of the scale with 6 structures are analyzed using the Extract Method Principal Axis Factoring with rotation Promax. Coefficient factor loading ranges from 0.570 higher than 0.5 (Hair et al., 2010).

**Table 2: Results of factor analysis and reliability tests**

Items	Question	Factor loading
Perceived pharmacist's advising (AV) (Cronbach's alpha = 0.824; CR = 0.828; AVE = 0.591)		
AV1	Pharmacists consultant are enthusiastic.	0.677
AV2	Pharmacists are always focused during counseling.	0.676
AV3	Pharmacists fully explained consumer health problems.	0.783
AV4	Pharmacists are very enthusiastic about guiding the consumer on how to treat the disease.	0.700
AV5	Pharmacists help consumer remember consultation issues.	0.664
Perceived pharmacist's professional competence (PC) (Cronbach's alpha = 0.897; CR = 0.887; AVE = 0.611)		
PC1	Pharmacists give complete instructions about side effects of drugs.	0.750
PC2	Pharmacists offer advice on maintaining and caring for health.	0.848
PC3	Pharmacists instruct to take the time to take the medication carefully.	0.824
PC4	Pharmacists do not use many professional words to make consumer difficult to understand.	0.742
PC5	Pharmacists have enough expertise to answer consumer questions.	0.832
Perceived pharmacist's listening (LS) (Cronbach's alpha = 0.813; CR = 0.815; AVE = 0.525)		
LS1	Pharmacists are willing to listen to all the questions of the consumer.	0.660
LS2	Pharmacists do not interrupt the words of the consumer.	0.687
LS3	Pharmacists always listen to the consumer, without writing, to leave his own work.	0.772

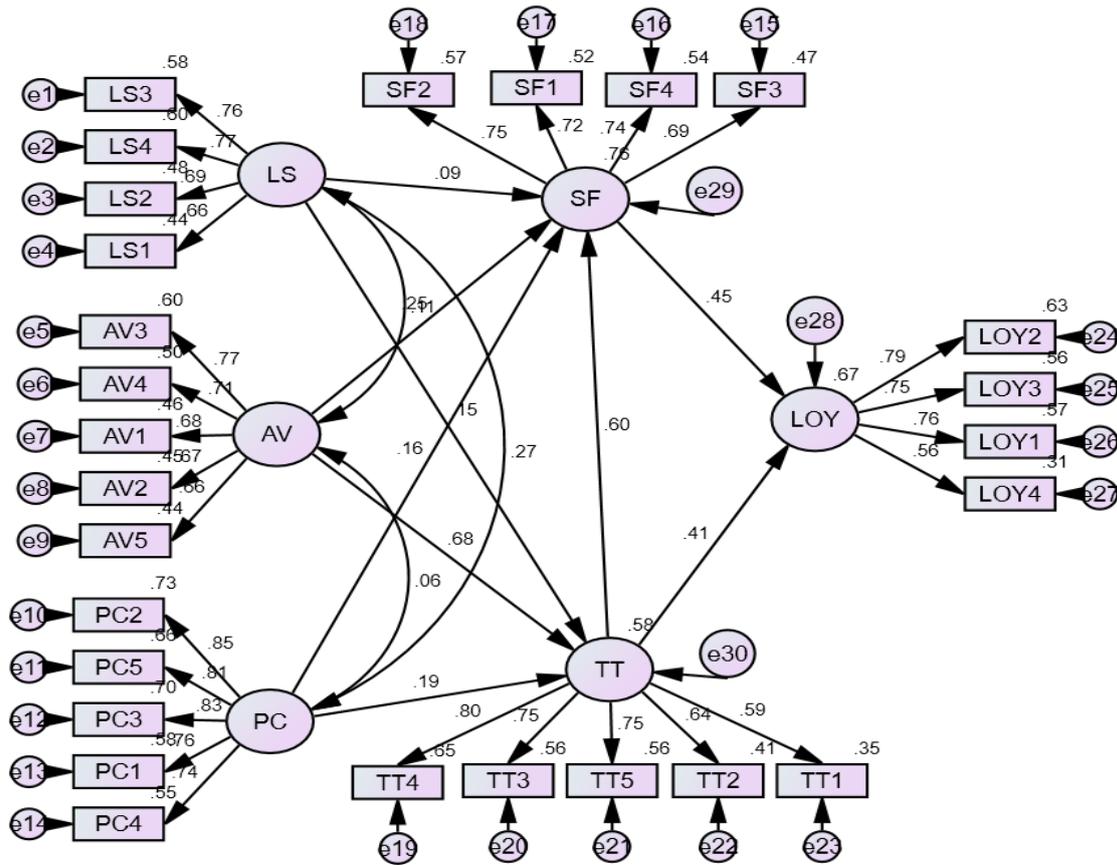
Items	Question	Factor loading
LS4	Pharmacists always listen to the opinions of the consumer	0.768
Consumer trust (TT) (Cronbach's alpha = 0.830; CR = 0.833; AVE = 0.503)		
TT1	Pharmacists are a reputable person in the work.	0.594
TT2	Pharmacists are thorough, careful people.	0.623
TT3	Pharmacists always bring to consumer a feeling of trust and persuasion.	0.771
TT4	Pharmacists always bring to consumer feeling to be concerned and directed to health.	0.805
TT5	I always believe in the treatment of pharmacists.	0.726
Consumer satisfaction (SF) (Cronbach's alpha = 0.815, CR = 0.814, AVE = 0.524)		
SF1	I am satisfied with the listening to pharmacists.	0.732
SF2	I am satisfied with the advice of pharmacists.	0.746
SF3	I am satisfied with the professional competence of pharmacists.	0.697
SF4	I trust pharmacists.	0.720
Consumer loyalty (LT) (Cronbach's alpha = 0.806, C.R = 0.810, AVE = 0.519)		
LT1	I will continue to return to the pharmacy in the future.	0.736
LT2	I will introduce others to the pharmacy.	0.816
LT3	I will prioritize this pharmacy whether your friends recommend a better pharmacy.	0.740
LT4	This pharmacy is always the first choice.	0.570

The average variance extracted for each construct is at 0.503 or higher, exceeding the 0.5 benchmarks, which refers to the discriminate validity is adequate (Fornell & Larcker, 1981). In addition, discriminate validity is confirmed if the diagonal elements are significantly higher than the off-diagonal values in the corresponding rows and columns. The diagonal elements are the square root of the AVE score for each construct (see Table 2).

### *Hypothesis Testing*

The estimation results in Table 3 showed that the model was valid and reliable: Chi-square = 479.436, df = 312, P = 0.000 (<0.05) was still acceptable due to the large sample size, Chi-square/df = 1.537, GFI = 0.903, TLI = 0.954, CFI = 0.959, RMSEA = 0.041 (Hair et al., 2010; Kline, 2015) and can be used to test the relationship has raised expectation and assumptions in the model.

**Figure 1: Structural equation modelling**



Critical ratio (C.R.) and P value were used to test the significance of hypotheses. C.R should be greater than 1.960 based on the significance level of 0.05. Table 3 shows the path coefficients along with their bootstrap values, and C.R.

SEM indicated that “perceived pharmacist’s listening” was associated positively and significantly with both “consumer satisfaction” (the standardized path coefficient of (H) = 0.104, P < 0.10), as well as “consumer trust” (the standardized path coefficient of (H) = 0.149, P < 0.01). At the same time, “perceived pharmacist’s advising” was associated positively and significantly with “consumer satisfaction” (the standardized path coefficient of (H) = 0.263, P < 0.01), and “consumer trust” (the standardized path coefficient of (H) = 0.640, P < 0.01). “Perceived pharmacist’s professional competence” was associated positively and significantly with “consumer satisfaction” (the standardized path coefficient of (H) = 0.146, P < 0.01), as well as “consumer trust” (the standardized path coefficient of (H) = 0.159, P < 0.01). “Consumer trust” was associated positively and significantly with “consumer satisfaction” (the standardized path coefficient of (H) = 0.676, P < 0.01), as well as “consumer loyalty” (the standardized path coefficient of (H) = 0.512, P < 0.01). And “Consumer satisfaction” was associated positively and significantly with “consumer loyalty” (the standardized path coefficient of (H) = 0.497, P < 0.01).

**Table 3: Results of testing SEM hypothesis**

Relationship	ML	SE	CR	P	Results
Perceived pharmacist's listening → consumer satisfaction (H1)	0.104	0.055	1.895	0.058	Supported
Perceived pharmacist's listening → consumer trust (H2)	0.149	0.054	2.778	0.005	Supported
Perceived pharmacist's advising → consumer satisfaction (H3)	0.263	0.084	3.116	0.002	Supported
Perceived pharmacist's advising → consumer trust (H4)	0.640	0.075	8.477	***	Supported
Perceived pharmacist's professional competence → consumer satisfaction (H5)	0.146	0.046	3.177	0.001	Supported
Perceived pharmacist's professional competence → consumer trust (H6)	0.159	0.044	3.610	***	Supported
Consumer trust → Consumer satisfaction (H7)	0.676	0.108	6.234	***	Supported
Consumer trust → Consumer loyalty (H8)	0.512	0.154	3.320	***	Supported
Consumer satisfaction → consumer loyalty (H9)	0.497	0.136	3.653	***	Supported

In this study, 500 times analyzed by the Bootstrap method was conducted in order to test the stability of the estimates for the parameters. The results show that the difference from the initial estimate method does not have a significant difference compared to the estimates by bootstrap methods. All the difference in the estimates is not significant statistically. Therefore, the model estimates of reliability are guaranteed for the verification of model assumptions in this research.

**Table 4: Showing path coefficients along with their bootstrap values, C.R**

Relationship	Estimate	Mean	SE-SE	S.E	C.R
H1 Perceived pharmacist's listening → consumer satisfaction	0.095	0.089	0.001	0.047	-3.000
H2 Perceived pharmacist's listening → consumer trust	0.154	0.152	0.002	0.054	0.670
H3 Perceived pharmacist's advising → consumer satisfaction	0.248	0.242	0.003	0.094	-1.500
H4 Perceived pharmacist's advising → consumer trust	0.684	0.687	0.002	0.057	-0.67
H5 Perceived pharmacist's professional competence → consumer satisfaction	0.151	0.151	0.002	0.051	-2.500
H6 Perceived pharmacist's professional competence → consumer trust	0.192	0.192	0.002	0.053	0.000
H7 Consumer trust → Consumer satisfaction	0.596	0.603	0.003	0.098	1.750
H8 Consumer trust → Consumer loyalty	0.406	0.407	0.007	0.231	0.100
H9 Consumer satisfaction → consumer loyalty	0.447	0.443	0.007	0.253	-0.360

Competitiveness of any drugstore as of any other business depends on customer loyalty. Customer loyalty develops through the efforts of pharmacies to be helpful. Compared to most previous research works cited in the literature review, based on an integration model which contains most of the crucial variables, the structural equation modeling affirmed the role of pharmacist interaction behavior to consumer loyalty in pharmacy in Vietnam. Consumer loyalty is based mainly on trust and satisfaction. Consumer trust and satisfaction can be reinforced by certain comforting factors as the perceived pharmacist's listening, perceived pharmacist's listening, and perceived pharmacist's professional competence of pharmacist.

## **5. Conclusion**

As the competition in the pharmaceutical industry in Vietnam becoming more intense, building collaborative relationships with patients, physicians, and other stakeholders are the key to sustain demand for pharmacy services on a long-term basis. Basic of a convenient sample of 327 consumers in Ho Chi Minh City and Dong Nai province in Vietnam, the results of structural equation modelling indicate that pharmacist's interaction behavior include perceived pharmacist's listening, perceived pharmacist's listening, perceived pharmacist's professional competence of pharmacist have significant impact on customer loyalty with the role of consumer trust moderation and consumer satisfaction in pharmacies. Demographic variables such as age, gender, income, race, and education level on purchase behavior and customer loyalty are not included into the model as control variables directly in order to focus on considering the role of pharmacist interaction behavior factors to customer loyalty. Future researches could consider these factors as control variables affecting consumer loyalty, or controlling the pharmacist's perceived behavior in the provision of a more comprehensive model.

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# **A STUDY ON IMPACTS OF STATE-OWN INVESTMENT ON SOCIAL INFRASTRUCTURE IN NORTHWESTERN VIETNAM**

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## **Abstract**

*The Northwest region is a difficult area of the whole country, although it is invested from the budget with a large capital. This fact stems from the characteristics of topography and low starting point in socio-economic development as well as the effectiveness of state-owned investment in the Northwestern area is still limited, low social spillover. The data used in this study consists of 2 parts: secondary data from the General Statistics Office of Vietnam and reports from the provincial authorities in the Northwest Region. In addition, primary data from the authors' survey is also used to analyze the impacts of social infrastructure investment based on the perceptions of beneficiaries. The main findings from this study include: Spillover effects from investment in social infrastructure are not commensurate with investment resources; The contribution of social infrastructure investment to social aspects remains unsustainable.*

**Key words:** *Investment, social impact, state-own investment, social infrastructure*

## **1. Introduction**

Two economists Paul Samuelson and William Nordhaus argue that investment is a sacrifice of present consumption to increase future production due to an expansion in capital stock. Investment includes tangible capital (factories, machines...), invisible capital (intellectuals, labor force...). Social infrastructure is a

combination of facilities, places, spaces, programs, projects, services and networks that maintain and improve living standards and quality of life in the community.

More specifically, social infrastructure includes housing, scientific facilities, schools, hospitals, cultural and sports facilities... and equipment in sync with them. This is an essential condition to serve and improve the living standards of the local citizens, fostering and developing human resources in accordance with the process of industrialization and modernization of each country. Thus, social infrastructure is a collection of a number of sectors with a nature of social services meeting basic needs of human beings. The products they create show up in the form of services and are often public, linked to human development both physically and mentally.

Infrastructure investment tends to be large, costly and long-term so that the private sector cannot sustain them. Therefore, the government will play an important role in planning, delivering infrastructure through public investment (Aghion et al., 2013). However, in recent years, public-private cooperation initiatives have been built to sustain and finance large projects such as new demand and technology among rich countries while poor countries in the Global South are frequently in lack of investment to afford high demands of public infrastructure, particularly roads and schools. The private sector and multilateral organizations can also play a role in providing valuable supervision and technical expertise to these infrastructure projects, forming an important component to successful completion.

Calderon, Moral-Benito and Serven (2011) conducted an empirical assessment of the long-term output elasticity of infrastructure covering 88 countries between 1960 and 2000. By correlating GDP with human capital, physical capital, and infrastructure measurement, they indicated that output elasticity of infrastructure is statistically significant ranging from 0.07 to 0.10. Similarly, Canning and Bennethen (2000) used panel data from 62 countries during the 1960-1990 period. By achieving a constant return to scale, the output elasticity of the public physical infrastructure is measured at 0.09 for road and power, respectively.

In the case of Vietnam, the Northwestern region accounts for a relatively high proportion of public investment with the aim to tackle the developmental issues such as hunger and extreme poverty, high drop-out rate, poor access to healthcare system, low quality of cultural and social facilities. However, the social impacts of this type of investment are the big question for policy makers and local authorities.

### ***Research Methodology***

In this study, the authors used literature review as one of the main methods coordinating with qualitative analysis to study the impacts of social infrastructure investment on social aspects of the Northwest Region. The data used in this study

consists of two types: (i) Primary data from surveying people in the Northwest on the impact of investment in social infrastructure on their access to basic needs including education, healthcare, cultural activities... Further, authors attempted to engage some local citizens for in-depth interviews to explore deep insights into social impacts of public investment on community life; (ii) Secondary data from the 2017 Yearbook and the reports on socio-economic infrastructure investment of the Northwest of Vietnam provided by local authorities.

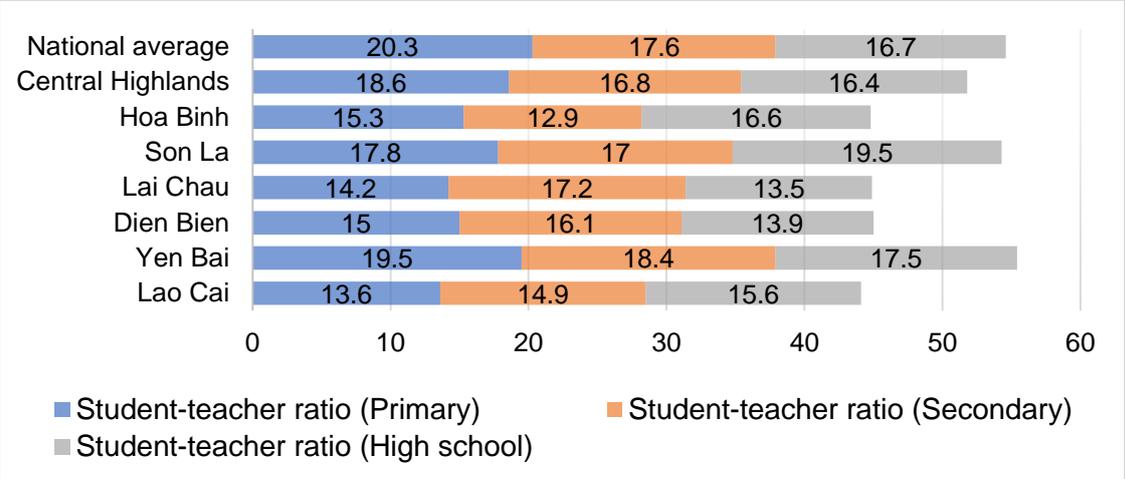
**2. Research results and discussion**

*Improved but unsustainable access to education at all levels*

Education in the Northwest is closely correlated with the characteristics of the terrain and population distribution of the region. Provinces in the Northwest are all mountainous provinces with complex and difficult terrain. Therefore, investing in infrastructure development in education in the Northwest region is more difficult than the national average.

**Figure 1: Student-teacher Ratio among Northwestern Provinces**

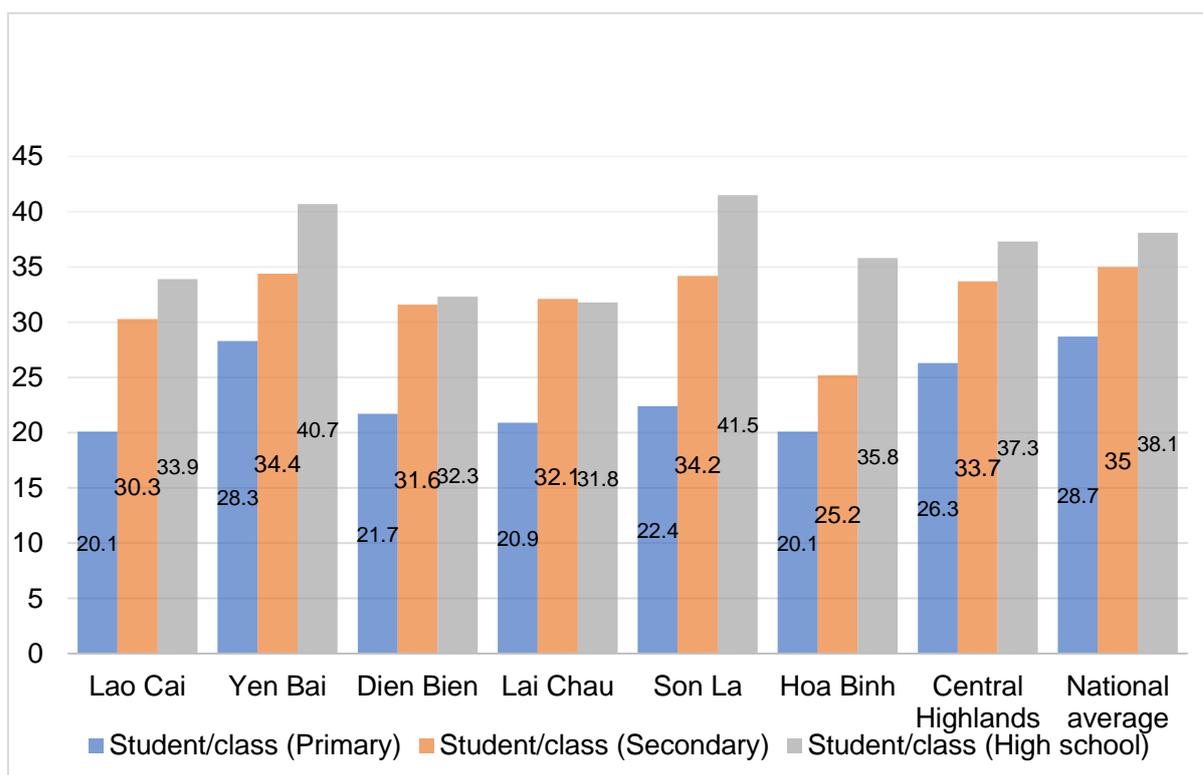
*Unit: %*



*Source: Yearbook of GSO, 2017 and socio-economic yearly reports of Northwestern provinces*

The results of public investment in educational infrastructure represent mainly in the increase of schools, classes and conditions to ensure the teaching - learning process of teachers and students. Figure 1 shows three main indicators, including the proportion of student/teacher in primary, secondary and high school levels. It can be seen that this ratio at all 3 levels is 'more ideal' than the common level of the whole country and the Central Highlands, despite the difficulty of topography and education in the remote and mountainous areas where majority of ethnic groups live.

**Figure 2: The Number of Student in each Class in Northern Vietnam**



*Source: Yearbook of GSO, 2017 and socio-economic yearly reports of Northwestern provinces*

Similar to the student / teacher ratio, the percentage of students in a classroom in the Northwest region is quite small. The low number of students in the classroom can help teaching - learning better. This rate is lower in the Northwest than the national average and the Central Highlands, except for Son La and Yen Bai.

This result can be explained by the current situation of educational infrastructure investment in the Northwest as follows:

- The infrastructure and classrooms continue to be invested with the planning scheme of the school and class network and the new rural construction program, especially for educational institutions in the highlands, areas with extremely difficult socio-economic conditions, boarding and semi-boarding schools for ethnic minorities.

- Schools associated with tourism, business, multicultural schools in the community... have promoted advantages, achieved initial significant results, important in promoting and improving the quality of comprehensive education, management innovation, educational methods in the spirit of fundamental reform of education comprehensively; proactively and actively studying and directing activities of approaching the reform of the general education program (Lao Cai)

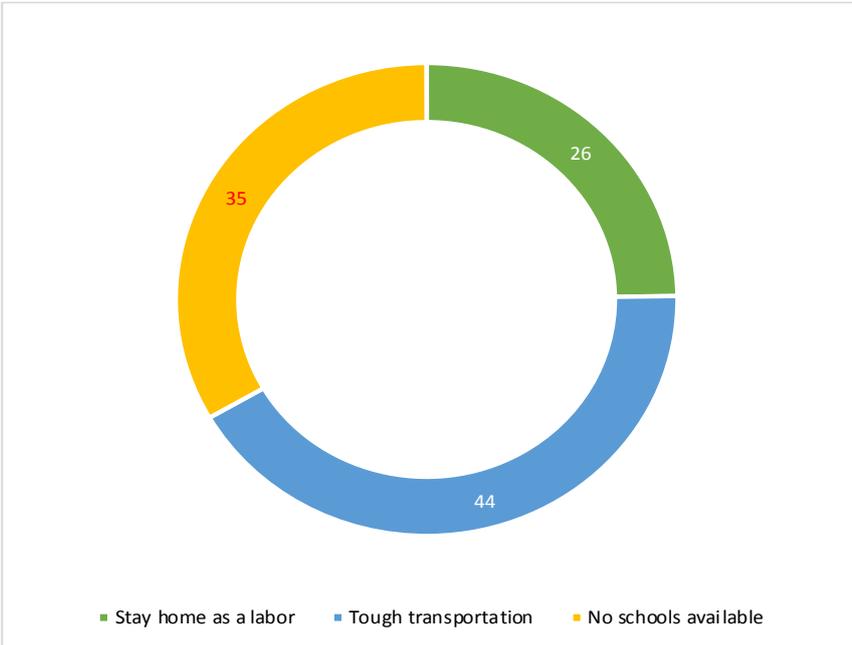
- Scale and system of school networks are increasingly expanding to residential areas, meeting the learning needs of children in ethnic minority areas of

the province. All communes have preschools, primary and secondary schools; districts and cities all have high schools, vocational education and regular educational centers. Education and training continue to receive the attention of the whole economy; the network of schools and classrooms continues to be expanded.

▪ Consolidating investment in schools and classrooms: Although the concretization rate varies among the Northwestern provinces, the results show positive signs. Specifically: The school consolidation rate reached 57.8% (Dien Bien); 59.1% (Son La); 83.7% (Hoa Binh); 62.8% (Lao Cai) ...

**Figure 3: Main reasons for limited access to schooling**

*Unit: %*



The education of the Northwest region is particularly concerned because it is the region with the highest concentration of ethnic minorities in the country with high illiteracy and dropout rates as well as low enrollment rates. Despite the fact that the size of a student class, the student / teacher ratio is good compared to the national level and many other regions but that only reflects a minimal part of the impact of education infrastructure investment. The reason for the difficulty in access to education is evident in the results of the survey. 26% of respondents said that they need to stay home as family labor and 30% revealed the lack of schools nearby. As a result, these causes became a tough barrier for education access at the high school level. Meanwhile, 44% of respondents said that transport infrastructure that is not convenient to move to educational institutions is one of the main causes of barriers in education. Obviously, improvement in school facilities if not accompanied by transport infrastructure from home to school, the impact will be limited according to the perceived perspective of the beneficiary of education.

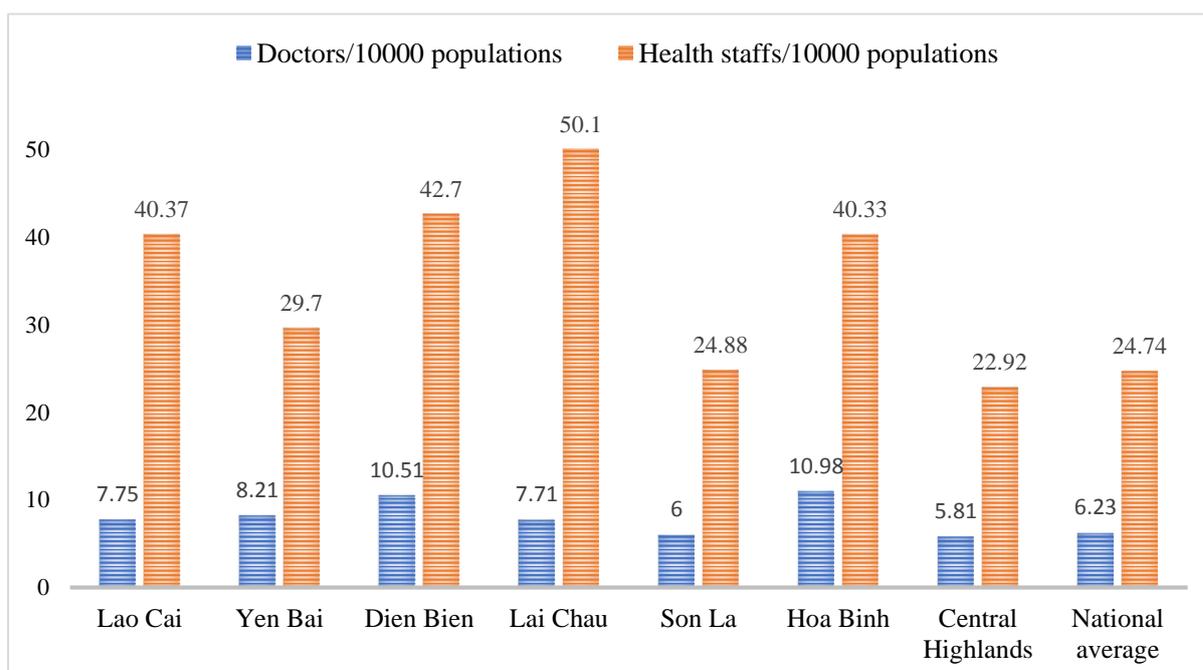
*“My home is quite far from school, in particular high school. It often takes me 2 hours to get to school by bike because the road quality is poor. I was born in a so poor family that my parents cannot afford relatively expensive school fee in private educational institution. That is why I have to attempt to attend school with much more effort”*

Song Pao Mua, aged 17, Son La

### *Uneven results in healthcare*

Considering the common level of the whole country on the community-based healthcare system, the Northwestern region is the top priority area to focus on with higher level of development investment because there are many extremely difficult communes. In parallel with this fact, investment capital sources not only focus on capital from the state budget but also other sources.

**Figure 4: Staffs in Healthcare System among Northwestern Provinces**

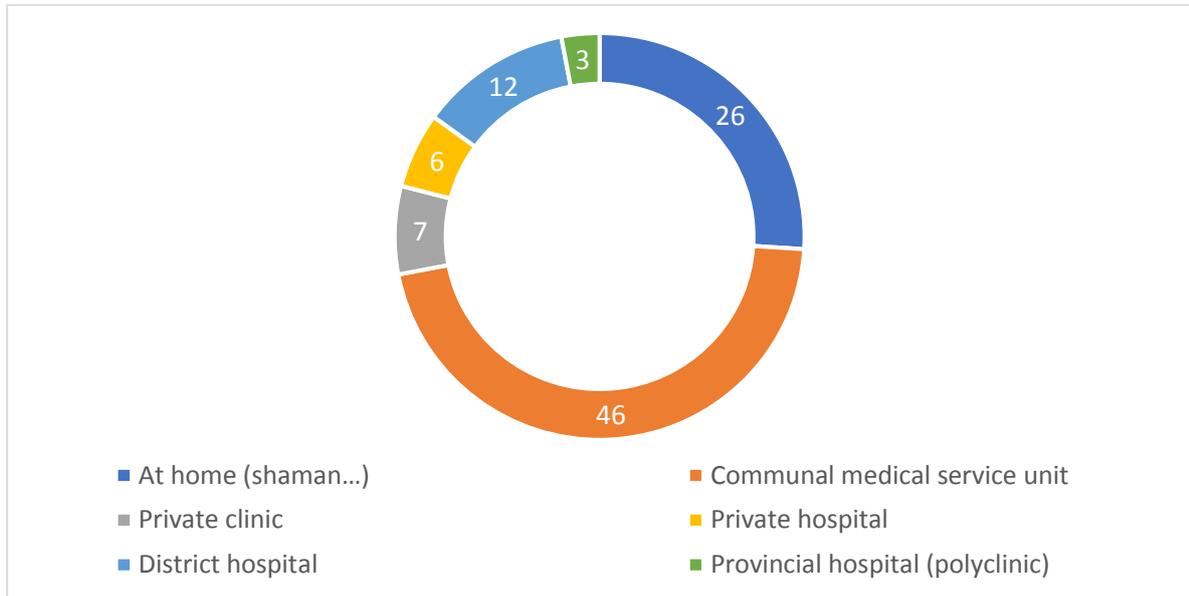


*Source: Yearbook of GSO, 2017 and socio-economic yearly reports of Northwestern provinces*

In terms of proportion, the ratio of doctors per 10,000 people and the proportion of health staffs per 10,000 people in the Northwest is much better than the national average and the Central Highlands. The proportion of doctors per 10,000 people in the Northwest reaches nearly 38 while this rate is only around 25 (nationwide), and 22 (Central Highlands). Meanwhile, the proportion of health staffs per 10,000 people in the Northwest is 8.52, higher than the Central Highlands (5.81) and the national average (6.23).

**Figure 5: Medical Treatment Facilities Accessed by Local Citizens**

Unit: %



Prominent in the survey results of people on medical examination and treatment at health facilities is a group of communal health treatment and traditional remedies. In particular, the role of commune health centers has been confirmed with the proportion of 46% of people who regularly go to medical centers when they have health issues. This demonstrates the positive role of commune-level health care for people. However, 26% of people surveyed said they still use traditional healing methods from healers and wizards. The role of private and district hospitals is quite minimal. This result comes from the fact that long distance as well as transport infrastructure are still difficult to solve, so a few people use this type of medical examination at district level or higher.

Another result is also noteworthy that among those who do not seek medical care at official health facilities, up to 50% are self-treated at home with experience, 25% used advice and medical assistance is not clear enough to help them seek medical or treatment facilities. The point is that there has not a home-based health facility and high medical examination and treatment fees appear in 20% and 5% of the respondents in the group who are not treated at the medical facility.

#### *Development of tourism, sport and cultural values*

According to the General Department of Tourism, the Northwest region possesses a great potential of tourism with great nature, unique culture and legendary history. Naturally endowed with a majestic beauty, unique in terrain, climate, geology, landscapes and ecosystems, the Northwest is a special tourist attraction. Northwest with Fansipan summit is called the summit of Indochina, is the desire to

conquer by many people; Sapa Town in clouds with cool year-round climate; national landscapes Mu Cang Chai; The vast Pa Khoang Lake is located in the middle of a majestic natural landscape with rich vegetation and mild climate; Muong Phang forest is one of national nature reserves with many rare and precious animals and plants of Dien Bien province; Mai Chau valley is peaceful with the colors of plants, rice fields and interspersed with small houses; Moc Chau plateau is large and beautiful with many flowers blooming in the Northwest mountains such as flowers, plum blossoms, cherry blossoms... The beauty of the mountains and the Northwest culture always urges travelers away from vibrant cities to reach the open, majestic, peaceful and mysterious heavenly land.

Along with the advantages of landscape, traditional culture of ethnic groups is also a highlight in the Northwest tourism resources. The Northwest is home to many ethnic groups such as Tay, Nung, Thai, Muong, Mong, Dao, Kinh, Hoa, Kho Mu, Lao, Lu, Ha Nhi, Khang, La Hu, Si La, Phu La and Bo Y, Mang, Giay, Xo Dang, Lo Lo, Pa Tag, Phu La, Co Lao, La Chi... with a large and rich cultural space. Many ethnic groups still keep intact with their traditional cultural identity in customs, practices, festivals, costumes, musical instruments, folk songs and dances such as the Long Tong festival, Khau Vai love market, Then singing, Pi Cap music instrument ... or in community behavior, housing architecture, village markets... Northwest cuisine has its own characteristics and differences. Compared to other regions with chicken, broiled fish, buffalo skin mannequin, buffalo meat and kitchen, Thang Co ...

The result of cultural - sports - tourism group in the Northwest region is considered a bright spot. In the period 2011 - 2017, the cultural infrastructure, sports and tourism in the province were paid attention to, so that the cultural, sports and tourism infrastructure of the provinces have developed, facilitating the organization of provincial, regional and national scale cultural, sports and tourism activities to attract domestic and foreign tourists, contributing to improving the spiritual life for ethnic people in the province.

Many cultural works were built with typical high investment rates such as: Provincial Sports Training and Competition Center; Provincial multi-purpose stadium; Provincial stadium; Provincial multi-cultural house; Provincial Museum House; Provincial Exhibition and Information Center ... with a total investment of VND 800 billion in Lao Cai for Northwestern National Tourism Year (2017) (Lao Cai); Lai Chau has a significant improvement in tourism infrastructure, so far the province has 6 provincial tourist centers. The number of domestic and international tourists coming to the province has increased continuously, about 240 thousand people (2017) increased by 2.35 times compared to 2011.

### **3. Conclusion and policy implications**

Based on the results of the analysis of impacts of social infrastructure investment in the Northwestern Region on education, health, culture, sports and tourism, this study shows that spillover effect of public investment in social aspect is not commensurate with investment resources; The contribution of social infrastructure investment to social aspects remains unsustainable. This is reflected by first, the quality of investment projects is not guaranteed; secondly, the spreading effect on the beneficiary's life is limited based people's perception. In addition, this impact is not even making a large gap between the provinces in the Northwest Region.

The policy implications drawn from the results of this study include (1) Improve the quality of socio-economic development planning and develop an overall investment strategy; (2) Investment decentralization needs to comply strictly with the law and according to the principle of decentralization; (3) Increase investment in science and technology and develop human resources.

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# THE EFFECT OF HUMAN RESOURCE MANAGEMENT AND OTHER FACTORS TO INCOME DIFFERENCES IN SOEs IN VIETNAM

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## **Abstract**

*This paper utilizes labor force survey to explore the effect of human resource management and non-human resource management factors on income differences in SOEs in Vietnam. Employing multivariate regression method, this paper find out that income differences is existed in Vietnam SOEs and its origins could be come from professional skill level, experience and hours of working at micro level; at macro level income differences in Vietnam SOEs might come from the inefficient implementation of government policy. The policy implications from this study are: (i) government should focus on training labor skills; (ii) government should perform their best on labor policy implementation.*

**Key words:** *income differences, human resource management, SOE, Vietnam*

**JEL codes:** *D63, J31*

## **1. Introduction**

This paper aims to find out the existence of income differences in Vietnam SOEs and then explains the relationship between income differences among employees who are working for SOEs in Vietnam in selected industries<sup>1</sup> and its influenced factors grouped as HRM factors, and non-HRM factors. Therefore, survey data on Labor force conducted by Vietnam General Statistics Office in various years has been utilized in order to achieve the chapter's goals due to its scope and relevant variables to this study. The survey includes all industries and types of companies, so a sub-sample, which is focused in SOEs, will be extracted from the survey.

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<sup>1</sup> Industries are selected based on the significant of income differences and number of observations.

This paper is organized in four main sections excluding introduction and conclusion sections. The model is presented in the section 2 where the author presents the theoretical and empirical models that will be used for empirical analysis. Section 3 will present some general statistical information of the sample used for the study. The next section will show the empirical results where the author explains the relationship between HRM and non-HRM factors and income differences in Vietnam SOEs in year 2007, 2012 and 2013. Section 5 will demonstrate further discussions draw from the empirical analysis.

## **2. Literature Review**

Checchi and García-Peñalosa (2008) propose that influences of institutions on income differences can be revised with different aspects such as legislation, tax, minimum wage and employees' benefits, union intervention. Regarding to impacts of legislation, minimum wage and unemployment benefits policies on income distribution there are numerous researches on these themes. Stiglitz (2010) points out that government policy might cause changes in income distribution. He argues the policies implemented to stop the effects of the recession, such as the enormous rescue packages offered by the United States government to a number of financial institutions and industries, may cause even more income structures if financed by public deficit which will later oblige the government to increase tax rates. Checchi & García-Peñalosa (2008, p.608), examines relations of employment protection legislation on employees' wage. He claims that 'employment protection legislation reduces the risk of job loss and shifts reallocation costs from workers to employers. As a result, employers refrain from firing in downturns but also from hiring in booms and hence the overall effect on wages and employment is ambiguous. Similarly, a minimum wage need not reduce employment, which is determined by average wages; in addition, it may also reduce the monopolistic power of firms, thus raising employment among low-wage earners.

There have been conflicts in findings on the relations between institutions and income differences in current literature. Nickell, Nunziata and Ochel (2005) and Bassanini and Duval (2006) find no statistical effect for employment protection legislation, while Bertola *et al.* (2002) obtain a positive and significant impact on unemployment. Union density has no significant effect, while both Nickell *et al.* and Bassanini and Duval find that greater wage coordination reduces unemployment. Moreover, the overall explanatory power of institutions is substantial, with LMIs explaining about 55% of changes in unemployment within countries, according to Nickell *et al.* Furthermore, Kerr and Kugler (2007) find that employment protection legislation reduces employment flows, while Lee (1999) provides evidence that changes in the minimum wage were responsible for part of the increase in wage

dispersion observed in the US during the 1980s (Checchi & García-Peñalosa, 2008 cited Kugler (2007) & Lee (1999) ). Reasons that explain this situation is empirical works have been taken on different contexts. The evidence indicates that more democratic countries, better law enforcement and greater financial development are associated with a more equal distribution of income, while a more segmented labour market is correlated with greater inequality (Barro (2000), Bourguignon and Morrisson (1998) and Li, Squire and Zou (1998)).

Income differences has been investigated in the relationship with compensation at policy and practice level. At the policy level, these researches focus on investigating how minimum wage policies, labour law, health insurance policies and layoff legislation affect wages, benefits and employment (Werner & Ward 2004). However, most of the studies concentrate on effects of these above factors on wage and ignore their impacts on other components of compensation such as bonuses and benefits. Gerhart and Rynes (2003) claim that this literature gap is common and more research on other aspects of compensation would be expected.

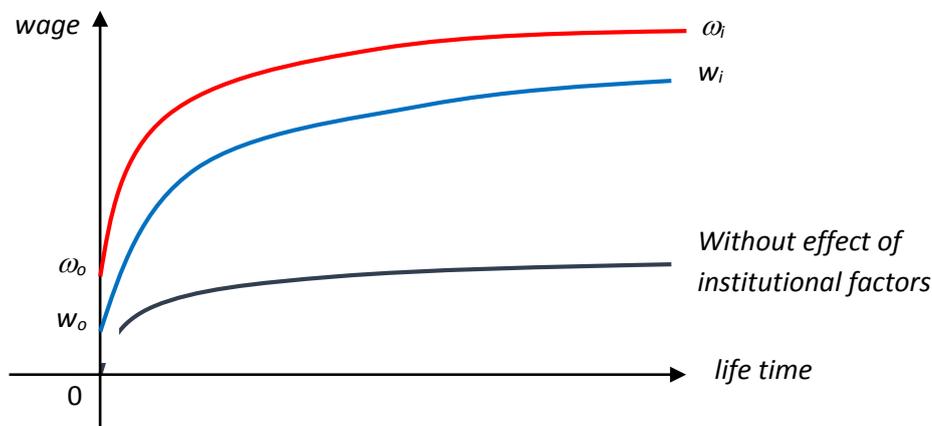
At practical level, compensation involves in wage dispersion in two major aspects: unionization and implementation of new HRM strategies of employers. Unions have aimed at a stabilization of wage within and among employers in order to enhance the cohesion of their bargaining units, to reduce labour-cost competition among employers and to narrow supervisors' scope for adjusting wages in an unfair or arbitrary manner (Freeman 1980). HRM models employ internal productivity-related incentives for workers, such as individual or group bonuses, merit-based raises and profit-sharing plans, any of which could raise wage dispersion directly. In addition, the absence of unionization may allow employers to use internal wage levels as a competitive device, which could raise internal wage variation (Groschen 1993). In most cases, new HRM strategies seek to reduce costs of firms.

There have been various studies of wage gaps under the view of HRM, such as gender and wage gaps, individual determinants and wage structure, individual outcome of compensation and performance at work and pay equity and job satisfaction (Werner & Ward 2004). Werner and Ward (2004) state that factors related to HRM practices conciliating relationships between gender and wage gap are family background, education, affirmative action, training, mentoring and negotiation skills. However, these contents are segmented in many studies and almost these researches look at only employees' wage rather than cover other aspects of compensation such as bonuses, awards and benefits. Gerhart and Rynes (2003) question if the other components of compensation are influenced by gender and race and it needs to call for more complex models to examine not only wage gap but also nonwage compensation gap.

### 3. Model

Actual labor income from their salary of wage package is defined as  $w_i$ , or could be seen as competitive income, and their market income could be  $\omega_i$ ;  $w_i = \lambda_i \omega_i$  – where  $\lambda_i$  is represented for the effect of institutional factors such as member of trade union or minimum wage. Institutional factors help to raise the actual income from salary or wage packet closer to the market income. In fact, if labor market is purely free market, actual wage will equal to potential income and  $\lambda_i$  will equal to 1. However, employers usually offer salary package lower than the market income. Indeed, without the intervention of government, employers might apply a very low wage scheme to employees. This situation can be captured in the following graph:

**Figure 1. Labour income from wage or salary package**



To estimate the effects of HRM and non-HRM factors to income differences in SOEs in Vietnam recently, we apply the following econometric model at individual level based on suggestion of Katz (1998) and Schultz (1951) among others:

$$\mathbf{R}_{i,j,t} = \gamma_0 + \gamma_m(\mathbf{HRM\ variables})_{i,j,t} + \epsilon_{i,j,t} \quad (1)$$

$$\mathbf{R}_{i,j,t} = \alpha_0 + \alpha_m(\mathbf{HRM\ variables})_{i,j,t} + \beta_n(\mathbf{Non\_HRM\ variables})_{i,j,t} + \mathbf{u}_{i,j,t} \quad (2)$$

$\mathbf{R}_{i,j,t}$ : Ratio of actual income of individual  $i$  in industry  $j$  at the time  $t$  to mean income of industry  $j$  at the time  $t$ ;

**HRM variables** $_{i,j,t}$ : This is a set of HRM variables including labours' experience, education attainment, skills – proxied by level of professional in their career path for labour  $i$  in industry  $j$  at the time  $t$  and human resource development policy of local government of province  $x$  in time  $t$ .

**(Non\_HRM variables)** $_{i,j,t}$ : This is a set capturing the non - HRM variables of labour including gender, ethnic and effect of firms' sizes.

$\alpha_0, \gamma_0$ : are constants, while  $\alpha_m, \gamma_m$ : are estimated coefficients for HRM variables;  
 $\beta_n$ : are estimated coefficients for non – HRM variables;  
 $u_{i,j,t}, \epsilon_{i,j,t}$ : are error terms.

The aim of equation (1) is to explore the relationship between HRM's variables and income differences, proxied by ratio between individual income and mean income of industry that the individual is working for. The aim of equation (2) is to explore the relationship between HRM and non-HRM variables and income differences. The two equations will provide us in-depth information about the effect of HRM's variables themselves and the effect of HRM's variables under the interaction with non-HRM's variables. Through the outcome of estimation of the equation (2), we can know more about the effect of HRM's variables on income differences. If the values of coefficients of HRM's variables do not vary significant between the two equations, we might conclude that the effects of HRM's variables are consistent and reliable. Therefore, we can base on these empirical results to draw the policy implication in the next part of the thesis. It also helps the author to figure out the limitation of the data in order to plan the next phase where the author will do some in-depth interview.

It is expected that the dataset cannot provide all information we need to know about the relationship, but it will provide a preliminary insight to this complicated relationship. Therefore, the sign of estimated coefficients is more important than their values. For example, if education has negative sign, it means that education will reduce the income differences in the context of Vietnam; so if Vietnam government wants to reduce income differences, they should encourage employees in SOEs do some further education. The other considerable example is professional skill; it might expand the income gap under the circumstances of Vietnam. Therefore, if Vietnam government wants to reduce income differences, they should implement a set of several policies that encourage employees increase their professional skills and re-distribute appropriately income between high and low professional skills employees via income tax or other instruments of compensation policy. In this thesis, however, we do not focus on analyse the effects of government policies on income differences at general meaning, but we will try our best analyse significant and relevant policies.

#### **4. Empirical results**

In this section, two empirical results of the equation (1) and equation (2) will be presented. Equation (1) is focused on only the effect of HRM variables on income differences, while equation (2) is concentrated on the effect of both HRM and non-HRM variables. The both models have been estimated separately in year 2007, 2012 and 2013 because there is no panel data for three years. Therefore, the comparison

and the trend analysis between the three years are limited. However, the value and sign of coefficients could be relied on to explain the relationship between HRM and non-HRM variables and income differences.

**Table 1. The effect of HRM variables on income differences in 2007 and 2012**

Variables	2007	2012	2013
<b>Dependent variable: Ratio between personal actual income and mean income at industrial level</b>			
Professional skill level	0.419*** (0.002)	0.454*** (0.003)	0.131*** (0.002)
Human Capital policy at provincial level	0.002** (0.001)	0.013*** (0.005)	-0.005 (0.006)
Education attainment	0.003*** (0.000)	-0.004*** (0.005)	-0.003** (0.001)
Experience	0.002*** (0.000)	0.003*** (0.000)	0.001** (0.000)
Weekly hours of working	0.002*** (0.000)	0.003*** (0.000)	0.002*** (0.000)
Social insurance	0.015** (0.007)	-0.008 (0.008)	0.096*** (0.018)
Constant	-0.248*** (0.017)	-0.290*** (0.030)	0.297*** (0.051)
Adjusted R <sup>2</sup>	0.3660	0.7106	0.6234
Observations	31,897	8355	3257
The validity of the model	Yes	Yes	Yes
BG test for heteroskedasticity	Rejected	Rejected	Rejected
Note: *, **, ***: coefficient is statistically significant at 10%, 5% and 1% respectively.			

*Source: Authors' estimation.*

As shown in table 1, the effect of each HRM variable on income differences in Vietnam's SOEs is varied significantly among 2007, 2012 and 2013. The most significant and largest effect to income differences is professional skill levels. This is true because the higher skilled labor will more likely have better jobs and better payment. In the case of Vietnam SOEs, the estimated results show us that income differences might be caused mainly by the difference in labors' professional skills. When a worker increases her professional skills by one unit, her income will likely

increase 0.42, 0.45 and 0.13 points to the mean of industrial incomes in year 2007, 2012 and 2013 respectively. The results imply that employees might compete each other's in order to have higher income by getting better on-the-job training or enrolling to the necessary courses provided by educational institutions to have new skills or knowledge.

Education does perform as a factor preventing income differences in the case of Vietnam SOEs. The coefficient of education attainment change from positive to negative signs in the regression model is a demonstration of the complex effect of education on income differences. In 2007, education could be seen as a factor of widening income differences, but in 2012 and 2013 education might act as a cause of narrowing income differences. The complex effect of education reveals the changing role of education on income differences under the circumstance of Vietnam SOEs. This result might lead us to a thinking that employee in these SOEs will compete each other in order to have permission to do further learning from their manager or boss<sup>2</sup> aiming to have better income with their new education certificate. It is fascinating that the current situation of studying of employees in SOEs is supporting this result<sup>3</sup>.

Working experience and working hours positively influence to income differences in year 2007 and 2012. Indeed, those variables' coefficients increase slightly between year 2007 and 2012. It implies the positive effect of experience and working time on the widening income differences<sup>4</sup>. The longer workers stay in the same industry the higher income they might earn; and the longer hour they work the higher income they will earn. If workers increase 1 year of experience or 1 hour per week, the ratio between individual income and mean income of industry that the individual is working for will increase about 0.002, 0.003 and 0.001 points in year 2007, 2012 and year 2013 respectively. Obviously, experience and normal working hour should not have much effect on labors in Vietnam's SOEs because their wages are paid based on their wage package level and it is regulated by Vietnam Government<sup>5</sup>. Extra working hours, on the other hand, will cause mainly the different in income

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<sup>2</sup> In case of Vietnam where hierarchy and bureaucratic system is still very strong in SOEs, obtaining an approval from manager or boss for studying is a crucial step and is not easy task for almost any cases.

<sup>3</sup> There are not official reports from Vietnam government bodies about this situation but based on the observation of the night time class at the various universities in Hanoi, Ho Chi Minh City, we can easily to understand this trend.

<sup>4</sup> This idea, under the management view, is quite different with the explanation from economics perspectives.

<sup>5</sup> In Vietnam, Vietnam government issues and amends fundamental wage every two or three years. Worker has been assigned with a wage ratio. Their wage will equal fundamental wage times wage ratio and plus some extra money due to their position and outcomes of business. For example, a beginning worker will be assigned a wage ratio 2.67 and fundamental wage is 1,000,000 VND (approximately \$55); then her wage will equal  $2.67 \times 1,000,000 \text{ VND} + \text{extra money (if applicable)} = 2,670,000 \text{ VND} + \text{extra money}$ . After several years, she will be promoted to become a leader of a team and then she has got extra ratio at 0.3, her wage ratio will be assumed at 4.05 and fundamental wage will be 1,500,000 VND; her wage will equal to  $(4.05+0.3) \times 1,500,000 + \text{extra money (if applicable)} = 6,525,000 \text{ VND} + \text{extra money}$ .

among workers. The positive sign of coefficient of working hours per week confirms this idea. The more important thing is that all workers know that when they are allowed to work extra, they will earn more money, but not all of them will have chance to work extra. It is said that, workers who have close relationship to their managers/bosses or are managers/bosses' relative may likely have more chance to work more. Unfortunately, the survey does not have any information test this idea, so we do need to do further exploration by doing in-depth interview.

Human resource development policy of provincial government affects positively to income differences of the SOEs at provincial level. The major aim of human resource development policy is to provide better on-the-job training, skills and knowledge for local labors in order to meet the needs of employers. As mention above, skills and knowledge of labors might lead to a widening of income differences, so the policy of local government is accidently widened the income gap in SOEs<sup>6</sup>. The unexpected outcome of the policy has increased between year 2007 and 2012; in year 2007 the effect of the policy on income differences is 0.002, while in year 2012 its effect is increased to 0.013. Actually, it reflects the increase of effect of professional skill level. The reflection implies to us that the current situation of income differences is widening accidently by the relevant local government policies. Therefore, it also implies that the making public policy should be aware of such side effects in order to avoid the unexpected effects in the future. Actually, the main aim of public policy in Vietnam is to support the narrowing income gap rather expanding the income differences status but making public policy without consideration of all stakeholders or all internal and external factors might lead to unexpected outcomes<sup>7</sup>. In year 2013, the effect of this variable is negative and is not statistically significant. Therefore, it is said that the effect of human development policy of provincial government is quite complicated and need to be watched closely further in the future. It is understandable that the effect of government policy will be lagged for one or two years after the time of deployment. Thus, the effect of the policy in year 2013 might be a consequence of the implementation of the policy in year 2012 or 2011<sup>8</sup>.

In the case of Vietnam's SOEs, only full-time workers have social insurance, while part-time, contracted or casual workers do not have social insurance<sup>9</sup>. Therefore,

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<sup>6</sup> The wrong doing effect of the government policy on income differences is an accident because policy making cycle has been affected badly by internal or external factors. The government is trying to eliminate the unexpected effect but sometimes the government cannot do as its desire.

<sup>7</sup> Although human resource development policy in local level is measured by firms' leader opinion, they show us the true valuation of local government policy implementation and also the making policy process. Planning public policy without thoughtful analysis will definitely lead to unexpected results. Additionally, the situation is happening in Vietnam quite often when policy makers do not wish to cooperate with researcher or to do evidence-based policy.

<sup>8</sup> The effect of this policy therefore is not for sure at the moment.

<sup>9</sup> If part-time, contracted and casual workers want to have social insurance, they have to pay themselves.

social insurance should be a positive coefficient. For year 2007, the coefficient is positive and statistically significant at 5%, while for year 2012 the coefficient is negative and statistical in-significant; in year 2013, the coefficient of the variable is not only statistical significant but also more robust than in year 2007. This implies that social insurance would be a factor that has positive contribution to income differences. However, due to the opposite signs of coefficient between the three years, it is needed to take more attention on this coefficient. Based on estimated result for social insurance in 2007 and year 2013, it is shown that the workers who have social insurance have more likely higher income than the other workers who do not have the insurance<sup>10</sup>.

Table 2 shows us the full model where the author wishes to understand the total effect of HRM and non-HRM variables on income differences in SOEs in Vietnam. Under the interaction of those variables, the coefficients of HRM variables has changed very slightly in comparison with the previous model where only HRM variables have been considered.

**Table 2. Effect of HRM and Non-HRM variables on income differences in 2007 and 2012**

Variables	2007	2012	2013
<b>Dependent variable: Ratio between personal actual income and mean income at industrial level</b>			
<i>I. HRM variables</i>			
Professional skill level	0.418*** (0.002)	0.453*** (0.003)	0.131*** (0.002)
Human Capital policy at provincial level	0.002* (0.001)	0.008 (0.005)	-0.006 (0.006)
Education attainment	0.003*** (0.000)	-0.004*** (0.000)	-0.004*** (0.001)
Experience	0.002*** (0.000)	0.003*** (0.000)	0.001* (0.000)
Weekly hours of working	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Social insurance	0.015** (0.007)	0.011 (0.010)	0.094*** (0.018)

<sup>10</sup> It could be true because only employees who have long term contracts will have social insurance. These employees have stable job than seasonal employees. Thus, full-time contracted employees will likely have more chance to earn higher income than seasonal and part-time contracted employees

Variables	2007	2012	2013
<b>II. Non – HRM variables</b>			
Gender	0.013*** (0.003)	-0.011* (0.006)	0.011 (0.010)
Ethnicity	-0.003 (0.006)	-0.038*** (0.009)	0.044** (0.019)
Working for large company	0.036*** (0.007)	0.056** (0.024)	NA
Working for medium company	0.023*** (0.005)	0.016 (0.026)	NA
Constant	-0.285*** (0.020)	-0.234*** (0.044)	0.272*** (0.051)
Adjusted R <sup>2</sup>	0.6345	0.7115	0.6240
Observations	31,879	8355	3257
The validity of the model	Yes	Yes	Yes
BG test for heteroskedasticity	Rejected	Rejected	Rejected
Note: *, ** and ***: Coefficient is statistically significant at 10%, 5% and 1% respectively.			
In year 2013, the survey does not have any information about the size of enterprises.			

*Source: Authors' estimation.*

The effect of professional skill level on income differences has been confirmed in the full model where the coefficient is statistically significant in year 2007, 2012 and 2013. The coefficient increases from 0.418 in year 2007 to 0.453 in year 2012 and then reduces to 0.13 in year 2013. Skills are increasing during the time period and then income differences is also widening under the effect of professional skill level in the same time. Professional skills are very important for earning income and there is no doubt that high skill workers will likely have more chance to achieve better pay than the other. The reduction of the value of this coefficient in year 2013 in comparison with year 2007 and 2012 implies that the importance of professional skills on income differences in year 2013 may be less than in previous two years. The sign of the coefficient, however, is remained the same for three years 2007, 2012 and 2013. Additionally, the important underlying idea here is that the government should have some more sound policies to reduce income gap between high and low skilled labors.

Education has the same effect sign in the full model in comparison with the previous model. In year 2007, education attainment contributes positively to income differences, while in year 2012 and 2013 education attainment have negative effect to income differences. In year 2007, education seems to support the widening of income gap, while in 2012 and 2013 education could be seen as a factor closing the gap of income between skilled labors. Explaining the effect of education is not an easy task because education is here only an expression of quantity of education – years of schooling; information of the quality of education of employees and the quality of educational institutions do not available in this survey. It is hard to say simply that education will help to reduce or increase income differences because the effect of education to income differences needs to be placed in specific conditions. For example, a well-educated worker can work well in a plumber company but might be a bad worker in a chemical company. Therefore, education in the form of on-the-job training or further education would be good suggestions to reduce the gap of income differences in Vietnam SOEs.

Effect of experience and hours of working on income differences in the full model do not change much in comparison with the previous model. The value of coefficients of experience and weekly working hour show us that better experience and longer hour will lead to higher income and then the ratio between personal income and mean income of industry will be widened. The value of coefficient of experience allows us to conclude that experience of workers in SOEs in Vietnam is supporting the expansion of income differences. Additionally, the length of working hours also supports the increase of income differences. The one more year of experience will likely increase 0.002, 0.003 and 0.001 points of ratio between actual personal income and mean income of industry in year 2007, 2012 and 2013 respectively. The one more working hour per week will likely help workers' incomes escaping further from the mean income of industry by 0.002 points in year 2007, 2012 and 2013.

The effect of social insurance variable in year 2007, 2012 and 2013 are positive. It confirms our expectation that social insurance may contribute positively to income differences in the case of Vietnam SOEs. It reflects the fact that only long term full-time contracted workers have social insurance, while the other types of contracted workers such as seasonal or part-time workers do not have social insurance. In addition, long term full-time contracted workers have stable job and enjoy the employment cycle.

Among non-HRM variables, working for large company and working for medium company are the most two critical dummy variables. Coefficients of these variables show us that workers working for large and medium scale SOEs are earning

higher than workers working for small scale SOEs. The estimated results for large scale SOEs demonstrate that workers' income in large SOEs is increasing between 2007 and 2012. Workers in these SOEs are likely earning 0.036 and 0.056 point of ratio, between personal actual income and mean of industry income, higher than the workers in small scale SOEs in year 2007 and 2012 respectively. It will lead to policy implication that the government should have a policy in order to make the income gap avoiding the effect from firms' size. Unfortunately, in year 2013 those questions were taken out the survey, so we do not have any information about this variable in order to see the development trend.

## **5. Conclusion**

In this paper these authors wish to figure out the factors affecting to income differences in Vietnam SOEs by using regression analysis. In order to achieve the goal of this paper the author utilizes the Labor force survey dataset conducted by Vietnam General Statistics Office under the technical support from International Labor Organization in Vietnam on employment in year 2007, 2012 and 2013. The results of the regression analysis are in line with the expectation of the author. Income differences is existed in Vietnam SOEs and its origins could be come from professional skill level, experience and hours of working at micro level; at macro level income differences in Vietnam SOEs might come from the inefficient implementation of government policy.

Income differences has occurred in Vietnam SOEs and the level of income differences is quite high. The source of income differences in Vietnam SOEs is somewhat different or similar to the other experience of the other countries. Vietnam SOEs have been transformed fundamentally from a central planning mechanism economy to oriented market mechanism economy. Therefore, SOEs in Vietnam have been re-organized and re-developed based on market economy, so they also have had severe problems like the other state enterprises in developed market economy such as income differences. Based on empirical result, the author find out that those factors can raise income also can raise income differences. Education, professional skills are major factors can raise income, so they are two factors can raise income differences. However, how can they raise income differences? Which processes of HRM cycle will help us to understand further this effect.

It is said that, training process is a crucial step in employment cycle, but training could be a source of income differences later if we do not have appropriate policy to against it. Training process in Vietnam SOEs is a further education after

official education and it is very important to not only employees but also the SEOs. Further training will transform theoretical knowledge to practical knowledge and on-the-job training will transform practical knowledge to professional skills. Different professional skills will enable the ability to have higher income, so income differences will occur no matter what employees want or do not want. Based on the empirical result, professional skill levels have contributed consistently to income differences in Vietnam SOEs. The value of coefficient of professional skill levels in various regression strategies has shown that under the circumstances of Vietnam SOEs professional skill levels could be a major source of income differences. Consequently, the solution to reduce income differences should be started with a step of employment cycle such as training or retaining. Focusing on training and retaining will relate to a set of other tasks such as compensation policy, promotion policy or continue training policy or transfer policy. It means that the better solution to reduce income differences is the leaders of SOEs should perform an appropriate set of policies rather than just focus only one thing.

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# HOW WILL DEMOGRAPHIC TRANSFORMATION AND 4.0 INDUSTRY INNOVATION AFFECT THE LABOR MARKET?

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## **Abstract**

*We look at the demographics, and automation, the major forces that will shape the 2020s-2040s labor market in Vietnam. The article explores the impact of aging populations and the end of plentiful labor. The baby boomer generation powered a long but temporary surge in labor force growth. Then this group is moving into retirement, and labor force growth is slowing. The occurrence of aging of the population carries a lot of negative consequences not only in the form of changes in the increase in the age structure of the population of people belonging to the oldest age categories. Since it influences aging of resources found in the labor market and also is not indifferent to pension schemes or educational system. The article also sees how will automation affect employment, labor skills and wages in the labor market.*

**Keywords:** *ageing population, aging labor force baby boomer generation, 4.0 industry*

## **1. Introduction**

The Vietnam workforce is aging rapidly. It is forecasted Vietnam labor force growth (population in the age of 15-64), will slow to 0.01% per year in the 2009-2049 (see Table 1). That major demographic shift is bringing an end to the abundance of labor since the 2010s. Thanks to longer and healthier lives, many people are working well into their 60s and beyond, but the trend toward later retirement is not likely to offset the negative effects of aging populations.

As the total size of the labor force stagnates in the labor market, the momentum for economic growth should be affected. If it does, governments will face major challenges, including surging healthcare costs, old-age pensions, and high debt levels. On the advantage side, the wages of workers in the economy should benefit from the simple economics of greater demand and lesser supply. But demographics is not the only force in motion.

The phase of 4.0 industry innovation has begun, and it will accelerate in the years ahead. Faced with a rising scarcity of labor, companies, and investors are likely to draw increasingly on automation data exchange in technologies, which, in turn, would boost productivity. But to grow, economies need sufficient demand to match rising output. It is also showed automation 4.0 industry trends are likely to push output potential far ahead of demand potential. The rapid spread of automation and cyber-physical systems, the Internet of things, cloud computing and cognitive computing may eliminate as many as 47% of current jobs in the US within the over next 20 years, according to a recent Oxford study. These include blue and white collar jobs. So far, the loss has been restricted to the blue collar variety, particularly in manufacturing, and depress wage growth for many more workers. More than half of workers in five Southeast Asian countries are at high risk of losing their jobs to automation in the next two decades, an International Labour Organization study found, with those in the garments industry particularly vulnerable. Of the 9 million people working in the region's textiles, clothing and footwear industry, 64 percent of Indonesian workers are at high risk of losing their jobs to automation, 86 percent in Vietnam, and 88 percent in Cambodia.

Automation can help close a GDP growth gap resulting from declining growth rates of working-age populations. The benefits of automation will likely flow to new employment-primarily highly compensated, highly skilled one-as well as to the owners of capital. The growing scarcity of highly skilled workers may push their incomes even higher relative to lesser-skilled workers. As a result, automation has the potential to significantly increase income inequality.

Adaptability of automation and aging trend requires agility and speed, as well as the strength to absorb sudden shocks and resilience to risk missteps and unforeseeable challenges along the way. The Leaders that should think now about shifting resources to build resilience will be better able to navigate off the coming transformation and face with increased volatility as the forces of demographics, and automation.

This paper applies the method of literature review and labor economic theory analysis to assess the impact of the demographic transition and industrial revolution 4.0 on the labor market, particularly in Vietnam. The analysis of this paper relies on nationally representative secondary data, such as data from the Population and Housing Census and the Vietnam Household Living Standards Survey, as well as from related documents.

Some key implications of results follow:

Highly skilled labor will grow increasingly scarce: The pace at which displaced workers retrain and migrate toward higher-skilled jobs will likely be too

slow to alleviate shortages. The challenge for companies will be attracting, growing and retaining highly skilled talent and maximizing worker's productivity by rethinking how their businesses are structured.

Baby boomer spending growth: Compared with previous generations, baby boomers will extend the period of high-income earning and spending by about 10 years (retire later). The sheer size of this generation means there are considerable market opportunities for most goods and services, including big-ticket items such as housing and transportation. But growth based on this demographic shift just more concentrated among the top of wealthy households.

Intergenerational conflicts will potentially rise, drawing in businesses: As retirees and the working-age population competing for resources, businesses may become indirectly involved. The manager may feel hard as they grapple with existing pension obligations, the scarcity of highly skilled workers, social pressure to address job losses and declining incomes among mid- to low-skilled workers.

The supply, demand, and costs of human labor affected which activities will be automated. As the nature of work changes with automation, millions of people may need to switch occupations and acquire new skills, they need to study longer, then labor supply reduces temporary.

The rapid advance of information and communication technology may imply a drastic change in the workplace, business and job structure, which may alter the level impact of the aging workforce.

What follows in the body of this paper is the extended narrative of the collision of demographics and automation that affect the supply-demand and wage in the labor market.

## **2. Method**

Realist review is used. This method are theory-driven interpretative reviews developed to inform, enhance, or supplement conventional systematic reviews by making sense of heterogeneous evidence about the complex effect in diverse contexts in a way that informs policy decision-making (Greenhalgh, Wong, Westhorp, & Pawson, 2011). The paper uses the theory of labor supply and demand to predict the possible effects of automation and demographic shift on the labor market. It is also overview of the actual situation of how this process takes place in developed countries and analyze trends in Vietnam using the source of national survey data.

### 3. Results

#### 3.1 The change in labor supply

##### ➤ For demographic driver

The temporary trends converged to create the fastest labor force growth in 1980s-2000s are the coming of age of the baby boomer generation, and women's entry into the workforce as the lower fertility level. But shifting demographics, combined with technological and social changes, point to dramatically different labor market conditions in the coming decade. Vietnam today has abundant labor for granted. The economic growth has benefited from a rapidly expanding country labor pools—that will be ending in around 2040. Vietnam labor force growth slows to 0.01% per year in the 1990-2049, and reduce quickly since 2010 (Table 1, figure 1).

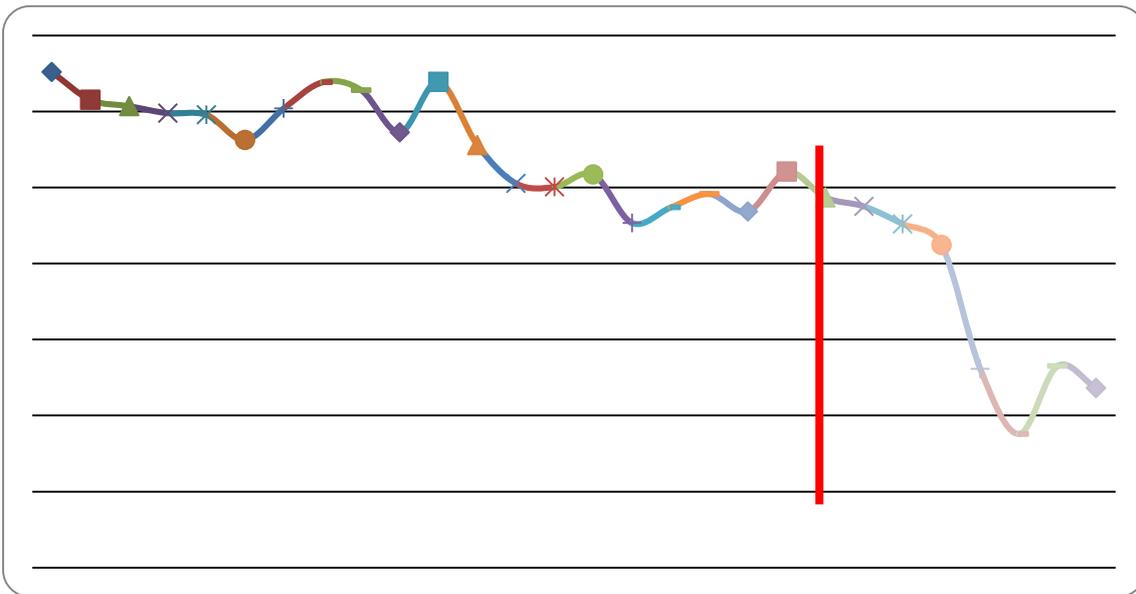
**Table 1: Projected population by age with constant fertility variant and by replacement fertility**

Year	0-14			15-64			65+		
	P <sub>0-14</sub> (1000)	Rate in total population DS (%)	Annual Increase rate (%)	P <sub>15-64</sub> (1000)	Rate in total population DS (%)	Annual Increase rate (%)	P <sub>65+</sub> (1000)	Rate in total population DS (%)	Annual Increase rate (%)
2009	20,993	24.5		59,339	69.1		5,515	6.4	
2014	21,613	23.8	0.15	63,762	70.1	0.36	5,603	6.2	0.079
2019	23,219	24.1	0.36	66,782	69.2	0.23	6,516	6.8	0.753
2024	24,439	24.0	0.26	68,946	67.7	0.16	8,452	8.3	1.293
2029	24,223	22.8	-0.04	71,206	66.9	0.16	10,949	10.3	1.287
2034	23,131	21.0	-0.23	73,530	66.8	0.16	13,494	12.2	1.041
2039	22,177	19.5	-0.21	75,310	66.3	0.12	16,112	14.2	0.884
2044	22,132	18.9	-0.01	76,232	65.2	0.06	18,614	15.9	0.720
2049	22,818	19.0	0.15	75.874	63,1	-0.02	21,545	17.9	0.730

Source: GSO 2011

Labor force growth, as well as labor productivity growth, form the two drivers that determine overall economic output growth. Labor productivity growth without the kicker from labor force growth can create an overall macroeconomic climate of stagnation.

**Figuer 1: Annual Increase rate of Vietnam Labor force 1990-2018.**



*Source: Derived using data from International Labour Organization, ILOSTAT database and World Bank population estimates. Labor data retrieved in September 2018.*

\* Labor force comprises people ages 15 and older who supply labor for the production of goods and services during a specified period. It includes people who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers. Not everyone who works is included, however. Unpaid workers, family workers, and students are often omitted, and some countries do not count members of the armed forces. Labor force size tends to vary during the year as seasonal workers enter and leave

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Labor Economics theories have been interested in the effect of technological change on the labor supply in market by: (i) the retirement options of older workers (A. P. Bartel and N. Sicherman, 1993), (ii) the skill gaining of young workers (A. P. Bartel and N. Sicherman, 1998) (A. P. Bartel and N. Sicherman, 1999).

(i) Technological Change and Retirement option

Technological change can affect retirement decisions in two ways: 1) through the direct effect of technological change on the level of on-the-job training, and 2) through the indirect effect of technological change on the depreciation rate of the stock of human capital.

Economic theory does not provide a unified prediction with regard to the effect of technological change on the optimal level of on-the-job training. This will depend

on the effects of technological change on the marginal return to training, and the complementarity and/or substitutability between schooling and training. Given a positive correlation between technological change and on-the-job training, human capital theory predicts that, *ceteris paribus*, workers in industries with higher rates of technological change will retire later (Y. Ben-Porath, 1967). However, in industries that have higher rates of technological change, human capital will depreciate at a faster rate, and higher rates of depreciation will lead to a lower optimal level of investment, causing earlier retirement. However, unexpected changes in the industry rate of technological change will produce an increase in the depreciation rate of the human capital stock, leading to a revised rate of investment in human capital. If older workers are unlikely to revise their planned investments in human capital, it can be shown that the higher depreciation rate will induce earlier retirement. And if the older worker decides earlier retirement, their labor supply will reduce and vice versa.

(ii) Technological Change affect the Skill gaining of Young labor

Technological change will influence the motivations of both employers and workers in training investments. One opinion is that technological change makes previously formal education and acquired skills obsolete. As a result, both workers and firms will find it optimal to invest in on-the-job training in order to match the specific requirements of each flow of innovation. The other view is that general education enables workers to adjust to and benefit from the technological change. Workers who expect to take a job with higher rates of technological change should invest more in formal schooling and rely less on acquiring specific training on the job. Hence it is impossible to predict a priori the sign of the relationship between technological change and investments in on the job training.

Technological change is also likely to affect the relationship between education and training. In general, more educated workers receive more training, because human capital is input in the production of new human capital. The more educated worker will invest more in both schooling and training.

Thus, if young workers are displaced by the automation of data collection and processing and predictable physical activities, they could move into lower paid occupations, increasing supply in those types of work. On the other way, they may invest more in formal education, they might take time to retrain into other high-skill positions, delaying their re-entry into the labor force, and temporarily reducing labor supply.

### ***3.2. Change in labor demand***

Population aging has attracted impact on labor demand, mostly with respect to their high demand on health care and social assistance workers. Beside, technological advancement in information and communication technology may change

consumption technology of the general public, especially those who have been handicapped by physical problems as well as the old people. Thus information and communication technology may bring about a sizable change in the economy's demand structure and therefore demand labor.

For technology progress, the impact of automation investment on labor demand could be either positive or negative.

According to neoclassical theory, investment would increase labor demand due to the complement of labor and capital. However, many economists tend to view automation investment as a substitute for labor rather than a complement, worrying that investment would decrease the demand for labor by increasing productivity of labor. These implications from the Solow growth model, where an increase in technological investment increases labor productivity. *Ceteris paribus*, firms would need fewer employees and would be incentivized to cut jobs. Nevertheless, with spillover effects on other industries, incomes, or aggregate demand (and thus output), the impact of automation investment is difficult to assess per traditional theory.

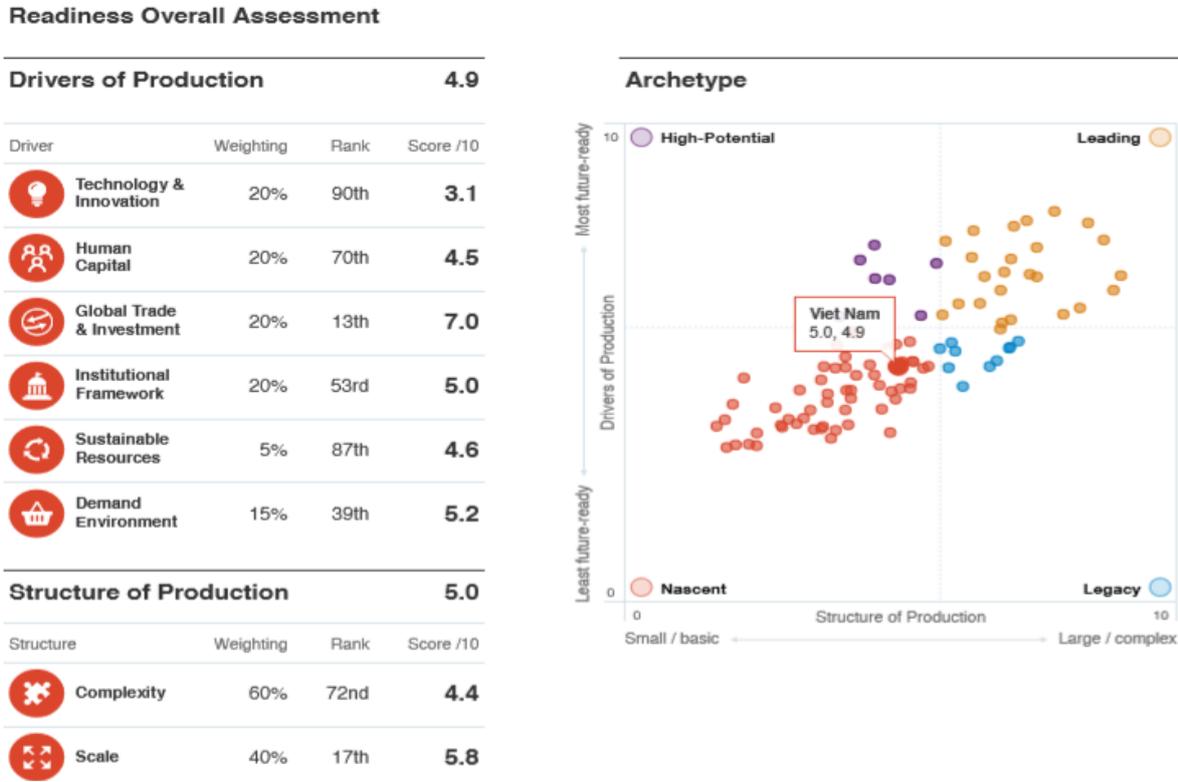
A higher investment would increase production, leading to an increase in income and increase the demand for goods and services, overall employing more labor to produce these goods and services. Therefore, a decrease in employment resulting from increases in labor productivity would be offset by an increase in labor demanded to increase total output. Even if automation investment and labor were substitutes, there could be spillover effects (i.e. increases in demand for labor in related industries, impacts of increased income or aggregate demand, etc.) which could increase employment overall.

In sum, we looked at different impacts that could significantly increase the demand for labor even of those activities that might be automated. They include the following:

- Rising incomes or rising prosperity due to the increase in consumer.
- Aging population: This drives the need for additional labor in healthcare.
- The need to develop and deploy technologies. Digitization, automation, robotics, and artificial intelligence-that require highly skilled labor.
- Investment in infrastructures, such as buildings, and road... All that construction could drive the additional need for human demand.
- Decreasing amounts of unpaid labor in the workforce due to automation. This may be domestic work that's often done by women, that may be reduced housework due to the use of more high technological tools. More and more women could enter the labor market.

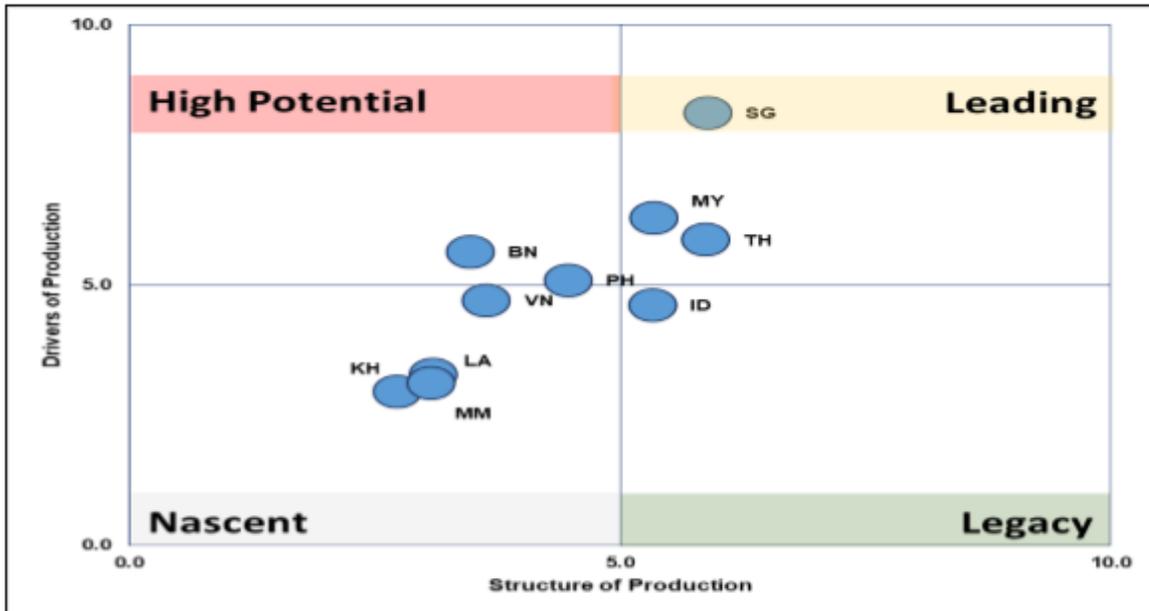
The negative relationship between technology investment and labor has been documented by different parts of the literature. Robots and automated systems have negatively impacted several occupations, almost entirely eliminating elevator operators, highway toll collectors, parking attendants, and others (Quereshi and Syed 2014). They could find themselves moving into lower paid occupations, or they might take time to retrain into other high-skill positions or become unemployment due to the lack of appropriate skill.

Automation with advanced manufacturing refers to the use of innovative technology to improve processes and products. Human ingenuity and creativity become more important in this future production. One of the most important drivers of future readiness production is Human Capital. This driver assesses (WEF 2018b):



**Figure 2: WEF Readiness for Future of Production Report 2018, p 250**

- The ability to respond to shifts in the labor market (supply and demand) that are triggered by the Fourth Industrial Revolution
- Current labor force capabilities to adapt and use emerging technologies in production systems
- The ability to cultivate the right skills and talent in the future workforce through education outcomes, talent attraction, and retention, and inclusion.



**Figure 3: Assessment of ASEAN Readiness for Industry 4.0, 2018**

However, the quality of Vietnamese human is low. The resources-human capital index of Vietnam is 62.19, rank 64 out of 130 countries in 2017, in which the indicator that indicates breadth and depth of specialized skills use at work is lowest (score 41,8; rank 120/130 countries) (WEFa). Moreover, Vietnamese laborers lack the necessary skills in foreign languages, information technology, teamwork, and communication, besides responsibility. According to the Readiness for the Future of Production Assessment 2018 report, Vietnam current level of readiness for the future of production, as well as corresponding opportunities and challenges is least and is classified as Nascent countries, that has the limited current base, at risk for the future or the group least ready for the future of production (Figure 2 and 3, table 2).

**Table 2: Readiness for the Future of Production Assessment 2018, Human Capital Driver**

Index Component	Rank /100	Value
Driver: Human Capital 0-10 (best)	70	4.5
<b>Current Labor Force 0-10 (best)</b>	<b>70</b>	<b>5.4</b>
3.01 Manufacturing employment % working population	28	14.4
3.02 Knowledge-intensive employment % working pop.	<b>81</b>	10.8
3.03 Female participation in labor force ratio	57	0.7
3.04 Mean years of schooling (Years )	<b>74</b>	8.0
3.05 Availability of scientists and engineers 1-7 (best)	<b>70</b>	3.8

<b>Index Component</b>	<b>Rank /100</b>	<b>Value</b>
3.06 Digital skills among population 1-7 (best)	<b>66</b>	4.0
<b>Future Labor Force 0-10 (best)</b>	<b>62</b>	<b>3.5</b>
3.07 Migration migrants/100,000 pop.	<b>63</b>	2.2
3.08 Country capacity to attract and retain talent 1-7 (best)	44	3.5
3.09 Quality of universities Count	<b>75</b>	0.0
3.10 Quality of math and science education 1-7 (best)	<b>68</b>	3.7
3.11 Quality of vocational training 1-7 (best)	<b>80</b>	3.6
3.12 School life expectancy Years	<b>79</b>	12.6
3.13 Pupil-to-teacher ratio in primary education Ratio	<b>62</b>	19.2
3.14 Critical thinking in teaching 1-7 (best)	<b>63</b>	3.2
3.15 Active labor policies 1-7 (best)	50	3.4
3.16 On-the-job training 1-7 (best)	<b>74</b>	3.8
3.17 Hiring and firing practices 1-7 (best)	39	4.0

*Source: from World Economic Forum, 2018b, Readiness for the Future of Production Report 2018, p 250-251.*

These barriers of the Readiness for the Future of Production are mainly in the area of education and professional training as well as high education. If not quickly remove barriers, around 5 million workers in Vietnam are at high risk of losing their jobs by 2020 because of the boom in artificial intelligence, which may replace laborers with robots, according to a recent study by the International Labor Organization (ILO) .

Technology change also has an effect on the interindustry wage structure, may lead to an inequality in labor income. There is evidence that skill-biased technological change is responsible for the dramatic increase in the earnings of more educated workers relative to less educated workers that took place.

#### **4. Discussion and Conclusion**

The net result of these effect trends on supply and demand of labor include, older workers delaying retirement, younger workers delaying entry into the workforce and baby boom generation moving into retirement. It is projected from 2019, the population of those age 65 and older will grow faster than the working-age population in Vietnam.

The mid- and low-skilled workers that form the vast majority of the Vietnamese workforce face at least a several years of disruption as new automation technologies begin to transform many industries and the nature of work.

Losing jobs and low income will make income inequality in the labor market increase.

The analysis suggests the solution which government, companies and individuals could act to overcome the challenges:

- Investing in human capital, particularly early childhood education, to develop high-order cognitive and socio-behavioral skills in addition to foundational skills for automation adaptation.

- Enhancing social protection. A solid guaranteed social minimum and strengthened social insurance, complemented by reforms in labor market rules.

- Creating revenue for public financing of human capital development and social protection (through tax policies). Governments can optimize their taxation policy and improve tax administration to increase revenue without resorting to tax rate increases.

- The immediate challenge for business over the next few years will be attracting and retaining workers, especially highly skilled ones who already are scarce

- There is a complementary relationship between automation investment and growth in labor opportunities, rather than a substitution effect of workers moving from automation-intensive industries to non-automation intensive sectors. Thus, the public should embrace information and communication technology investment as a way in which to spur growth and expand labor market opportunities

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# **SOLUTIONS FOR HUMAN RESOURCE DEVELOPMENT APPROPRIATELY TOWARD THE NEW GENERATION OF FDI INTO VIETNAM**

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## **Abstract**

*Over the past 30 years of the implementation about attracting foreign direct investment (FDI), Vietnam has become one of the attractive destinations of FDI inflows. Up to now, the FDI sector has become the most dynamic pillar and increasingly plays an important role in Vietnam's growth and socio-economic development. However, in the context of a The Fourth Industrial Revolution 4.0, the competition is fierce to attract FDI, the attraction of FDI into Vietnam in the near future has been determined by being converted from quantity to quality, attracting high technology, environmentally friendly source and most importantly, gradually attracting foreign investment from the advantage of cheap labor costs in Vietnam to competing with high quality of human resources. This studying focuses on the current labor situation of the FDI's enterprises to assess the achievements, point out the limitations, weaknesses and the reasons for that. Since then, it is really necessary to propose appropriate and breakthrough solutions to improve the quality of labor resources in accordance with the strategy of attracting new generation of FDI into Vietnam in the period to 2025.*

**Keywords:** *Human Resources, new generation of FDI, Vietnam.*

## **1. Introduction**

Over 30 years of implementing the Law on Foreign Investment, the FDI sector has made significant contributions to the national industrialization and modernization process, which not only has created a large volume of products and services but also has generated many jobs and has improved the quality of national human resources. According to statistics, in the period of 2008 - 2018, the labor force in the FDI sector had an average growth rate of 12% per year which is 5 times higher than the increase

in the overall national employment. However, it is 80% of the laborers in FDI enterprises who are currently without qualifications/training certificates, and in general, they lack of technical skills and other core skills. Besides, according to the report on Provincial Competitiveness Index (PCI) implemented by VCCI in 2017, it has shown that 55% of Vietnamese enterprises affirmed that they faced difficulties in finding quality workers who meet their needs and 69% of FDI enterprises believe that they confront obstacles in labors recruitment because they do not meet the professional and technical requirements.

Thus, it can be seen that it is high time for Vietnam to conduct specific solutions to maximize the benefits from FDI source especially technology transfer and training of high quality human resources. We cannot continue to compete based on the advantage of cheap labors but should prioritize on investment towards environmentally friendly high-tech fields. To accomplish that, enhancing the quality of human resources needs to be the first one step ahead. We need to consider the goal of developing high quality human resources is an important task to attract foreign investment.

## **2. Method**

This study was done by qualitative methods. The analytical data is mainly based on secondary sources such as books, articles, statistics on FDI and labors in the FDI sector from national organizations such as Ministry of Planning and Investment, Ministry of Labour, War invalids and Social Affairs. Based on these data, we generalized, analyzed and evaluated the situations of labor resources in the FDI sector, thereby proposing some solutions to develop human resources in accordance with the new generation of FDI attraction strategy into Vietnam in the period to 2025.

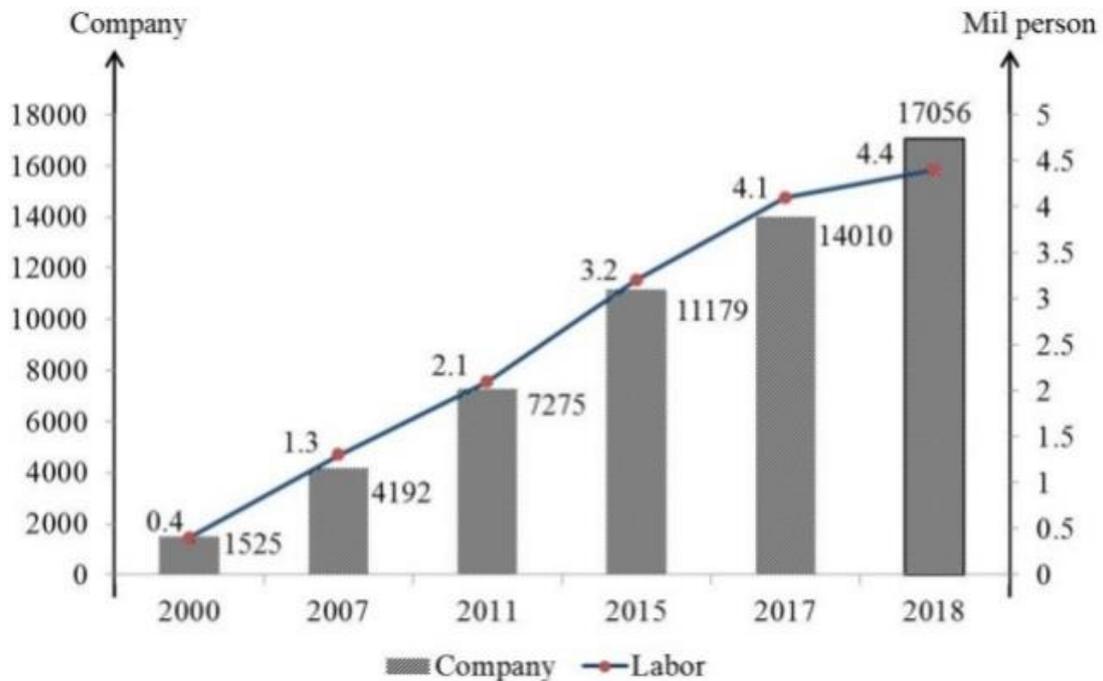
## **3. Results**

### ***3.1. Current situation of human resources in the FDI sector in Vietnam***

In recent years, the foreign direct invested sector (FDI) has played an important role in creating more new jobs for employees, improving technological capacity and management capacity for the workforce of Vietnam.

In terms of quantity, labor in FDI sector tends to increase over the years. According to statistics in 1995, there were about 33,000 employees working in FDI enterprises over the country, in 2007, this figure increased to about 1.5 million workers and by the end of 2018 the country had more than 17 thousand FDI enterprises and these enterprises have attracted more than 4 million direct employees (accounting for about 26% of total employees in the enterprise sector) and about 5-6 million indirect laborers.

**Figure 1. Number of FDI enterprises and number of employees working in FDI enterprises, period 2000 – 2018**



*(Source: [2] and statistics of 2018 of Foreign Investment Department)*

The reason is the impact of stimulating in domestic investment (developing satellite enterprises, industries providing goods and services to FDI enterprises). In spite of not creating many jobs compared to the domestic sector (accounting for only about 5% of total working population), the growth rate of FDI workers is quite high, averaging in the period 2008-2018, FDI workers increased by 12% per year which is 5 times higher than the increase in employment of the whole country [2]. According to the General Statistics Office, the proportion of workers who are under the age of 35 in the FDI sector accounts for 72% in 2017. Based on other surveys of the Ministry of Labor, Invalids and Social Affairs also show that the rate of young workers, even under the age of 25 in the FDI sector is very high which accounts for over a quarter of the working population. This trend, according to many experts, is very important to Vietnam's economy. Because this trend promotes the development of the labor market, labor restructuring in a positive direction, increasing labor productivity in the context of globalization and international integration economic.

In terms of quality, the level of labor in the FDI sector is increasingly improved. Through direct participation in the operation of FDI enterprises, a team of highly qualified managers, technical workers and skilled workers are gradually being formed and accessible to advanced science, high technology and modern industrial style, well-followed labor disciplines, updated learning methods and advanced

management experience. A part of local workers who are admitted to work in FDI enterprises are trained with foreign languages and skills that greatly contributes to improving the quality of human resources, gradually replace the important key positions of the business. According to statistics of the Ministry of Labor, War Invalids and Social Affairs in 2017, the FDI sector has trained and used more than 2.3 million technical workers in assembling and operating machinery and equipment and 680 thousand other technical workers, about 340 thousand technical, protection and sales employees; 295 thousand workers working in high-level professional occupations and 112 thousand middle-class technical workers [2]. A noticeable trend in labor quality restructuring is the tendency to reduce unskilled labor in FDI enterprises (falling rapidly from 11.8% in 2007 to 6.0% in 2018). and increase the rate of workers with high technical and professional qualifications.

**Figure 2. Labor structure working in FDI enterprises according to occupational groups**



(Source: [2,4])

Along with workers who are trained and practiced at enterprises, every year, some FDI enterprises have sent thousands of Vietnamese workers and experts to be trained at parent companies or training institutions abroad. In recent years, a number of leading technology corporations such as Canon, Honda, Samsung, Foxconn, Intel... have established research and human resources development centers at enterprises to directly train managers and high quality human resources.

In addition to the achieved results, the labor issue in the FDI sector also reveals many limitations. In general, it can be seen that most of the labor force has not really grasped the opportunities created by FDI and is not capable of grasping the production technology and advanced management of the world. Along with that, the common labor force is quite abundant while there is a shortage of skilled and well-trained workers, specifically:

Firstly, according to current statistics, the proportion of workers without qualifications / training certificates in FDI enterprises accounts for nearly 80% of workers and this rate is almost unchanged from 2011 until now.

Secondly, according to the Provincial Competitiveness Index (PCI) report published in 2017 by the Vietnam Chamber of Commerce and Industry [5] 69% of FDI enterprises in Vietnam think they are facing difficulties in the recruitment of skilled technicians to serve their production and business activities.

**Figure 3. Difficulty in Recruiting Workers**



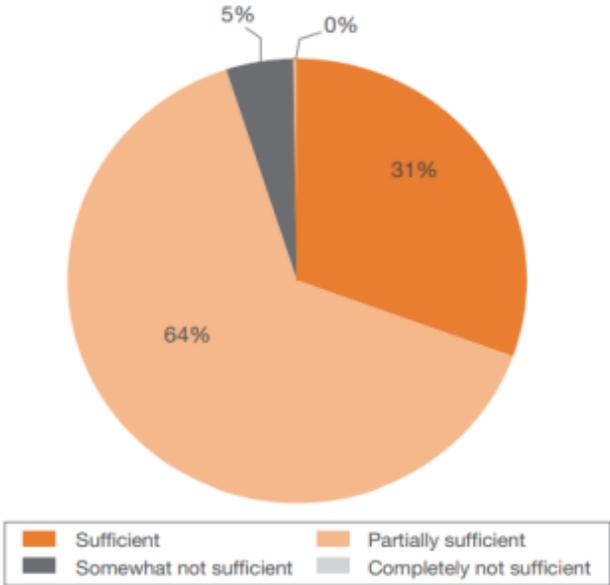
*(Source: PCI Survey 2017 Question F1.1.7 “Please evaluate how easy or difficult it is to recruit workers in these specific areas?”)*

According to a 2015 survey by the Japan External Trade Organization (JETRO), 80 percent of respondents needed technicians and 89 percent would need technicians in the future. Three years later, in 2017, the PCI - FDI survey shows that good technicians are still a rarity, with 55 percent of firms finding it “slightly difficult” and 19 percent considering it “difficult” to recruit this type of worker. As Figure 3 clearly demonstrates, the situation is even worse when it comes to other skill-intensive positions such as supervisors and managers. For the latter, 36 percent of respondents consider the search “difficult” and 28 percent find it “very difficult”.

Similarly, foreign investors’ assessment of Vietnamese labor quality remains low. Figure 4 shows that only 31 percent of FIEs think that the quality of the

province’s workers meets their needs. A significant majority (64 percent) consider labor quality to be only partially sufficient.

**Figure 4 - Quality of Labor in the Province**



*Source: PCI Survey 2017 Question F1.2.1 “Based on your experience of using local labor, please assess the quality of labor in the province:”*

**3.2. Human resources development solutions to meet the requirements for new generation of FDI attraction.**

Over the past 30 years, Vietnam has achieved many results in attracting FDI, especially, the FDI sector has really played an important driving force for national socio-economic development. However, the key remained issue is the quality of human resources in this area is lacking and weak. If we do not enhance the quality of human resources, it will be very difficult to continue attracting investment in the new current context. Therefore, in order to endure improving the quality to meet the requirements of FDI enterprises, in the future, Vietnam needs to focus on solving the following urgent issues:

*Firstly*, it is very necessary to develop a national strategy for human resource development, with priority given to invest in human resource training in the areas of high technology, key technologies and high value added industries in order to meet the new strategic targets of FDI attraction. In addition, strategies need to put towards its policies and a cluster of labor development solutions specific to each sector. In particular, it really needs to emphasize a cluster of solutions to better the quality of human resources through focusing on strengthening skills and practical capacity training.

*Secondly*, it states in the necessity of completing policies to attract investment in socialization training resources, calling for domestic and foreign private investment, building vocational institutions with modern equipment, spacious facilities, skilled teachers, diversifying resources for developing vocational and training basis. In the immediate future, we should call for investment in a number of key multidisciplinary training institutions to meet the human resources with synthetic thinking in the industrial revolution area 4.0 instead of focusing on attracting investment in training that is too intensive for employees like before.

*Thirdly*, there should be actions to develop human resources according to the national and international output standards. We need to accelerate the development of output standards based on professional standards in line with the national qualification framework. In the first step, the focus is on key occupations, high-tech and advanced industries, environmentally friendly technologies, clean energy, renewable energy; manufacturing medical equipment, providing health care services, education and training, high quality tourism, financial services, logistics and other modern services that all need to be one step ahead; next, in the agricultural sector, attention should be paid to applied high-tech agricultural production and smart agriculture; additionally, developing modern technical infrastructure, especially new industries based on the industrial revolution 4.0 platform; conducting the review and adjustment process of the primary training programs in the direction of flexibility and practicality. It is impossible not to mention a solution that is to select successful countries in vocational training development to organize the reception and synchronous use of vocational training programs and curricula that are suitable for the Vietnamese labor market and key occupations at regional and international levels. At the same time, it is necessary to continue the process of developing a list of vocational training equipment, with priority given to key national occupations; in parallel with that, reviewing and revising equipment lists issued in the direction of reaching out to regional and international standards of facilities and training equipment.

*Fourthly*, it is necessary to review the overall groups of vocational education teachers (both teachers in professional technical schools and colleges) to improve standardization and the construction of a standardized roadmap to meet the vocational training objectives until 2025 and the next stages. Besides, there should be reasonable employer, promotion and remuneration policies for good and qualified lecturers. We need to arrange appropriate assignments, respect the aspirations and forte each person, at the same time, it is good to create a free and democratic working environment that encourages passion and creativity among labors.

*Fifthly*, it is necessary to focus on forecasting labor demand as well as implementing vocational guidance and career orientation for students when they are

right from school. At the same time, institutions and vocational schools need to be strictly regulated on output of quality standards (towards international standards of teaching methods and course books). Linkage needs to be close between training institutions and enterprises in the training process, ensuring output quality that meets the market demand. The essence of this solution is also to improve the quality and efficiency of labor in the FDI sector, thereby resolving the insecurity of social security issues. In addition to orientation, training of new human resources and young manpower, we need to re-train existing labor resources to improve the competitiveness of Vietnamese workers, promote the process of shift labor from low income to high-skilled and high-income workers, against the risk of being fired. This training on quality improvement is based on the requirements of the industrial revolution 4.0 and the integration of training with the recruitment needs of enterprises in each specific field.

*Sixthly*, it is necessary to focus on soft skills and foreign language skills for human resources during the training process. This is a very good thing when working in large foreign corporations, not only that, these skills also create opportunities for Vietnam's workforce to improve their qualifications and access new technologies through courses training and experience at the international enterprises. To do this, workers themselves also need to be aware of their foreign language skills so as not to lose their jobs at their "home country".

*Seventhly*, it is the connection with enterprises in vocational training: Training institutions must proactively forecast the information demand on the labor market associated with the industrial revolution 4.0; which tends to attract foreign investment (how fields, technologies), thereby building the exact number and type of labor required by the enterprise, calculating the scale and reasonable training curriculum. On the business side, it is also necessary to facilitate the training infrastructure for associated schools, promote cooperation memorandums on training cooperation. We do need mechanisms to help businesses coordinate in building training programs and curricula; organizing teaching, guiding internship and assessing learning results of learners at FDI enterprises; organize training and retraining to improve occupational skills and vocational retraining for employees of enterprises; Expenses for professional training activities of enterprises shall be deducted when determining taxable incomes according to the provisions of tax law; Provide a full information on training needs and employment of enterprises according to the industry, occupation and demand for annual recruitment of state management agencies for vocational education.

*Eighthly*, promoting international cooperation on vocational training: Continuing to cooperate with the Korean, German, Italian and Japanese governments in implementing ODA projects in the signed vocational training fields; negotiating with

ASEAN countries to proceed to recognize diplomas, certificates and vocational skills among countries; Completing policies and encouraging domestic vocational training institutions to expand cooperation and training with overseas training institutions; scientific research cooperation; attracting foreign investors to develop vocational training institutions, opening representative offices in Vietnam.

#### **4. Discussion and Conclusion**

Developing human resources to ensure the attraction of new generation FDI, in accordance with the requirements of FDI enterprises in the context of the 4th industrial revolution is spreading rapidly, the process of opening the integration of Vietnam are getting deeper and wider is an urgent requirement in the current period. In order to develop human resources to meet the new requirements of the country, Vietnam needs to have synchronous solutions from education to training, which need to focus on implementing breakthrough solutions related to coordination cooperation between schools and businesses; there are mechanisms to promote the initiative of the parties. Launching action of building a large data center is to exchange information between the parties on the needs of training and labor use of enterprises with training institutions attached to training to meet the practical requirements of enterprises.

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**THE IMPACT OF HUMAN RESOURCE MANAGEMENT  
PRACTICES ON INNOVATION OF SMALL AND MEDIUM  
ENTERPRISES IN VIETNAM**

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**Abstract**

*This study aims to analyze the impact of human resource management practices on innovation of SMEs in Vietnam in the dynamic and competitive environment. The study uses the data collected by Central Institute for Economic Management (CIEM) in 2011, 2013 and 2015. By using the Tobit model, the results show that HRM practices positively influence innovation of SMEs, and the most significant relation to innovation is training. Based on the findings, small and medium firms in Vietnam need to manage human resource effectively by some activities such as training, union, wage and job rotation in order to promote innovation output, including new products, new process and modified product.*

**Key words:** *HRM practices, innovation, SMEs in Vietnam*

## **1. Introduction**

Nowadays, organizations are facing a competitive and continuously changing environment. In this context, the performance and even the survival of firms depend on their ability to achieve a competitive position, on their flexibility, adaptability and responsiveness than ever. Consequently, there is an increasing interest in innovation as a strategy that allows the firm to improve its flexibility, competitive position and performance (Dalota, Marius-Dan, 2013).

Human factors in general and human resource management (HRM) in particular are considered as key elements of successful innovation in today's world because the human element is involved in the whole innovation process (Dalota, Marius-Dan, 2013). Bamber et al. (2017) said that this is because people, who are at the heart of creativity and innovation of organizations, would develop new ideas and also put them into practice. Similarly, Shipton et al. (2005) suggested that effective human resource management practices of a firm would promote innovation by enabling employees to create, transfer and institutionalize knowledge.

The purpose of this study is to examine the impact of HRM practices on innovation of Small and Medium Enterprises (SMEs) in Vietnam. Because evidence on the HRM practices role in SMEs, especially in innovation, is a research gap from the developing countries because almost existing studies focus on the large-sized organizations in developed countries (Ogunyomi and Bruning, 2016). On top of that, SMEs play considerable roles in the national economic (Hung, 2007; Trung et al., 2009). Furthermore, innovation and HRM play an increasingly important role in sustaining competitiveness for enterprises in the dynamic and changing environment (Dalota and Marius-Dan, 2013).

The paper is divided into 6 parts as follow. We first provide a brief literature review of HRM, innovation and how HRM practices have effect on innovation. Second part describes data source, the sample and measurement of dependent, independent and control variables. Section 3 reports the results while section 4 makes some discussions.

## **2. Literature review and hypothesis**

### ***2.1. HRM practices***

In 1995, Jackson and Schuler suggested that HRM practices can be almost everything associated with management of employment relations in organization. According to Delery and Doty (1996), HRM practices is defined as a set of internal

policies and practices designed and implemented to ensure that human resources contribute to the goals of firms. Specifically, HRM practices consist of the hiring of employees, job and work design, training, and compensation policies that have incentives and motivation in order for employees to meet organizational goals (Jiang et al., 2012). Chowhan (2016) also looked at the relationship between HRM practices, including skill-enhancing, motivation-enhancing practices, and organizational outcomes, such as innovation.

## ***2.2. Innovation***

At firm level, innovation is a widely discussed topic in the literature, especially when there is increasing concern of the world economy toward the knowledge economy (Rodil et al., 2015). The first definition was coined by Schumpeter in the late 1920s. After that, innovation was defined in many ways. According to Hansen and Wakonen (1997), innovation is reflected in novel outputs: a new good or a new quality of a good; a new method of production; a new market; a new source of supply; or a new organizational structure, which can be summarized as “doing things differently”. In 2015, Fay et al. suggested that innovation is related to new products and services, new methods and process, new technology as well as the changing in administration in organizations. But perhaps the most commonly used definition of innovation and is chosen in this study is that provided by the Organization Economic Cooperation and Development (OECD, 2005, p.46) suggesting that “Innovation is the implementation of a new or significantly improved product (good or service), process, new marketing method, or a new organizational method in business practices, workplace organization, or external relations” (Laforet, 2011, p.46).

## ***2.3. The relationship between HRM practices and innovation***

In the process of innovation and development, organizations need creative and innovative people who are flexible as well as willing to take risks and withstand the change (Chen and Huang, 2007). Therefore, it is important for organizations to apply effective HRM practices to support, promote and encourage creative and innovative employees (Ling and Nasurdin, 2010). A potential worker will inspire the imagination in the organization (Gupta and Singhal, 1993), which helps innovation activities to be conducted more effectively and quickly. In fact, HRM practices of a company is one of the factors which decide innovative input components, the emergence of innovation and the innovative performance (Arulrajah, 2014). According to Mumford (2000), this phenomenon occurs because an organization's

innovation capacity depends on the intelligence, imagination and employee creativity of the input of innovation. Therefore, it is important to realize that companies well performing should implement human resource management practices, thereby building a solid foundation for innovation.

Specifically, factors in HRM practices affect the efficiency of enterprise innovation. According to Tan and Nasurdin (2011), performance evaluations increase employee satisfaction because they have the opportunity to discuss and evaluate their own performance as well as colleague performance. Thereby it makes them strengthen the innovation activities and improve their qualifications. Training helps employees master their knowledge and their skills that contribute to product innovation, processes innovation and management practices in daily operations (Schuler and Jackson, 1987). Therefore, training develop the knowledge, skills and abilities of employees to perform effectively in their work will lead to higher organizational innovation. Research of Tan and Nasurdin (2011) showed that the reward system encourages workers to become motivated and enhance their participation in contributing innovative ideas. Therefore, it can be seen that between HRM practices and innovation have an intimate relationship.

We hypothesize the following:

*Hypothesis: The HRM practices is positively related to innovation*

### **3. Method**

#### **3.1. Measures**

Prior researchers have measured innovation in different ways. Lee and Choi (2003) measured innovation by 2 items, first, the number of new or improved products launched to the market is superior to the average in your industry second, the number of new or improved processes superior to the average in your industry. Kostopoulos et al. (2011) used a dummy variable that equals 1 if the firm has introduced a product or process innovation over the period 1998–2000 and 0 otherwise.

Arcimoles (1997) used employment, wages and training to measure HRM practices while HRM practices are measured by employment security and training expenses (Diaz-Fernandez et al.,2015).

In our study, variables are measured as table 1

**Table 1. Variable measurements**

Variable		Measurement	Authors
<i>Dependent variable:</i> Innovation		Innovation is a dummy variable which equals 1 if firm has one of innovative activities including: introduce new product, improve existing product, apply new manufacturing process, equals 0 if the company has none of those.	Ngo Hoang Thao Trang (2017)
<i>Independent variables</i>	Wage	Mean of wage of production workers (1000 VND)	Arcimoles (1997)
	Union	Whether the firm has company union (1= Yes, 0= No)	Casey Ichniowski et al. (1995)
	Job rotation	Whether operators rotate across jobs or tasks on the line (1= Yes, 0= No)	Casey Ichniowski et al. (1995)
	Training	Whether the company provided regular training activities for at least 50% of new recruited workers (1=Yes, 0= No)	Thang Dang et al. (2016)
<i>Control variables</i>	Export	Whether the firm exports their goods (1=Yes, 0= No)	Ngo Hoang Thao Trang (2017)
	Firmsize	Firmsize include 3 levels: micro (the number of labors <10), small (10 =<the number of labors <50), medium (the number of labors >=50). Firmsize (firmsize_small and firmsize_medium) is divided into 2 dummy variables, Firmsize_micro is comparative variable	Ngo Hoang Thao Trang (2017)

### 3.2. Data

The data source of this study is from SMEs surveys. SMEs surveys are jointly carried out for every two years by University of Copenhagen, General Statistics Office (GSO) of Vietnam, Vietnamese Institute of Labor Science and Social Affairs (ILSSA), and Central Institute for Economic Management (CIEM) of Vietnamese Ministry of Investment and Planning. The sample includes about 2600 firms located in 10 Vietnamese provinces including Ha Noi, Phu Tho, Ha Tay, Hai Phong, Nghe

An, Quang Nam, Khanh Hoa, Lam Dong, Ho Chi Minh City and Long An. For example, the 2011 survey consists of 2552 firms while the figures for 2013 and 2015 surveys are 2575 and 2649 firms, respectively.

**Table 2. Descriptive statistics**

Variable	Observations	Mean	Standard deviation
Innovation	4,812	.3534913	.4781032
Wage	4,812	2468.464	1852.178
Union	4,812	.1016209	.3021806
Job rotation	4,812	.0434331	.2038511
Training	4,812	.0931006	.2906035
Export	4,812	.0644223	.2455292
Firmsize_small	4,812	.247714	.4317297
Firmsize_medium	4,812	.0733583	.2607508

*Resource: calculation of authors*

From the summary statistic of the sample represented in table 2, for training activities, only about 9.31% of firms from the whole sample provided the training for their new recruited employees. In addition, the figures for union and job rotation are 10.16% and 4.34% respectively. Regarding to export, there is just roughly 6.44% firms exported their goods to other countries. Finally, the mean of wage for production workers is approximately 2.468 million VND.

### **3.3. Data processing**

Although, the data is generally structured as a cross-sectional structure for each year, a subgroup of SME firms is repeatedly interviewed from year to year. This advantage enables us to construct a panel sample of manufacturing firms from 2011 to 2015 for this study following these steps

- Firstly, the data was collected from three different SMEs surveys taken place in 2011, 2013 and 2015
- Secondly, we calculated and extracted necessary indicators for the study base on the given data sources
- Next, we eliminate observations which have insufficient information and negative value added (VA) (according to Clarke et al. (2011) proved that negative value added is to deviate model estimation results about effect of intellectual capital to innovation).

• Finally, due to the studied period from 2011 to 2015, we select companies have been working continuously during the given time

Therefore, the final data includes 1604 firms from each survey, which means there are 4812 researched organizations in total.

The regression equation is as follow:

$$\mathbf{Innovation}_{i,t} = \alpha_0 + \alpha_1 \mathbf{HRM}_{i,t} + \alpha_2 \mathbf{CONTROL}_{i,t} + \varepsilon_i$$

While **Innovation**<sub>i,t</sub> measures the output of innovation activities for a firm i and a year t, the **HRM**<sub>i,t</sub> denotes a HRM practices that are employed by a firm i, in a year t. HRM practices include a wide range of HRM practices that are carried out by a firm over the previous years. Additionally, the **CONTROL**<sub>i,t</sub> is a vector of control variables for firm characteristics from the main specification. In particular, control variables include (1) whether a firm exports their product (2) the size of a firm.

#### 4. Results

To analyze the impact of HRM practices on innovation, to begin with, we run a correlation table (Table 3) to appraise the strength of the relations. In addition, to get further quantitative analysis, we use Tobit model as dependent variable is dummy; the results is indicated at table 4.

**Table 3. Correlations between study variables**

	Innovation	Wage	Union	Jobs rotation	Training	Export	Firmsize_s mall	Firmsize_ medium
Innovation	1.0000							
Wage	0.0820	1.0000						
Union	0.1225	0.1741	1.0000					
Job rotation	0.0728	0.0776	0.2084	1.0000				
Training	0.1087	0.1824	0.2331	0.1598	1.0000			
Export	0.1141	0.1252	0.3628	0.1227	0.1461	1.0000		
Firmsize_s mall	0.0661	0.2445	0.1384	0.0903	0.1392	0.1102	1.0000	
Firmsize_ medium	0.1187	0.1331	0.5570	0.2177	0.2116	0.3839	-0.1615	1.0000

*Resource: calculation of authors*

Table 3 indicates the correlations between all variables in the study. It is clear that all of the correlations between innovation and HRM activities (include wage, union, job rotation, training) are positive. Which means, for example, the more wage a firm pays for their production labors, the more innovation activities within organization are implemented. It is noticeable that the correlation between union and innovation is the strongest one (the figure is 0.1225), while the weakest one is of job rotation (0.0728). Moreover, we also see the positive correlations between

firmsize\_small, firmsize\_medium, export and innovation, the figures are 0.0661, 0.1187 and 0.1141 respectively.

**Table 4 Results of regression analysis between HRM practices and innovation**

Independent variable	Innovation	
	Coefficients	P-value
Const	.2850237	0.000
Wage	9.28e-06	0.018
Union	.0562441	0.050
Job rotation	.06702	0.053
Training	.1018068	0.000
Export	.1088764	0.000
Firmsize_small	.0495874	0.005
Firmsize_medium	.1112455	0.001
Observations: 4812		
<b>Prob &gt; chi2 = 0.0074</b>		

*Resource: calculation of authors*

Table 4 shows that the  $Prob > \chi^2 = 0.0074 < 0.05$  which means the Tobit regression result is suitable, the model is

$$\begin{aligned} \text{Innovation}_{i,t} = & .2850237 + 9.28e-06 * \text{wage}_{i,t} \\ & + .0562441 * \text{union}_{i,t} + .06702 * \text{jobrotation}_{i,t} + .1018068 * \text{training}_{i,t} \\ & + .1088764 * \text{export}_{i,t} + .0495874 * \text{firmsize\_small}_{i,t} + .1112455 * \text{firmsize\_medium}_{i,t} \end{aligned}$$

From table 4, we come to some conclusions:

Firstly, when it comes to wage,  $\alpha_1 = 9.28e-06 > 0$  which means there is a positive relation between wage and innovation and the figure has statistical meaning at 5%. However, the coefficient is quite low when average wage of production workers increases by 1000 VND, the innovation is to improve around 0.000928%.

Secondly, union has a positive effect to innovation, in particular, when a firm has a company union the possibility it operates innovation activities is approximately 5.6% higher than that without a union. The conclusion has statistical mean at 10% ( $p\_value = 0.05$ ).

Thirdly, the same applied for job rotation while a firm rotates tasks for their operators, the likelihood innovation activities implemented in this organization is nearly 6.7% than that does not. In addition, the result has meaning at 10% when  $p\_value = 0.053$ .

Fourthly, it is noticeable that the influence of the training to innovation not only positive but also is the strongest one in comparison with other practices in HRM.

In this case, when a company operates training for their new hired employees, the capability it has innovation activities is around 10% higher than that without training activity. The conclusion has statistical mean at 1% because of  $p\_value = 0.000$ .

Finally, control variables also have positive influence to innovation. In terms of export, because of the coefficient  $\alpha_5 = .1088764$  means when a manufacturing firm exports their products to other countries, the feasibility it implements innovation is 10.88% higher than without exporting. Regard to firm size, when a small company has chance to occur innovation is 4.9% higher than micro one, the figure for medium is 11.12%. All of the results have statistical mean at 1%.

## **5. Discussion and Conclusion**

In this study, we examine the effects of HRM practices on innovation in SMEs in Vietnam. The statistical results obtained in this study showed that wage, union, job rotation and training have positive effects on innovation, particularly, training has the most significant influence on innovation.

Peter Nientied and Corella Slob-Winterink (2018) concluded in their research that the company's HRM has effect on innovation, but the improvements can be made in cross-departmental teamwork based on team targets instead of individual tasks. In 2011, according to Cheng Ling Tan and Aizzat Mohd Nasuridin's study, HRM practices, including performance appraisal, career management, training, reward system, and recruitment have a positive relationship with organizational innovation (product innovation, process innovation, and administrative innovation). Bhumika Sharma et al. (2017) also pointed out that the role of theoretical and empirical status of HRM practices in development and retention of innovation potential and capacity of SMEs.

Our study provides several important implications. First, it is essential for firms to provide adequate training program for their employees, which enables employees to acquire different types of knowledge from both internal and external training programs. Managers should also establish a trail to enable knowledge to be shared and transferred from the organization to an individual, from an individual to an individual, and from an individual back to the organization. With proper facilitation, the employees will be able to use and apply the knowledge to improve efficiency, and solve problems. Second, organizations should provide suitable compensation, union and job rotation policies.

Innovations play an integral role for the innovation activities as well as performance of SMES in Vietnam. The finding of this study has showed some of the most important innovation factors which are wage of employees, union, job rotation and training, but the most substantial effect on innovation is training. Because of the

limitation of data used in this research, the measurement of HRM practices are restricted. In other words, there are other things such as selection and recruit you can find out in the relationship between HRM practices and innovation, and different results may be revealed.

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# LABOUR PRODUCTIVITY AT VIETNAM

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## **Abstract**

*Vietnam's labor productivity has improved significantly over the past few years; however the productivity gap between Vietnam and other countries continues to increase. The article generalizes labor productivity in the classical works of Marxism - Leninism; presents the current situation labor productivity in Vietnam, explains the causes of low labor productivity; and proposes solutions to improve labor productivity for the State, enterprises and workers.*

**Keywords:** *Labour productivity, Labour productivity at Vietnam; Causes of low labour productivity; Solutions to increase labour productivity at Vietnam.*

## **1. Introduction**

When discussing about the value amount of goods, Marx indicated how labour productivity affects the value of a product unit: “the higher the productive power of labour is spent, the less hours it will take to make a product; and the smaller the amount of labour-power spent on a product, the less value the product has”. Regarding factors influencing labour productivity, Marx wrote: “The change of labour hours spent on producing goods depends on the change of productive power of labour; this productive power depends on different factors including average proficiency of workers, the development of science and the technical application of science, social combinations of production processes, the scope and effects of the production materials and the natural conditions” (Karl Marx and Frederick Engels, *Collected Works*, National Political Publishing House, Hanoi, 1993, Volume 23, page 62-65). According to Vladimir Ilyich Lenin, in any socialist revolution, “Another fundamental mission with the highest priority is establishing a social regime that is higher than capitalism. This mission is improvement of labour productivity”. Improvement of labour productivity requires the industrial infrastructure, people with high level of education and culture, effective discipline of employees, skills and

ingenuity of labours (Vladimir Ilyich Lenin, *Collected Works*, Progress Publishing House, Moscow, 1976, Volume 36, page 228-232).

According to the Organization for Economic Co-operation and Development (OECD), labor productivity is measured by the number of completed products and services made for a labor unit involved in production activities. In particular, the completed products and services made for the economy are the Gross Domestic Product (GDP). Labour involved in production activities brings out GDP which reflects the time, effort and skills of the workforce; and is often calculated by working labour.

In Vietnam, Social Labor Productivity is an indicator of the National Statistical Indicator System (stipulated in the Law of Statistics), measured by the average GDP per worker working in the year. This calculation is completely consistent with current international practice.

There have been a number of research projects on labor productivity in Vietnam over the past few years. Particularly, the "Vietnam's Productivity Report 2017" gives readers information on productivity indicators and their relationships with other macroeconomic indicators, current labor productivity situation of the whole economy and economic sectors. This report also analyzes the factors affecting Vietnam's productivity, and compares it with some Asian countries.

## **2. Research Methods and Approaches**

The research was based on secondary documents collected from reputable organizations such as the General Statistics Office of Vietnam, the International Labour Organization and foreign economic research organizations to determine the current labor productivity in Vietnam; then used the statistical and comparative analysis method combined with data analysis and processing to find out the reasons of inhibited productivity and to propose solutions for improving labor productivity in Vietnam in the coming period.

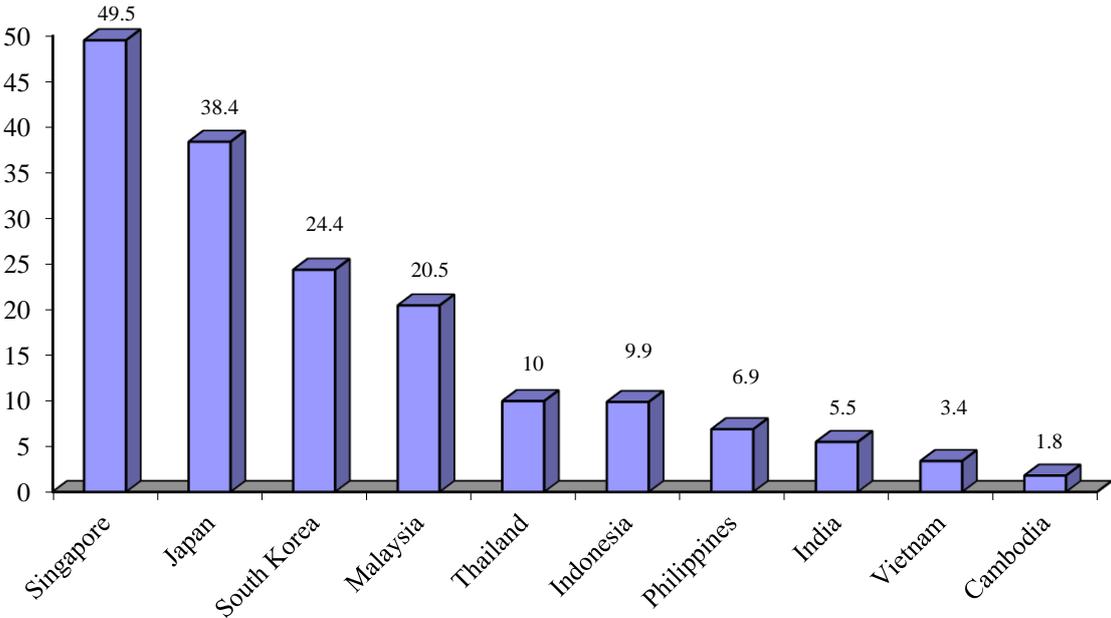
## **3. Results**

### ***3.1. Current situation of labour productivity at Vietnam***

In the Seminar on Vietnamese Economy in the first 9 months of 2015, which was held on September 11<sup>th</sup> 2015, the research team of the National Economics University emphasized that labour productivity in Vietnam was only higher than Cambodia's while the total factor labour productivity (TFP) was very low. In fact, Vietnam's labour productivity lags behind that of countries which have similar economic development such as Thailand. According to the report, with the productivity growth rates of Vietnam and Thailand at the present, until 2069 the Vietnamese labour productivity will have caught up with Thailand's. Particularly,

Vietnamese labour productivity is 18 times lower than Singapore’s, 11 times lower than South Korea’s, 7 times lower than Malaysia’s, 3 times lower than Thailand’s and China’s, 2 times lower than Indonesia’s and Philippines. The total factor labour productivity of Vietnam is approximately equal to Laos and 36.4% higher than Cambodia’s.

*Unit: USD/hour*



**Chart 1: Labour Productivity by Hour of Countries in 2012**

*Source: Research Team of The National Economics University*

If the labor productivity is measured by GDP per hour worked; in 2012, a Singapore employee could make 49.5 USD of added value per hour while a Vietnamese employee could only make 3.4 USD of added value per hour.

The research result from the International Labor Organization (ILO) showed that in 2012, the average wage of an Vietnamese employee was 181 USD per month, which was higher than a Laotian employee (119 USD), a Cambodian employee (121 USD), an Indonesian employee (174 USD) but which was 19.5 times lower than a Singapore employee (3,547 USD), 3.6 times lower than a Malaysian employee, 1.9 times lower than a Thailand employee, 1.1 times lower than a Philippine employee. It was assumed that if Vietnam and these regional countries still maintained their average productivity growth rate of the period 2007-2012; Vietnam would be able to catch up with the labour productivity of Philippines until 2038 and Thailand until 2069.

**Table 1: Labour Productivities and Wages of Employees from ASEAN Countries in 2012**

*Unit: 1,000 USD.*

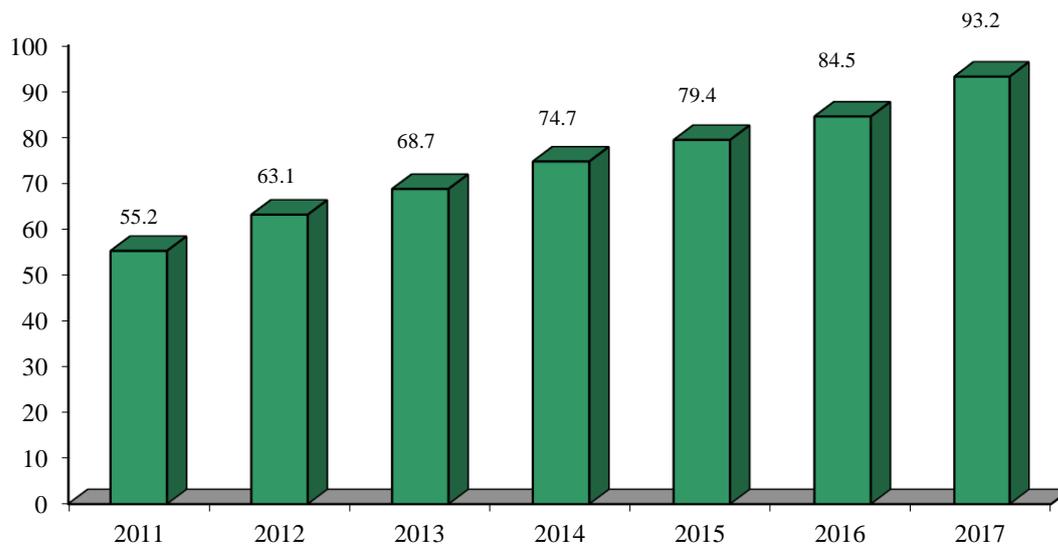
<b>Country</b>	<b>Labour Productivity</b>	<b>Wage</b>
Singapore	96.573	3.547
Malaysia	35.018	609
Thailand	14.446	357
Philippines	9.571	206
Indonesia	9.486	174
<b>Vietnam</b>	<b>5.239</b>	<b>141</b>
Laos	5.115	119
Campuchia	3.797	121
Myanmar	2.683	75

*Source: The International Labour Organization (ILO).*

According to the General Statistics Office of Vietnam, the productivity of the whole economy at current price of 2017 reached VND 93.2 million per labour (which is equivalent to USD 4,166 per labour). Calculated by the comparative price in 2010, the labour productivity of the whole economy in 2017 increased by 6% compared to 2016; the average productivity for the period of 2011-2017 increased by 4.7% per year.

The Vietnamese labour productivity has had a considerable improvement with a steady increase over the last few years. Vietnam is one of the countries having high growth rate of labour productivity in ASEAN. In the period of 2007-2016, the Vietnamese labour productivity based on 2011 purchase power parity (PPP 2011) increased by 4.2% per year. This average growth rate of productivity was higher than Singapore's (1.5% per year), Malaysia's (1.9% per year), Thailand's (2.5% per year), Indonesia's (3.5% per year) and Philippines (2.8% per year). However, the current Vietnamese labour productivity is still lower than other regional countries. Based on PPP 2011, the Vietnamese labour productivity in 2016 reached 9,894 USD, which was equal to 7%, 17.6%, 36.5%, 42.3% and 56.7% of figures for Singapore, Malaysia, Thailand, Indonesia and the Philippines, respectively. Remarkably, the gap between Vietnamese labour productivity and those of other regional countries is getting larger. It shows that Vietnamese economy has to deal with a lot of challenges in catching up with the labour productivity of other countries.

*Unit: million VND/labour*



**Chart 2: Vietnamese Labour Productivity in the period 2011-2017**

*Source: The General Statistics Office of Vietnam*

According to the report, although the Vietnamese labour productivity in the period of 2006-2012 decreased from 4.05% (in 2006) to 3.06% (in 2012), this figure had a strong growth in the period of 2012-2017 which reached 5.3% per year. However, a comparison with Northeast Asian countries of Japan, South Korea and China and member nations of the ASEAN bloc, including Singapore, Thailand, Malaysia, the Philippines, Indonesia and Cambodia, shows that the labour productivity of Vietnam's nine industries barely made it out of the bottom group.

### ***3.2. Causes of low labour productivity in Vietnam***

At the present, Vietnam has many "bottlenecks" at both macro and micro levels, making the labor productivity have low increase.

#### ***3.2.1. From the State***

Vietnam and other countries have a very different *starting point* from the perfection level of the law and the structure of the economy. The backward technology, the inadequacies in the business environment and insufficient cumulative investment for development in Vietnam make the national GDP not increase.

*Fristly*, the scale of economy in each country depends on the proportions of sectors or industries which bring in high GDP and on the number of their employees.

In Vietnam, the structure of sectors in the economy and the internal structure of each sector are backward. Agriculture sector has low labour productivity, but has large portion while service and industrial sectors bringing in high GDP have low

portion. According to the General Statistics Office in 2018; the agriculture, forestry and fishery sector; industry and construction sector; service sector and product taxes minus product subsidies accounted for 14.57%, 34.28%, 41.17% and 9.98% of the total GDP respectively. Within the spearhead industries; high technology sector, modern services such as finance and tourism only have low proportion; which leads to the low GDP scale. In the agricultural sector, the proportion of labour from agricultural, forestry and fishery sector decreased from 49.5% in 2010 to 40.3% in 2017, but was still higher than that of the service and industrial sectors. This is also a reason why the scale of economy cannot increase.

*The slow transition of economic structure* from agriculture with low labor productivity to industries and services with higher labor productivity also has a significant impact on increasing the national labor productivity. The model of economic development mainly based on capital and resources, has resulted in very low gray matter level and low value in products.

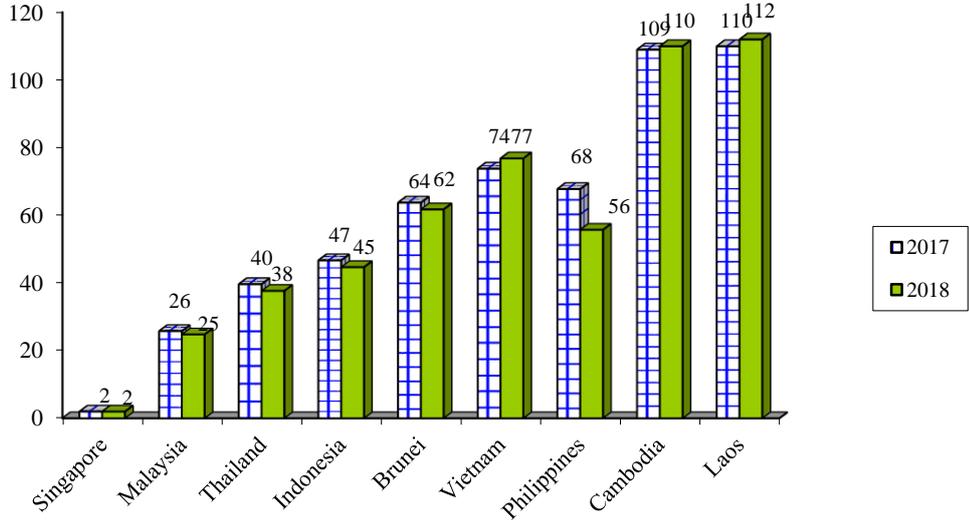
*Secondly*, outdated machinery, equipment, technology and technical facilities limit the increase of labor productivity.

Industrial machinery and equipment are the most powerful means of improving labor productivity. However, statistics show that only 2% of Vietnam's equipment reaches high tech level. 8% of Vietnam's equipment has average level. Over 80% of the equipment made in the 1960-1970s is outdated. After more than 30 years of attracting foreign investment, advanced technology from FDI enterprises transferred to Vietnam is only 20% while the rest is medium and outdated technology.

*Thirdly*, the business environment and competitiveness in Vietnam has been improved but still lower than regional other countries. The bureaucracy is still cumbersome. The number of government agencies has been reduced. However, internal apparatus of the ministries and the general departments has not decreased. The qualification of civil servants has not met the requirements of the renovation and global integration. In administrative reform, there are many unreasonable and complicated procedures, causing difficulties for enterprises and people. The time spent on some administrative procedures has been reduced, but are still higher than the average level of ASEAN-6 countries. The 2013 business environment report released by the World Bank showed that Vietnamese enterprises spent 872 hours each year paying taxes and insurance; much higher than regional and global averages. Vietnam was ranked 149th among 189 countries and territories in terms of tax convenience. According to the World Bank's Doing Business 2019 Report which has just been announced on October 31, Vietnam's tax payment index is 62.87, increasing 1.25 points compared to the Doing Business Report 2018. According to WB's

assessment, the time spent on paying taxes of Vietnam is 498 hours per year (including 351 hours on paying taxes and 147 hours on paying social insurances).

The above situation has explained the development of Vietnam's economy for recent years; and also explained a decrease of Vietnam's competitiveness index in the international arena. In 2008-2009, Vietnam was ranked 70<sup>th</sup> among 133 countries in terms of competitiveness index. However, in 2009-2010, the country fell to 75<sup>th</sup>. The report of the World Economic Forum showed that in 2014, Vietnam was ranked 68<sup>th</sup> of 144 economies. Compared to other ASEAN countries, Viet Nam's was behind Singapore's second position, Malaysia (20<sup>th</sup>), Thailand (31<sup>st</sup>) and the Philippines (52<sup>nd</sup>). The Global Competitiveness Report 2015-2016 showed that Vietnam was ranked 56<sup>th</sup> of 140 economies. For recent years, Vietnam's competitiveness has been improved slightly, but still lower than other regional countries. It is shown at the following chart.



**Chart 3: Global Competitiveness of ASEAN countries in 2017-2018**

*Source: The Global Competitiveness Report 2017-2018*

Fourthly, the level of organization, management and efficiency of using resources is still inadequate. Management capacity at macro and enterprise levels is still limited. Besides, there are also some "bottlenecks" in institutional and administrative reforms. The total factor productivity (TFP) has still contributed a relatively small proportion of Vietnam's GDP growth. This figure of Vietnam only reached 4.3% in the period of 2001-2010 while South Korea's reached 51,3%; Malaysia's reached 36.2%; Thailand's reached 36,1%; China's reached 35,2%; and India reached 31,1%. In the period of 2011-2015, the contribution of Vietnam's TFP to the GDP growth increased, but was still at the low rate (33.58%) while the contribution of capital was 51,20% and the contribution of labour was 15,22%.

The contribution proportion of TFP to the GDP growth reflects the low level of knowledge and the organizational, management awareness in the production and business of Vietnamese labor force, which cannot meet the requirements of modern production.

The public sectors have privilege in using assets, capital and resources, but public investment in general and most of state-owned enterprises are inefficient. The productivity of the domestic private sector has been drastically reduced, making this sector as inefficient as the state sector. Meanwhile, FDI is playing an increasing role; but there is no connection between FDI and domestic enterprises, causing a limited increase in labor productivity.

### *3.2.2. From enterprises and employees*

The number of Vietnamese enterprises is moderate; but the majority of them have small, scattered and outdated scale. Therefore, they cannot play a role to improve labor productivity and economic growth.

Until the beginning of 2018, there were about 702,000 enterprises in Vietnam. Nearly 98% of them were small and medium enterprises, 66.2% of which were micro enterprises. With small scale, moderate capital and lack of market information, these enterprises were not able to improve the labor productivity.

The enterprise sector which plays a very important role in raising labor productivity of the whole economy, is not really a driving force for the growth of labor productivity of the economy. The result from the enterprise survey shows that the average labor productivity of the entire enterprisesector in 2015 at current price reached 254.6 million VND per labor, 3.2 times higher than the labor productivity of the whole economy. However, the growth was lower than the increase of general labor productivity. In the period of 2011-2015, the average labor productivity in the enterprise sector (at current price) increased by 5.1% per year while the average labor productivity of the whole economy increased by 9.5% per year.

In the knowledge economy, *the outdated science and technology* is also a significant obstacle for the requirement of increasing labor productivity. At the seminar on "Safe and High-quality Products - Improving Competitiveness in The Development of Economic Integration" taking place on May 13, 2015; the representative of the Ministry of Science and Technology said most of domestic enterprises were using technology lagging behind the average level in the world. The level of outdated and very outdated equipment accounted for 52% while the modern equipment level was only 10% and the average equipment level was 38%. Particularly, in small production areas, outdated and very outdated equipment accounted for 70%.

*The serious shortage of skilled labor and surplus of unskilled labor is happening in all industries and economic sectors. The above situation has greatly affected the development speed of many industries. The logistics industry in Vietnam has been developing rapidly. There were only a few state-owned logistics companies in the early 1990s; but at the present more than 600 companies have been established and operating across the country. Human resources at the level of technical expert for logistics markets are severely deficient.*

According to the 2014 report on unemployment and jobs of the Institute of Labor Sciences and Social Affairs at the Autumn Economic Forum 2014, by the end of the second quarter of 2014, there were still over 43,760 million people, accounting for 81.75% of the labour force, were not well trained. The number of well trained labor with technical and professional qualifications was modest, accounting for about 18.25% of the total number of employees. This figure has increased very slowly (14.7% in 2010).

In 2012, the result from the survey on the ability of graduates from universities of seven Southeast Asean countries including Vietnam to meet the skill needs of employers, released by the World Bank, showed that Vietnamese graduates did not have enough good working attitude, creativity, information technology, leadership and problem solving skills. The report on Development of Vietnam in 2014 indicated that the majority of employers thought that recruitment was difficult because candidates did not have appropriate skills ("insufficient skills") or because of the shortage of labour in a number of occupations ("lack of skilled workers"). The survey of ILSSA-Manpower in 2013 also showed a similar situation. Nearly 30% of FDI enterprises had to face difficulties in recruiting direct workers and office workers. Most of direct workers and workshop supervisors did not have awareness of quality control, punctuality and reliability (30%). The following missing skills are flexibility, team working, learning and applying new technology, basic computer skills. This reflects the fact that the quality of training and education in our country is low; labor in Vietnam is working in positions that require higher or even lower training levels than their existing skills (redundant or insufficient skills).

*The working environments in many Vietnamese enterprises are not professional.* A lot of employers believe that their decisions are all above and are not good at motivating their employees to develop creativity. Many enterprises do not even recognize the achievement of their employees instead of appreciating them. The most important things for many enterprises is investment capital, consumption market, and minimization of necessary costs to increase profits. They rarely focus on creating conditions to reproduce their employees' labour. A lot of employers consider labour price as a criterion for a base. Besides, they manage and organize their labour

resources unscientifically. As a result, works arise from labour while right labour should be chosen for works.

Vietnamese workers are always considered as creative, intelligent and hard-working people. However, their weakness is lack of discipline and industrial mindset although they have been living for more than 30 years of global integration; and are currently living in the era of industrial revolution 4.0.

#### **4. Solutions to increase labour productivity at Vietnam**

##### ***4.1. For the State***

Vietnam needs to *develop a long-term and overall strategy to improve labor productivity*, which must start from the *economic development model*. It is necessary to change the economic development model based on capital, natural resources and cheap labour; to transform the economic growth from resource exploitation to green and sustainable growth. This change will create a higher value of gray matter, which accounts for a higher percentage of the cost of products, thereby contributing to increase GDP for the country in the long term.

Labor productivity can increase through a stronger *economic restructuring* path, from agriculture and low-end service sectors to manufacturing and high-end service industries. It is important to clearly identify the competitive advantages to invest in some major industries, and to avoid spreading investment; remove barriers for labour movement between industries, sectors, between rural and urban areas. The State should put priority on measures of labour productivity increase and improvement of job quality in agriculture. Besides, the agricultural sector must be restructured in market orientation, commercialized and less dependent on the State's intervention. If the products do not have stable output and cannot be sold, the added value cannot be high. Moreover, it is essential to take advantage of foreign trade opportunities, and effectively participate in global value supply chains. Some sectors that promise to bring high added value to Vietnam are in IT outsourcing, data processing and other outsourcing industries. The processing, manufacturing and service industries must be developed strongly in order to transfer labour from agriculture to industrial and service sectors which bring out high value. Industrial sectors must also transform their labour-based manufacture into technology-based manufacture to make products with high added value. It is necessary to expand the coverage of social welfare, including the national unemployment insurance mechanism. This measure will help to reduce the effects of economic structural shift and to support employees to work with higher productivity. It is necessary to improve the protection of migrant workers and systems for recognizing their skills, especially in the sectors in which the number of workers having low and medium skills account for a high proportion such as construction sector.

The Vietnamese Government should also restructure the economic model towards narrowing the scope of operation of inefficient state-owned enterprises, transferring incentives from state-owned enterprises to the domestic private sector having better labor productivity. Then *these state-owned enterprises need a comprehensive reform.*

In fact, the policy of minimum wage is counterproductive. Low wages cause low labor productivity. This policy allows employers to pay their worker an amount within the legal minimum wage. Therefore, it is reasonable to *let the market decide the wage* and not apply the above policy.

*The macroeconomic environment must be stabilized; the market economic institution and investment environment must be improved.* The quality of infrastructure needs improving. Enterprises need a clear and open legal framework. Administrative procedures must continue to be improved much more to meet the requirements of increasing productivity.

*Regarding education and training,* it is necessary to renovate the programs and methods in universities or higher education institutions. Especially, in vocational education, students should be trained more skills that meet the needs of labour market.

A model of human resource training in cooperation between schools, enterprises and scientific and technological research institutes should be built. Besides, the mechanism for this model is also necessary to achieve efficiency in life.

The government should focus on efficiently coordinating the national financial resources and avoid the scattered investments (schools were built, but there were not students). The current investment efficiency is not high; having no focus, no focal point and not being attached to the process of economic restructuring. It is also essential to strongly reform the financial mechanism for human resource training, expanding autonomy for training institutions. However, accountability from these institutions must be demanded.

It is important to have a national program of skill development for enterprises with a leading role in strengthening national competitiveness. The government should have a strong financial mechanism to encourage enterprises to develop skills for their employees; to have remuneration policy and to improve their working conditions. Boosting privatization in training vocational skills as many other developed countries have done is also considered.

The training system for skill development should be strengthened. The secondary education and vocational training should be improved to meet the increasing demand for workers with average skills.

Creativity is one of the most important competencies in the modern world. Therefore, it is necessary to build a creative society and to encourage creativity to improve the labour productivity. Even small initiative and creation need nourishing by the society; so the labor productivity will be higher.

Creativity, risk acceptance, persistence, no compromise on quality and devotion are essential qualities in life and competition, which must be trained for employees. It is necessary to explore educational methods to help employees form and develop these qualities. However, in order to promote creativity, intellectual property rights must be protected by law.

In countries having high labor productivity; high-ranking leaders, managers of enterprises and their employees try to find a way of boosting the productivity. Therefore, in Vietnam, participation of the whole society is also needed.

#### ***4.2. For enterprises and their employees***

The enterprise sector plays a very important role in the economy. Thus, improving the labor productivity in the enterprise sector will play a decisive role in raising the labor productivity of the whole economy.

According to the ILO survey on enterprises in ASEAN, about 92% of enterprises said that in order to improve labor productivity, it was necessary to train and improve the qualification of the staff. However, improving management capacity and leading the management team are really the solutions that bring out the highest efficiency. Initiative and determination are very important for enterprises. *It is important to raise the awareness of the management and director boards on the role of increasing labor productivity for enterprises.* Increasing labor productivity is a decisive factor to enhance the competitiveness of businesses not only in the short term.

Enterprises should assess themselves their level of science, technology and production organization in order to have solutions *to improve their scientific level, apply advanced and modern technologies* to the production. They should also encourage the business community, especially small and medium enterprises to innovate, create and support structural shift from activities with low added value to activities with high added value by strengthening human capital and spending more on research and development. Encouraging enterprises to invest in science and technology is an important factor to improve productivity and product quality.

The improvement of the scientific level and the application of advanced technologies to the production and business process also depend on the budget of the Enterprise; but the role of *organization of scientific and reasonable production* depends much on the will of the business management and administration apparatus.

Organizing the labour scientifically and reasonably does not cost too much, but will bring out economic efficiency if the head of the unit or Enterprise pays more attention to implement it.

Technological innovation plays an important role in increasing labor productivity. Newer and better technology will bring more efficiency. However, technological innovation is not the most important thing. Human resources is the most important factor because the work efficiency will not be high if modern machines are manipulated by unqualified workers. According to studies by experts, if two enterprises have the same technology but one enterprise creates a work environment that satisfies the employees, their products will be more different than the other enterprise. Enterprises need to *build a working environment* that can motivate their employees to actively improve their productivity and efficiency. Managers need to set up a system encouraging their employees to increase the labor productivity. All comments of employees must be received by the high-level managers to improve the production process and to boost the work efficiency. It is necessary to promote the internal strength of enterprises, the ability of employees and especially the spirit of solidarity for the goal of development.

In order to improve the quality of management and administration apparatus of enterprises; *the recruitment, allocation, usage and management of human resources must be changed first*. It is important to select the qualified people with good working attitude. Moreover, it is necessary to focus on training employees to improve their leadership and professional competencies that are suitable to each job position. The cost of training to improve the competency of the management and administration apparatus is an investment that brings out economic efficiency to the present and future of enterprises. Besides, salary policy must be reasonable; so that salary is really an economic leverage to increase labor productivity. Enterprises need to *distribute ownership to their employees* by issuing shares to them and paying them dividend.

*Enterprises must also help the employees raise their awareness about the role of increasing labor productivity*. The employees must understand that increasing labor productivity is a decisive factor to improve their legitimate income. It is necessary to change the mindset of Vietnamese workers. Particularly, workers must aware that they are responsible for the development of their enterprises; and are also co-owners of the enterprises. Workers need to have self-management in their knowledge, work, and skills. They pay salary to themselves from the efficiency of work.

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# HOW TO SUPPORT EMPLOYMENT FOR THE ELDERLY THROUGH THE INTERGENERATIONAL SELF-HELP MODEL

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## **Abstract**

*Vietnam is in the process of population aging, there is still a large proportion of the elderly living in rural areas who continue to work for getting extra income to save themselves and support their descendants. However, the elderly have problem with health and suitable requirements for finding a suitable job. The question is that how to help the elderly find suitable job. To answer this question, both qualitative and quantitative analysis is chosen. Descriptive statistics are used to describe the relationship between factors and employment support for the elderly, while multivariate regression is used to find the determinants of effective employment support, then suggest recommendations to better employment support for the elderly in this model. In addition to secondary data collected from articles, studies and reports by the General Statistics Office, Population Commission, etc., primary data was collected through in-depth interviews of six local officials and ten elderly in the suburbs of Hanoi to assess related issues in management and implementation of policies. The study results show that the Intergenerational Self-Help Club (ISHC) model has contributed positively to improving the lives of the poor and near poor elderly, helping them to get jobs through livelihood activities supporting employment in such many aspects as: Be trained knowledge - techniques of cultivation and husbandry; Borrow capital for production; Be provided with seedlings and breeds; Be learned and shared production experiences; Be introduced suitable jobs helping them improve their incomes significantly, get jobs suitable to their health conditions, and improve their living standards, the replicated model not only contributes to raising living standards but also helps the elderly to live happily, healthily through diverse activities. This is an effective, low cost model that is well suited to urban, rural, coastal and ethnic minority and mountainous areas. Since then, the article has proposed some solutions to replicate the model as: Increasing production capital; strengthening training of production techniques for the elderly; diversifying the areas of help in the employment support in the model; mobilizing resources from the community; Mobilizing stakeholder participation to help the elderly have decent jobs.*

**Keywords:** *The elderly, employment/job support, Intergenerational Self-Help Club Model (ISHC)*

## **1. Introduction**

Vietnam has officially entered the "aging population" period since 2011 and is one of the fastest aging countries in the world. In 2017, the number of elderly people accounted for 11.9% of the total population, meaning that 1 in 9 people aged 60 and over. According to the General Statistics Office, by the year 2038, the population aged 60 and older has more than 21 million people, accounting for 20% of the total population. When moving from working age to old age, there is still a significant proportion of elderly people continuing to work and then they do no less than the population still in working age. However, the elderly are no longer in good health as well as some other conditions to easily find a suitable job, so the job support for the elderly such as capital, technology, source search output for products, new vocational training, especially the creation of legal and policy corridors is really necessary in order to create conditions for elderly people who have jobs to generate income as feasible supports; contribute to solving social security policies and reduce costs for society. The Central Committee of the Elderly Association has a scheme of ISHC model to help each other in localities to obtain positive results. The model has been implemented in 9 provinces and cities in the North: Hanoi, Hai Phong, Vinh Phuc, Hoa Binh, Ninh Binh, Hung Yen, Bac Ninh and Hai Duong. The objective of the program is to support localities to implement Decision No 1533 of the Prime Minister (August 2, 2016) on replication of the ISHC model to help one another, through the implementation of clubs, setting points, and improving the capacity of the Elderly Association at all levels and local authorities in support, management and replication of the club. The ISHC model is a model that incorporates care activities - multifaceted assistance, supporting job creation for the elderly through clubs and livelihood activities; entertainment; communication to raise awareness about policies with the participation of the State and social organizations. The model focuses on "intergenerational" and "self-help" approaches to help older people access jobs and resources to get jobs, improve incomes and living standards. Livelihood activities create jobs and increase income, provide loans in kind (crops, livestock, cash...) and instruct training ways of production and business to create jobs, raise income, level living for the poor and near poor elderly. The jobs that connect and support for the elderly are mostly traditional jobs, in order to bring into play the natural strengths in the area and the experiences in the production of the elderly such as: planting jobs cultivation, animal husbandry, small industry and handicraft... The construction model mainly focuses on the elderly in rural and suburban areas, because 60% of Vietnamese elderly people work in agriculture, forestry, fishery, and pension like no, have not had access to high quality health care services. In order to replicate the effectiveness of the model in localities, this article explores employment support for the elderly in the

suburbs of Hanoi through the inter-generational model of helping each other and supporting activities. Support provides positive signs for employment support for the elderly. The paper also proposes some recommendations to stakeholders to promote the effectiveness of the model in employment support for the elderly in the future.

## **2. Literature review**

In the context of continuous population aging trend in many countries around the world, there are many researches on the elderly to propose appropriate care and support models. In the Asia-Pacific region, there are also many studies on the elderly, which have been carried out since the 1980s, such as: "Research program on health and social and economic aspects of aging of the population", conducted by the World Health Organization in the Asia-Pacific region in the early 1980s of the twentieth century; or a study on "Development of local policy to deal with population aging" conducted by the Asia-Pacific Council from 1992 to 1994 in 6 countries, including Vietnam, research has pointed out the trend of population aging and set policy directions for population aging.

M.Nizamuddin (December 11-14, 2002), *Report prepared for the Asian Population Conference - Pacific Fifth, Bangkok - Thailand*, addressed the issue of population aging and proposed solutions to population aging in the Asia-Pacific region, emphasizing demographic transition leading to population aging, an inevitable consequence of rapid fertility decline and sustained improvement in mortality is aging population; socio-economic impacts of population aging; policies and programs, models of care and support for older people and community involvement in coping with aging

UNFPA and Help Age (2012), In the plenary session on December 18, 2014, the United Nations adopted Resolution GA/RES/69/146 on the work of the elderly, in which the Resolution gave 52 What needs to be done, stressed to hold regular meetings to get opinions from member states and NGOs on July 14-16, 2015 at the United Nations headquarters at New York, USA for elderly care and support activities.

In Vietnam, studies on the elderly are more concerned since the establishment of the Elderly Association (1995); the Ordinance on the Elderly (2000), with the Law on the Elderly (2009); The National Action Program for the Elderly (2012-2020) was enacted and the population aging trend began in late 2011.

Research on "*Elderly people and issues posed for social policies*", 1999 of the Ministry of Labor, War Invalids and Social Affairs. The results of the project have made recommendations to the Party and the State to soon issue synchronous policies for the elderly to take better care of, "Care and promote their role in the cause of innovation",

1999 of the Ministry of Labor, War Invalids and Social Affairs, pointed out that care must be associated with promotion and good care to promote good and vice versa.

Research on "*The Elderly's Life*" by the Department of Social Affairs, Office of the National Assembly, conducted in 2000, has shown about the material life of the elderly: More than 60% of people consider it difficult, 37% considered average, 1.0% ample. In addition, the study also showed that the material life in Hanoi is higher than in Thanh Hoa but the proportion of elderly people who feel uncomfortable is 5 times higher in Thanh Hoa. On the contrary, in Thanh Hoa, there is a high proportion of elderly people who feel comfortable to live 3 times higher than Hanoi. Research has reflected the panorama of the material, spiritual life and health status of the Man. advanced in the area of the study.

Central Vietnam Women's Union (2004) conducted a survey on "*Status of life and participation of Women's Union of elderly Vietnamese women*" in 7 provinces across regions of the country with 557 women from 50 years and older were interviewed about information related to the needs of elderly women and the awareness of Women's Union levels on issues related to them in the community.

Dang Vu Canh Linh (2009), in his book "*Elderly and models for elderly people in Vietnam*", a research project in collaboration with the Committee for Population, Family and Children with the Research Institute. Tradition and Development in 2008 - 2009. This is a collection of research conducted in 3 cities of Hanoi, Da Nang and Ho Chi Minh City, with target groups such as support service providers Elderly people, support users, local officials and the community. According to the author, in recent years many types and models of support services for elderly people have been formed and operated, especially private models, links, community models ... developing. quite strong however there is no investment or no attention of all levels.

Mai Thi Kim Thanh (2012), "*The Elderly Care Support Model in Vietnam - The Philosophical Foundation and Lessons Learned*", emphasizes the model of assistance focused on Social Protection facilities in the community through clubs, nursing homes, social houses. These assistance models have a significant impact on the quality and support activities and life of the elderly. From these models, the author pointed out the philosophical foundation in the operation, organization of the models and proposed lessons of experience in the construction and design of models of elderly assistance, aimed at improve living standards for the elderly.

Nguyen Van Dong (2014), in the article "*Intergenerational Club to help each other - models to support employment for the elderly*" mentioned the operational situation of the ISHC model to help one another in Vietnam, an in-depth analysis of the operation of the model, the organizational structure of the club. The author has

pointed out the impact of the ISHC model on elderly lives in all aspects, the effects that this model brings: not only to help the elderly improve living standards and models, has created jobs and improved their income through livestock-farming-handicraft-livelihood activities, a model to protect the rights and benefits of the elderly through communication activities on policies and models superiority when it mobilizes participation and resources from the community; At the end of the article, the author also proposed key solutions to improve the quality of the model's activities, new policies and mechanisms proposed to model the operation effectively and replicate.

### **3. Research methodology**

Data source for research are both primary and secondary data. Secondary data sources are collected through documents of the General Statistics Office; General Department of Population and Family Planning; Ministry of Labor, Invalids and Social Affairs; Ministry of Health and State administrative agencies and organizations, regulatory documents; laws of all levels; reports of management levels; scientific reports; scientific journal article; workshop materials, published researches. Primary data sources collected through in-depth interviews in two communes (Thanh Liet and Ta Thanh Oai) of Hanoi suburbs (05 elderly people per commune; 01 leader and 02 association officials). Based on these data, the authors have synthesized, analyzed, qualitatively and quantitatively compared to draw on the characteristics of the elderly participating in the ISHC model.

### **4. Research results**

#### ***4.1. About the characteristics of the elderly to join the ISHC model***

From the survey data of 2 communes in Thanh Tri district, Hanoi, it is shown that the ISHC model helps one another to organize inter-village, every 1-2 villages establish a club with the number of 50-70 members are elderly participants (male from 60 years old and female from 55 years old and older), of which: mainly aged 60-64 accounting for 44%; followed by the age group from 65-69 (accounting for 35.5%) and finally the 70-74 age group accounted for 20.5%; Women are the majority with 67.5% and men account for 32.5%. The members of the main clubs currently living with their spouses are 55% and widows account for 37.5%, of the rest are single; members of the club are 70% poor, near poor and have circumstances hard.

Regarding the income source of the elderly: The elderly who get pension accounts for a very small percentage of 1%; 28% for social assistance and 33% for adopted children. This is also commensurate with the characteristics of the rural communes and those who participate in inter-generational models who need support in order to have more income. According to the survey, the elderly have a good standard of living accounting only a very small percentage of 2% in published reports.

Poor living standards account for 39.0%, near poverty is 42.5% and only 16.5% of the elderly surveyed have an average living standard. In some respects, the employment support for the elderly to have more income is of great practical and necessary significance instead of relying on social security policies in the context of the country facing difficulties and support from the present descendants before the trend of existing nuclear families.

#### ***4.2. The status of supporting employment for the elderly through the ISHC model***

##### ***Firstly, supporting capital and production materials***

Capital and material support for the elderly plays a key role (accounting for 73.5%) of livelihood activities to help the elderly generate income. In addition to helping the elderly to access capital by money, there is also the provision of seedlings and breeds, which is also a form of helping elderly people access capital in kind.

From the survey results of 200 elderly people participating in livelihood support activities in ISHC model, in the area of 2 communes of Thanh Liet and Ta Thanh Oai showed that when participating in activities, the proportion of elderly people who have access to capital and "Loans for production" is the most basic assistance, accounting for 73.5% of the elderly participating in the response. This shows that the elderly who participate in the model have a high rate of access to capital, the remaining 26.5% through the survey is in the group of 70-74 years old and has weak health for the purpose of participating. The model is taking care of spiritual life and supporting health. This rate is similar to the question of the current health status of older people participating in the model (weak health 23.5%; normal 64% and healthy 12.5%).

The assistance "Being provided with seedlings and breeds" accounts for 59.0% of the elderly people, and this data shows that many elderly people who are not supported by money lending are also supported with tree loans and breeds. Elderly people in the survey area mostly come from cultivation and animal husbandry, so it is appropriate to support seedlings and breeds, reduce one step to select good seedlings and breeds suitable for the elderly. These assistances play a very practical foundation to help elderly people to participate in livelihood activities in a better model.

*"I joined the ISHC in Thanh Liet commune for more than 3 years now, I myself borrowed money to raise pigeons, the loan of 4 million I brought pigeons and study How to raise birds that the staff of the training model, instructed, every year I have 2-3 times to sell pigeons, the amount of interest I extracted to multiply the birds, I see the livelihood activities for people The old capital is a very good and suitable activity for the elderly, helping us have the opportunity to expand our knowledge of doing business and generating income "(Member of Thanh Liet ISHC).*

*“Supporting three breeding pigs for raising for meat and sowing, I used part of the money to sell pigs to buy food and to spend the rest to pay school fees for my niece, and I sow I still raising to maintain piglets and each time I donated 3 breeding pigs to the club to make capital for members more difficult and unsupported. The club really helped me a lot” (Member of the Ta Thanh Oai ISHC).*

### ***Secondly, support training in knowledge and techniques***

The lending and supporting activities of trees and breeds are the main activities of the model, but the training of knowledge and techniques to effectively use resources plays a very important role of the model (accounting for 56.5%). The staff involved in training and technical support includes: representatives of HAI staff, officials of Women's Union, Elderly Association's staff, Front officials Fatherland, officials of Farmer's Union, social policy officials, elderly people who are the leaders of clubs, elderly people with experience are those who have basic knowledge of expertise and training regularly.

Training on knowledge and techniques of cultivation for the elderly among 200 elderly people surveyed showed that the trained area of cultivation techniques and knowledge (64.5%) accounted for a high proportion. This shows that training knowledge and cultivation techniques help older people access more modern techniques and better new varieties. Elderly people have been associated with farming for many years, but many new varieties are more effective that require updated care knowledge properly.

When being asked about "Training on knowledge and techniques of breeding" for 200 elderly people surveyed, it was found that training support for knowledge and techniques accounted for 64.5%. This shows that the model's activities are very close and support for the elderly in cultivation and animal husbandry. Cultivation and husbandry knowledge and techniques are one of the factors determining the success of investment in economic activities in these two areas.

*“I have been in the model for nearly 4 years, initially did not have production knowledge, so production investment loans are also very worrying, but after being instructed, supported and trained by officials and volunteers, I and other Elderly people also felt more confident to participate in production, I borrowed money from the Club to raise a sow, each year I was able to export 2 piglets, supported to do business. Many things are supported so we are very confident (Member of the Ta Thanh Oai ISHC).*

Of the 200 elderly people surveyed, up to 49.5% of people have learned and shared production experiences, showing that this segment is also done at a rate of 49.5%. With this rate does not show that the exchange is limited because for the elderly in the two surveyed areas, cultivation and animal husbandry are almost tied

to them for many years, so each person has accumulated for themselves. I have the necessary experiences and are regularly exchanged in those years. There is an exchange between the members of the club, which may be the exchange of new knowledge and exchanges between the trainees and the non-participants.

In Thanh Liet commune, elderly people received training on knowledge and cultivation techniques, accounting for 55.8% and 44.2% in Ta Thanh Oai commune. This data shows that the proportion of elderly people trained in cultivation techniques in Thanh Liet commune is higher than that of Ta Thanh Oai commune, the reason may be more active by the model management board in Thanh Liet commune than that of Ta Thanh Oai commune. With similar characteristics, the two communes are agricultural communes and the urbanization process is not much different, so the cultivation of short-term crops such as vegetables and fruit trees is very suitable for the elderly health and consumption are easier.

*“The cultivation of vegetables is also simpler and suitable for the health of the elderly so I have to grow a few seasonal vegetables, the consumption is also easy because there are people who come to the field to get a trade. Due to the training on techniques for growing clean vegetables, the vegetables of the elderly are very trusted. Making money from working is very fun and work and exercise is not very hard. Every month, I also have plenty of money to spend and there are few sick rooms” (Member of Thanh Liet ISHC).*

In the area of Ta Thanh Oai commune outside of agriculture, the elderly also have extra jobs such as wine making, so focusing on cultivation is also less than Thanh Liet commune, which is also a reason for training knowledge and skills. The art of cultivation for the elderly in Thanh Oai commune is lower.

The training section of knowledge and technical knowledge about breeding in Thanh Liet commune is 53.5% and 46.5% in Ta Thanh Oai commune, showing that the raising of the elderly in 2 communes is also an activity - major livelihood dynamics of the elderly. This shows that the training on knowledge and technical training in raising animals in Thanh Liet commune has a higher rate than that of Ta Thanh Oai commune. This difference is due to that in the two localities the propaganda and support of model staff in two localities is not uniform and awareness of participation in economic activities creates income for themselves in two different areas.

When interviewing about the training on knowledge and techniques of animal husbandry of model staff in Ta Thanh Oai commune and answered as follows: *“We have been trained by project staff and have shared experiences with other communes regularly, then also re-organized training for the elderly in the Club, many elderly*

*people have experience and are guided by their children at home so they don't listen to the experience often” (Model officer at Ta Thanh Oai commune).*

In the support of "Learning, sharing production experience" this rate is higher than in Ta Thanh Oai commune (56.6%) and lower than in Thanh Liet commune (43.4%). This difference is maybe mainly to the process of organizing activities to support job creation in the two communes, technical training classes and communication sessions equipped with production knowledge are organized with the difference in the frequency of implementation in each locality, therefore, the participation of the elderly in this activity is markedly different.

### ***Thirdly, job introduction support***

Employment introduction for the elderly is one of the activities to help the elderly have more income, improve the quality of life. Through the survey, 18.5% of senior citizens participating in the model were introduced to suitable jobs, the reason is that this rate is very limited due to participating in the loan model and participating in technical production training classes. Then elderly people have created jobs for themselves, only a small number of elderly people are unable to develop their own production activities but due to their ability to work, so the model has vocational training - Technical training and introducing them to jobs suitable to health conditions to generate income for themselves, this activity is also in the activity of supporting livelihoods to create jobs. From the ongoing support with many different areas of support, livelihood support activities to create jobs are really promoting a strong effect in helping older people get jobs, creating a source of income to support their livelihoods and improve living standards. Because in Vietnam nowadays more than 70% of the elderly live in rural areas, work in agriculture. After the age of 60, they are still healthy so the majority of older people will want to continue working to generate income, not rely heavily on their children.

However, appropriate job introduction support for the elderly is still limited and the jobs introduced do not have long-term stability. So the formation of appropriate employment support services suitable for the health conditions of the elderly is necessary and managed and monitored to create conditions for the elderly to access appropriate jobs to bring income for the elderly.

### ***Fourthly, support for policies and legal procedures***

In this area, elderly people are interested in supporting legal procedures for import and export of goods, and policies to support the consumption of products for the elderly. However, this aspect is still limited, because of the general difficulties of the market.

### ***4.3. The role and effectiveness of ISHC model***

It is the participation in livelihood support activities which is an important core foundation for the change of the elderly in all aspects: improving income, improving living standards for themselves and their families. Thanks to participation in this activity, they themselves have knowledge, techniques and production experience, have suitable jobs. More importantly, after participating in this activity, the awareness of elderly people participating in economic activities improves. After the age of 60, they are changed, they are useful people, dare to think dare to do it, they are more confident in making investment decisions. Therefore, it can be seen that livelihood activities supporting jobs for the elderly in the ISHC model help each other effectively and have a great impact in promoting the role of the elderly in society. Based on the survey results of 200 people in Thinh Liet and Ta Thanh Oai communes, Thanh Tri District, Hanoi on the changes of themselves after participating in activities to support jobs in the ISHC model in four aspects: Changes in living standards, income, spiritual life, production knowledge and techniques and policy understanding show that the effectiveness of the model's impact on the elderly is significant. 69.5% of the elderly surveyed said that after taking part in the ISHC model, their income and standard of living "improved slightly" and 30.5% said after participating in the model - the living standard gets "Good improvement", no one has rated "Not improved". This is a significant success of the model.

Income and living standards are related to the spiritual life of the elderly. Regarding changes in "Spiritual Life", 70.5% of elderly people rated "Improved little" and 29.5% of them rated "Good improvement", no one beaten "Not improved". Because income and living standards have only improved at an average level, so the material and spiritual life of the elderly has not improved well, so more intervention and deeper support of the model is needed, improve the material and spiritual life for them when participating in activities in the model.

Regarding the change in "Knowledge and production techniques", 62.5% of the elderly found their own knowledge and production techniques "Improved well" and the remaining rate was 37.5 % of them rated at "Improved little", no one rated at "Not improved". That proves the training programs and training classes equipped with knowledge and techniques transfer are held regularly in the model that has helped many elderly people in production activities, focusing on people with good health conditions, actively participating in supporting livelihood activities to create jobs organized by the model.

The number of elderly people who participated in the survey said that they have changed at the level of "Understanding policy more", which accounts for a

relatively high proportion in the elderly group who rated at "Good improvement", the remaining rate with 36.5% belonged to a group of people who rated "Little improved", no one rated "No improvement". This result shows that communication activities to raise awareness about policies for the elderly have brought about positive effects, the elderly have good understanding and awareness of policies, have access to information on policies, know how to solve difficulties and problems in the process of approaching policies.

It can be seen that the effects of employment support for the elderly in the ISHC model to their lives quite deeply, helping to improve: health status, income - living standards, material - spiritual life, knowledge - production techniques, knowledge of job creation policies. The achieved results are only the first step but play a fundamental and key role in the next support orientation of the model of sustainable development, creating for the elderly the basic resources for life improvement in general.

According to the results of an evaluation study on the impact of the ISHC club of the Institute of Medicine - Sociology, this model has a comprehensive impact on the elderly and the community through: members can get loans and transfer of science and technology, can increase 50% of income after three years, contributing to poverty reduction for the elderly and families. The member's health is better due to training and self-care knowledge. Promote mutual understanding and support among members, generations, between people who are difficult and not difficult; linking the village's neighbors, promoting the movements in the community and well implementing the laws and policies on the elderly. Moreover, the club's activities also change the way of looking at the elderly, about contribution and promotion of the internal strength of the elderly; contribute to good work of the elderly. Many national and international experts also recognize that ISHC as a model with high humanity, comprehensive support for the elderly and the most effective, facilitating support for the poor elderly with difficult circumstances rise out of poverty.

## **5. Conclusion and recommendation**

Supporting employment for the elderly from community-based approaches is a right direction, consistent with the situation of the population and socio-economic and infrastructure conditions in Vietnam today. Since then, it will build a system - "Family, State and community participate in supporting and promoting the role of the elderly", bringing Vietnam to achieve the National goals for the elderly, create jobs to improve living standards, living conditions, improve income for the elderly. Because livelihoods support employment for the elderly in the ISHC model is an activity that attracts a lot of senior citizens to participate. In the livelihood activities

to support senior employment, assistance is provided such as: training on cultivation and animal husbandry techniques; equipped with production knowledge; loans of VND 3-5 million/ person and are provided with seedlings and breeds; oriented product output; job creation and stable income, improved family economic conditions. From the research results, the demand for jobs and income for themselves in the elderly is very high after 60 years of age. Participating in livelihood activities to support jobs, most of the elderly have jobs, generate income to support themselves and improve their living standards. From research results, it is shown that supporting jobs for the elderly through community-based models in line with the current aging population trend in Vietnam. In order to promote supporting jobs through this model, the stakeholders should pay attention to some aspects as follows:

*Firstly, increase production capital*

ISHCs help each other build credit funds from projects to lend money to members, develop their businesses and increase their incomes. Each club is mobilized from 60-100 million for difficult members to borrow capital for small and medium production and business. Each member can borrow about 3 million in 1-2 years with preferential interest rate of 1% /month. With common production methods: raising calves, chickens, pigs, planting trees, vegetables, selling water, handicrafts ... the club not only provides loans but also provides many supporting activities: Disseminate knowledge to increase income, coordinate with agricultural extension to provide plant and animal breeds; training in science and technology transfer; promote and introduce products... The clubs manage their credit capital very well. When the projects withdrew, they still left the capital for the club to operate.

In the coming time, to be able to replicate this type of model, it is possible to support capital for the elderly in clubs so that the elderly can invest in production and need the cooperation of the State and the community to mobilize capital for the operation of the model. Launching a fundraising campaign for the model's activities in the whole population and focusing on a number of orientations should be taken into consideration such as diversifying capital sources for the elderly and making senior people active for production and business activities. In order for senior citizens to use loans effectively, close supervision of the ISHC model management board is required and there is a regular report on the effectiveness of the loan resources; continue the form of loans through three forms: cash, in kind and tree - seed, in combination with training of effective production techniques to minimize risks in using loans of tall people year old.

*Secondly, strengthen training - technical production training for the elderly*

In order to support jobs for senior citizens in a sustainable way, attention should be paid to training - production technical training for the elderly, at each club,

a core group should regularly organize digging activities, create and train the elderly, the cadres of this core group are those who are trained - to train a specialized article on cultivation and animal husbandry, understand the specific conditions of each locality and model livelihood, to equip production techniques for the elderly. Moreover, it is necessary to regularly organize training on techniques of cultivation, animal husbandry, effective use of capital, prevention of diseases for plants and animals for the elderly jobs in the model. Model management staff, management board of ISHC should frequently go to the area to directly guide how to produce techniques for the elderly to better support them.

*Thirdly, diversify the areas of job support activities in the model*

Accordingly, apart from specific activities such as: borrowing money in cash, borrowing capital in the form of objects - seedlings and breeds,... the production and business activities of the elderly (cultivation, animal husbandry, cottage) industry is a profession suitable for health conditions, conditions of senior loans, so it is necessary to expand to activities such as retail business services. It is strongly recommended to pilot new activities, especially those that are suitable for the health of the elderly and the capital that the elderly have. Orient and connect the outputs for the products that the elderly do. From input to output stages, the product should be evaluated and structured to suit the market demand as well as avoid other risks for them.

*Fourthly, mobilize resources from the community*

Continue to mobilize community contributions to support job creation for the elderly. It is necessary to coordinate collaborative roles from many sides such as families, local authorities, organizations, departments, unions and volunteers. It takes the role of family as a center to create a solid foundation for long-term support activities. Local departments, mass organizations need to actively integrate political, economic, cultural, social, health, educational programs and community-based activities in association with boosting the role of elderly people in the society, create conditions for them to participate in the labor market, get suitable jobs to their health conditions and capacity, to reduce the burden on local welfare issues. Promoting extensive communication and propaganda in the community of legal documents, policies and regulations relating to the issue of creating jobs for the elderly to promote their work. Models also need to have a legal basis and open mechanism so that organizations, unions and individuals inside and outside the country can participate in helping the elderly in the best way.

*Fifthly, mobilize the participation of stakeholders*

In the coming time, in addition to mobilizing traditional organizations such as the Elderly Association, Women's Union and the help of Help-Age International

Organization (HAI)... the activities need to mobilize the role of other local organizations participate in helping and creating jobs for the elderly. The role of organizations involved in livelihood activities should be clearly defined in the model, in which HAI plays a role of technical support and organizations. The Elderly's Association and the Women's Union play a pivotal role, combining the mobilization of resources from other social organizations in the locality such as the Red Cross, Farmer's Association, Veterans' Association Youth Union, the enterprises in the locality, at the same time mobilize the participation of families and themselves actively and actively participate in livelihood activities to support their jobs. Livelihoods supporting employment for the elderly in the locality are changing and sustainable mainly in the awareness and participation of the elderly subjects, and the encouragement, facilitating and helping of the elderly family, see the role of the family as a nuclear role to spread support activities.

*Sixthly, officials and model staff need to be more active in supporting jobs for senior people in the ISHC*

Officials and staff need to regularly participate in training and training activities to improve capacity, skills and professional skills in the intervention - to assist the elderly, especially in the field of project management model management, operational management. Enhance monitoring activities, local field activities to support and train better techniques for older people in livelihood activities to create jobs, to minimize risks of production activities for the elderly. Update and apply new information, knowledge, skills and techniques to train, share, intervene - help people better.

*Seventhly, elderly families need to be more active in mental stimulation for the elderly*

Elderly families need to create favorable conditions and help elderly people in their families to access programs and livelihood activities to support the employment of the model in the best way. Coordinating with officials and model staff to actively participate in supporting jobs for the elderly in the ISHC model.

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# HANDICRAFTS, POTENTIAL SUSTAINABLE SOCIOECONOMIC DEVELOPMENT OF RURAL COMMUNITY IN KACHIN STATE, MYANAMR

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## **Abstract**

*Since early culture, handicrafts are essential to support cultural decoration in rural communities. This study is critically examined the development of handicrafts and art and how does potential in sustainable socioeconomic development in communities. Because of geographic features such as topographic features, climatic condition and rich biodiversity that provide housing, clothing, and foods. Cultural creation in weaving patterns, painting designs, household utensils, tools, arts are communities' development opportunities depend upon relationship among human activities, natural environment and quality of creativity. Useful plants diversity including roots, leaf, herbs, buds and flowers, fruits, seeds and nuts, fibre and dye, bark and leaves etc. The study discuss cultural and traditional handicrafts qualitatively and descriptive design toward sustainable socioeconomic development and environmental sustainability. The results of the study show that handicrafts and art, design are vital for potential socioeconomic development of rural communities that are contributed and also facing with challenges. So these both opportunities and problems need to be studied.*

**Key words:** *Handicrafts, cultural decoration, rural community development, sustainable development, quality, socioeconomic, opportunities, problems.*

## **1. Introduction**

The purpose of this study is to illustrate the handicrafts for socioeconomic development and environmental issues in development. According to study, there are different varieties of handicrafts which are made by jade, silver, gold, and amber, stone crafts as jeweler. Handicrafts made by bamboo, rattan, fibre, threads, and etc. with pattern/ design and symbols which are interpretation of meaningful human being and painted by resin, wax, to decorate cultural handicrafts. Kachin State is part of the Sino-Myanmar mountain ranges and Sino-Himalayan region being flanked by China-Myanmar frontier ranges are also known to be transitional zone of Indo-Malayan and Sino-Himalayan flora and fauna. Kachin State is source of collection of raw materials

such as woods, bamboo, cane or rattan to make handicrafts. These specificities that provide both problems and opportunities on sustainable socioeconomic development and environmental sustainability which depend upon human activities are vividly brought out.

**Aim and Objectives:** This paper aim to be explored different cultural and traditional symbols, patterns, marketing and environmental problems concerning handicrafts in Kachin State.

**Objectives:**

- to study cultural structure relevant to natural environment
- to analyze socioeconomic and environmental issues in development on handicrafts
- to contribute information about handicrafts in Kachin State

**2. Research Methodology**

The qualitative and descriptive research methodology is used in this study and focuses on significance the cultural symbolic handicrafts and express on related socioeconomic development with environmental aspects. The literature review is the first step of Objective and research Methodology. Then analysis and interpretation of the study of the handicrafts and the result and the conclusion show the potential marketing in the present market environment of handicrafts.

The study of handicrafts in Kachin State is observed through the following approach:

Area: Studies of cultural landscape and natural resources utilization. Economy: Studies of crafts, arts, patterns and yield market potential. Culture: Studies of tradition of community groups, customs, and lifestyle. Technology: Studies of indigenous technology knowledge, and quality of handicrafts. History: Studies of sequential development and process under traditional natural environmental management systems.

**Data collection**

Data was collected from several sources, mainly from personal observation on local traditional and cultural patterns of handicrafts. The other data gathering from online source, interviews with key informants, made discussions with age old persons, participation in cultural occasional ceremonies such as Manau celebration and documentation. The researcher's own experiences also provided additional information, the eliciting of the data, which were related to the handicrafts. The secondary data includes journals, annual reports, e-books and online search etc. and primary data collected through a data collection and schedules for the handicraft study in Kachin State and also in Myanmar. In order to study about issue the researcher has

collected primary data from the small scale producers through random survey and descriptive technique, factors analysis for the crafts producing, utilization and trading.

This study is analyzed as four aspects of descriptive research methodology.

### ***2.1. Geographic review***

Kachin State is situated in northern part of Myanmar. It is mountainous and watershed area of Ayeyawaddy River and Danai Hka or Tanai Hka, upper portion of Chindwin River. These mountain systems extend meridianally from north to south with perpetual ice and snow especially in winter months.

The climate of the Kachin State is mostly influenced by altitude and mainly by monsoon climate. There are different soil types and these are under mountain cover, the most primitive conifer and tropical rain evergreen forest.

The study area encompasses an altitude ranging from 400 ft to 19315 ft, steep valley side slopes, and vertical zonation of vegetation ranging from subtropical evergreen, mixed deciduous and coniferous forest to temperate alpine rangeland. These natural forest resources provide necessities of cultural and traditional handicrafts as designs, patterns, symbols, and telling descendant clan histories of ancestral communities which are handed down to generations. They have existing knowledge, values and cultural expression concerning handicrafts which was distilled from aged old relationship with culture and gradual innovation experience. The relationship and interaction between geographic environment and human cultural creativities are major source of potential economic and environmental in sustainable development.

### ***2.2. Cultural perspective***

The rich natural forest resources and traditionally have served as the foundation for the cultural life of the indigenous people. Variations of altitude, geological structures, and soils result in an amazing variety of micro-environment and biodiversity that have influenced the handicrafts use system and culture of indigenous communities. It has an intricate network of mountains ecosystem, which gives the region a unique beauty and meaningful cultural design and traditional patterns of handicrafts and other interesting features decorated by symbols and potential ecotourism in Kachin State.

Some example of cultural meaningful patterns can be described as follows:

- Sai ru maka (Hairpin pattern): hairpin is traditional accessory of Kachin women and to memorize traditional custom.
- Mazup maka(confluence pattern): It means uniqueness of natural landscape and full of biodiversity that need to conserve for sustainability of natural

environment. It is very important to know every person in generations and shared with patterns. An example, Mali- Nmai/ Myitsone, very important for Ayeyawaddy River and unique natural landscape, source of cultural communities and rich biodiversity need to conserve for future generations.

- Baren maka (dragon pattern): historical interpretation of Kachin people. (When the dragon bride married with human bridegroom, dragon bride remembered her parents and she show her remembrance with dragon pattern.)

- Wa hkum tum maka (marrow seed pattern): its means becoming increase prosperous life due to a marrow seed can bring much marrow squash.

- U lai lap maka (leave of any kind of plant): when the people meet food scarce like rodent destroy rice crops, so the people substituted this kind of plant as food for their survival was expressed by the pattern of that leaves to memorize and the plant to be preserved.

- Ka ba sing-gaw (zig zat pattern): it means unity and one direction. When Kachin people celebrate Manau Dance with leaders in two parallel rows means unity is interpreted as pattern.

- Gaw-hkyi (hook pattern): This pattern shows that when worshiping Thunder spirit, the people give sacrifices at the hook on the altar was made a hook pattern.

- Kahtan sing-gaw (root of any kind of bamboo variety pattern): Kachin people always use the spear and dagger in marriage ceremony after decorates with this root and means to bring good luck for groom and bride to communicate and wide relationship with other people. The spear and dagger are given by the bride side. It is a symbol of natural forest resources preservation.

- Tsu-len maka (grief pattern): This pattern means that after her mother passed away her feel grief and dream was that her mother taught new patterns her. It was shown as grief pattern.

- Ning-krau maka (neck yoke pattern): This pattern shows about Kachin people were working very hard and they carried heavy load with yoke on their neck that need to memorize ability of working experiences.

- Jahkan ladau maka ((crab thumb pattern): Grandfather of Kachin people, Ning-gawn wa Magam, married daughter of dragon, Ja Kai. In this case the crab was the match maker was memorized by this pattern. This pattern is telling about the Kachin history and broker who talk to opposing sides for good things or peaceful.

- U ri myi maka (pheasant eye pattern): This pattern shows that the beauty of pheasant eyes. It indicates natural wildlife loving sense to preserve wildlife communities.

- U latsang maka (chicken toes/talon pattern): This pattern expresses Kachin people use the chicken toes while handloom weaving to become taut.
- Majan dang maka (map pattern): This pattern is symbol of victory. Map is very important to be very reasonable result in a particular situation that need to know and handed down to generations by patterns.
- Jam na maka (window pane pattern): this pattern shows that the palace window in imagination.
- Gwi lahtin maka (dog heel pattern): This pattern shows that the dog protects his master and the dogs are very faithful for his master. It was shared generations to notice a message.
- Labrang bra maka (crossing poles pattern): This pattern means that when the Kachin people give offerings to spirit, tied a cow or a buffalo at a cross poles. It is related to religious belief of races.
- Shing-jep u maka (bird pattern): This pattern presents that a bird from the mountain is known as a leader of birds and it organizes to give agricultural signal by singing. Kachin people admire and protect from hunting and its symbol is used as pioneer of Manau Pole.
- Lamu ning ni maka (cloud pattern): This pattern describes that the old Kachin looked the cloud condition and forecasting the weather. It is important for agricultural activities and pointed out generations with patterns.
- Maka Ka nu (a basic pattern): This pattern is the basic pattern for handloom weaving of indigenous people and means leadership and management system is essential for livelihood.

Traditional use of biological resources not only reflects diverse crafts-use memories, indigenous knowledge of craft creation but also ways of maintaining. The handicrafts creation is based on primitive culture and traditional resource management system.

The socioeconomic development is based on opportunities that the good management of ecological, biological, cultural diversities and natural environment, which provide comparative advantages for specific development. This opportunity is highly related to both economic development and environmental sustainability.

So indigenous knowledge and traditional appropriate technology of the Kachin ethnic people should no longer be ignored. Indigenous technical knowledge distilled and handed down from their older generations. So the unique meaningful patterns and symbols of handicrafts come from experience and these are relevant to natural environment need formal preservation.

Human impact on the natural forest resources closely related to handcrafts producing due to potential raw materials is going depletion in Kachin State.

Orchid fiber is essential for Lachid and Law Waw traditional fabric weaving.

Since the human history began at the time their ancestors came down from the mountain (majoishingra Bum) and started to make handcrafts and living by hunting and gathering plants on the forest resource-based for many generations. Then they improve quality gradually of cultural paintings, traditional symbols in human societies, in turn, resulting creation of modernize symbols, patterns of crafts. The process of breeding and caring for animals and plants that are used for food and clothing shelter is the main source of symbolic culture of Kachin communities. So these natural forest resources contributed to anthropogenic characters and/of human being and creativities and innovation come through. The cultural life of Kachin people was intertwining with natural environment and they have experiences about environmental management and resources utilization.

According to the living documental evident, there are 6 indigenous tribes, known as Jinghpaw, Zai Wa, Lachid or Lashi, Law-waw or Maru, Rawang, Lisu which all are the strong belief of tradition and cultural practice and handicrafts making in daily life.

Indigenous knowledge to express cultural symbols is an integral part of natural environment. When they select variety of wood to make craft which are carefully collect the most perfect plants from the forest. Bamboo tubes, gourd tubes to store seeds, baskets and other utensils made of bamboo, rattan are examples.

When the harvesting time comes people make bamboo clappers which are connected with the hut with extension built in middle of the plot, with a good view of the rice field (the hut has extension place, so it cannot be deleted). The cable is made from bamboo or rattans then made to clap by pulling the cables to threaten the birds or rice sparrows and prevent animal from approaching. Sun hat, raincoats are made from the bark of some plants and are useful in the field and family income opportunity. These cultures concerning with handcrafts are derived from their aged old generations. So they have become accustomed to make handcrafts by culture group or clan groups. In this way the people socioeconomic and environmental conservation is distill from early culture.

Most of the handcrafts producers in Kachin State operate under indigenous knowledge systems and therefore, they are not only of value to the cultures from which they evolve, but also it helps the researchers who are trying to improve the conditions of the rural communities. Understanding the indigenous knowledge of rural people in relation to biodiversity / natural resources management is one of the

key issues in the development of the mountain region. Sufficient raw materials, leaves, stems, fibre will give birth to self-sufficient economy in which local communities will also live in perfect harmony with nature.

### ***2.3. Socioeconomic perspective on Handicrafts:***

Most vessels such as vases, bowls and plates, baskets, agricultural tools are made of wood, bamboo, web, rather which are used to woven split bamboo. Today, most of handicrafts makers have both skills and improve quality to be found in trade. A strip of split bamboo is cut to make the correct length for the bottom of the wall of the vessel. There are 14 to 20 employees at each workplace and can give a job to the villagers.

Products of handicraft have played a significant role of culture and tradition to attract the domestic and foreigners. Most of the handicraft producers made products for their own and local users because they have no trade network and information regarding the demands of the craft products in the national and international level before. They never put mass investment for the best because maximum artisans involved in this work as a part time basis.

The improve e-communication and online shopping/ internet has been playing a vital role to handicrafts marketing as a common platform for business. It is a easy in very short time through which a consumers easily know about any pattern, colour, designs and products features, price, availability, accessibility, order the products, paying the prices etc. cottage handicraft industry needs contribute to markets their products quickly which has an effective way of the small scale producers and customers take these benefits after small investment and it covers large proportion of the customers. Local, national and international level of advertisement like banner, poster, and pump lets, exhibition news papers cause wider market space for producers. Rural area is the main source of handicraft items and it's required the easy accessibility of rural craft products in the urban market.

The marketing strategies such as quality, quantity, distribution which could provide a unique platform where the buyers and sellers meet and exchanges finish goods. The urban customers like very much rural handicraft products they want to the meaningful tradition or culture of the rural people and it attracted the customers. Most of people tourist buyers like high quality. They sell in Mandalay, Yangon and client abroad especially weaving fabric. Their main customer or trade partner is from everywhere. The lacking registration of or licensing of cultural meaningful patterns, symbols and low demands, lack of access to raw material, transport problems, problems of internet connectivity and lack of market awareness etc. which make the difficulties to give maximum productivity. The Lack of market information and

availability of poor infrastructure which make this industry inefficient to fulfill actual demands of crafts products of foreign country is problems facing by the handicraft makers and producers in rural communities in Kachin State.

#### ***2.4. Environmental perspective:***

In early periods, wood, bamboo and rattan and their needs can be obtained from the forest everywhere and local people collect easily raw material for handicrafts making in the Kachin State. After 1990s, Market Oriented Economy in Myanmar companies started large scale extraction by using super machineries. This unsustainable over extraction of mining, logging, rattans cutting for trade to China, agricultural encroachment were resulting on environmental situation change in Kachin State. According to rural –urban linkage, raw materials such as jade, gold, amber, woods, rattan and ect. are obtained from Kachin State to produce handicrafts, lacquer ware, and other useful thing in lower Myanmar. This large scale cutting of forest resources is impact on natural environment like lost raw material for handicrafts, lost biodiversity and water resource, climate change, and difficulties in socioeconomic functions of rural communities in Kachin State.

After 2016-17, all large shade trees along both road sides were cut down for urban development strategies and infrastructure upgrading operation in Myitkyina City. Wood craft producers bought these large trees cutting down by urban development operation and strategy. Some tall and shade trees in the Myitkyina University campus were cut down to sell to handcraft makers and the charcoal producers.

The local people are trying to establish community forest as many purposes such as to get easily raw materials for the needs of wood crafts, bamboo and rattan crafts, construction materials etc.

Bamboo plantation, mulberry tree plantation, rattan conservation can be observed in study area. As such many valuable potential wood, bamboo, rattan and forest can be protected from over harvesting and regional extinction. So sustainable environmental awareness and conservation activities are needed effective in Kachin State.

This study deals with indigenous people who rely on the natural resources to satisfy their needs. Local people are main stakeholders and the basis for decision makers in their environment or natural resources. In many ways, these ecosystem people behave as an integral part of the natural ecosystems. It was also said that in order to realize socioeconomic development, that the natural ecosystem could sustain, sudden increase in population, which would provoke upon the increase of the pressure on resources which in turn becomes an obstruction to improving living standards. The environmental sustainability is the ability to sustain the environmental resources that support our lives, and the sustainability that would make future socioeconomic

growth possible. The strategies for sustainable development aim to promote harmony among culture people, and harmony between man and nature is important.

Socioeconomic development brings together two strands of thought about the management of human activities-one concentrating on development goals, the other on controlling or limiting the harmful impacts of human activities on the natural environment. These aspects or abilities are pointing out utilization, conservation and management on natural resources for human ecosystems. The strength of natural ecosystem is both directly and indirectly related to handicrafts producing due to raw material are obtained from natural forest. Much amount of wood, rattan, bamboo, web, resins, dye and etc. and which are extracting from forest and sell their customers for the varieties of handicraft weaving. Jade, gold, amber have been extracting in the natural forested area then natural forest areas are transforming into bare/damage land. Environmental reestablishment of degraded areas is important to re-forestation in Kachin State.

### ***2.5. Types of handicraft in Kachin State***

Handicrafts making in Kachin State is generally distinguished as four types, there are handcraft make of (1)forest resources including wooden crafts, bamboo craft, rattan craft, weave by fibre, web, etc, and handcraft make of (2) metal jewelry such as jade crafts, gold crafts, amber crafts, silver crafts, (3) weaving traditional fabric materials, (4) art and painting.

Local communities make handicrafts for normal used or household used some are make for market quality. Bark, leaves and fibre are used to make their materials needed such as rain coat, sunhat, baskets, light containers, varieties of tool which is made of thin strips bamboo, rattan wood, or plastic and is use for storing things or carrying etc. In this case local people used to solving agricultural problems by means of indigenous knowledge.

Wooden crafts, bamboo crafts, rattan crafts can be observed both in rural villages as household used and for local markets. Jewelry makes of jade, gold, and silver crafts can be studied in urban areas as local, regional and international market level. Amber is extracted in Hukawg Valley and also produces handicrafts easily in mine areas, and amber market please in Myanmar. A traditional cloth weaving is widely practiced in rural and urban areas as handloom weaving and machinery weaving in Kachin State. Weaving is a well-known handicrafts production and popular trade in local, urban centre markets and also exports to some foreign countries. Art and painting can be seen at cultural buildings, other buildings such as hotels, restaurants, cultural fencing and etc. to decoration with cultural and meaningful traditional patterns and historical symbols in Kachin State.

Varieties of wood, bamboo, rattan, resin, web, jade, goal, amber are major resources to produce handicrafts for socioeconomic development in Kachin State. These natural resources are major pull factor of migration and increasing informal sectors in Kachin State.

### **3. Results**

This study helps for the academics, further research study. It will also contribute valuable recommendation for decision makers, planners and researchers for sustainable socioeconomic development and the strategy in the handicraft sectors.

**To stakeholders:** This study share information regarding needs and prospects of handicraft sector which helps the decision makers in different parts of the development strategic action plans concerning socioeconomic and environmental sustainability.

**To researchers and learners:** This study serves researchers and the students as their reference or guide regarding handicrafts is potential economic development and environmental sustainability by means of learning meaningful cultural symbols and historical cultural patterns and values. This study also helps students to creative thinking and works in this exploration and new idea for the development as handicrafts sector.

**To Academic and subject matters:** This study will help teachers and students to have a deeper understanding of handicrafts which are potential socioeconomic development and their supporting importance products for local, regional economic development.

**To plan of Future Research:** This paper will help the future plans of researcher as reference to get ideas and some facts related to handicrafts. It also contributes a management view regarding the socioeconomic and environmental issues in development.

### **4. Discussion and Conclusion**

Strategic for the handicrafts business development will play a crucial role for rural development. Strong financial supports which may make any decision regarding the well-being their works and produce more quantities. The awareness such as hand crafts exhibition, handicraft emporia, publicity through painting and electronic mode, market and products assessment activities for producers and artisans. The significance of handicrafts in achieving sustainable development should be focused on:

- Industrial scale production in rural areas especially at extracting areas and market link is needed be considered.

- The stakeholders and decision makers in Kachin State should be defied handcrafts zone and focused on industrialization of handicrafts in the rural areas can lead to the diversification of the rural economy, creation of the job opportunities, increase in rural incomes, and reduction of rural migration and ultimately reduction the inequality between urban and rural areas.

- Several investigations such financial, management skills, will need be carried out to prove the importance and role of industrial development and the establishment of industries in the villages.

- The main issue that should be discussed the development of the industries as the aspects on the socioeconomic and environmental issues towards the industrialization strategy in rural community development.

- Citation of Divandari, and et al. (2017), Handicrafts can be defined as the conscious use of the patterns, methods, and techniques for local economy and rehabilitation of the indigenous community developing and adapting them to local conditions as well as updating and strengthening the local techniques and methods of the indigenous knowledge and informal sector could lead to the people's participation in the sustainable development.

- According James D. Wolfensohn, (1995-2005), local knowledge is a part of the culture and history of the local communities and need to learn from local communities to strengthen development processes. Concerning the development and localization, and local knowledge based development helps local societies to strengthen and rehabilitation themselves.

- Understand of the different types of indigenous knowledge, preservation and transfer it to the generations and its use in the innovation is important for sustainable socioeconomic development of society in rural areas.

- The improvement of indigenous knowledge is the best way of efficiency and the rehabilitation of informal sector of the local communities.

- According to Javad Divandari and et al., for helping the poor, rural and indigenous communities of the developing countries, addressing the indigenous knowledge, recovery and growth of the appropriate and efficient indigenous knowledge on handicrafts is a big step in the rehabilitation of the difficulty facing people.

Systematic socioeconomic potential surveys are lacking and comprehensive survey that related to the human activities reflects the natural resources and conservation. Systematic management on handcrafts and systematic trading network are needed to be considered.

Today, in Myanmar also environmental concerns together with socioeconomic development are major issues. Sustainable management and conservation could also be addressed as a priority measure. The majority of 6 tribes of indigenous

peoples are Lachid, Law Waw and Lisu, Rawang, Zai Wa, and Jinghpaw in Kachin State. A long-term view on quality handicrafts production is a sign of change from small scale to market scale production. The regional patterns and designs were based primarily on plants ecologically suited to natural environments.

The mountains provide opportunity of socioeconomic development by means of attraction of handicrafts, ecotourism and other high-value products. The indigenous communities have experiences and indigenous technical knowledge, community-based resource management systems to develop handicrafts production in both rural and urban areas that is socioeconomic opportunities. These local human resources are important to promote quality and interpretation of meaningful patterns and symbols due to producers, designers, and weavers have to understand on meanings of culture and historical symbols, that is attraction of customers and socioeconomic development potential. If producers, designers have no understanding of cultural patterns and traditional symbols for handicrafts it is meaningless and will lead to cultural depletion.

Net working arrangements and access to enhance efforts to upgrade skills and knowledge exchange could provide improve information for issues of socioeconomic development. The local people need the information exchange through public media and more effective avenues of knowledge exchange of handicrafts sectors.

### **Conclusion**

The diversity of geographic landscape availability of water for cultivation, variety of raw material for handicrafts are potential for socioeconomic and cultural factors that have resulted in the evolution of socioeconomic development as handicrafts sector in Kachin State.

The raw material such as bamboo, wood, rattan etc. are collected from the forest to make handicrafts their own needs and providing enough time for the income regeneration in the remote areas.

Sustainable development is the use of natural resources and national infrastructure in a way that seeks to avoid the exhaustion of those resources. These needs can be thought of as the well-being of society as a whole, in cooperating such aspects as creation of handicrafts, housing, foods, clean air and water, health and education and the preservation of ecosystems in mountain region. By now, it is clear that security and living standards for the local communities' poverty is inextricably linked to environmental protection.

Sustainable production of handicrafts is socially and economically sound, ecologically viable, and humane. These goals for sustainability should be applied to all aspects of any handicrafts production system, from small scale production and marketing to international trading network for processing and consumption.

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# MULTI-DIMENSIONAL LABOUR MARKET OUTCOMES OF HIGHER EDUCATION' GRADUATES: EVIDENCE FROM A NATIONAL SURVEY IN VIETNAM

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## **Abstract**

*Youth employment is a seriously concerned issue in developing countries, given recent moves to mass higher education. The limitations of unemployment rates as a guide to youth employment problems are widely recognised, but little has been known about other labour market outcomes of higher education's graduates. This study takes advantages of a large-scale Vietnamese national survey on labour forces in 2015 to shed light on the effects of higher education on recent graduates' multi-dimensional labour market outcomes. The findings show that college and university graduates outperform high school counterparts in terms of high-quality labour market outcomes, such as having higher wages and better employment protection, though the mere stance of being employed does not differ markedly among these graduate cohorts. The paper contributes to recent debates on higher education in a developing country like Vietnam, where the focus is on whether the move towards mass higher education might result in differed labour market outcomes for recent graduates.*

**Key words:** *labour market outcomes, higher education, youth employment, selection bias, Vietnam.*

**JEL classifications:** *I23, J21, J28.*

## **1. Introduction**

Youth employment is a seriously-concerned issue the developing countries. The issue is even more acute given recent moves to mass higher education (Tran and Nørlund 2015; Ou and Zhao 2016). The study of youth employment is broad, and the limitations of unemployment rates as a guide to youth employment problems are widely recognised (Rees 1986; Ryan 2001). Various labour market outcomes of the youth are critical in their transition to a “transited” job - meeting a basic criterion of

permanency, providing the worker with a sense of security, or a job that worker feels personally satisfied with (Elder and Kring 2016). Therefore, the mere stance of being employed is not sufficient for a recent graduate, who just graduates and in the first years of employment in the labour market, to successfully move to a “transited” job. The other aspects, such as wages and the level of employment protection are equally important for a smooth transition process.

In the area of youth employment, current works mostly focus on changing nature and factors affecting school-to-work transition (Quintini, Martin, and Martin 2007; Mavromaras et al. 2013; Sortheix, Chow, and Salmela-Aro 2015). For example, Quintini, Martin, and Martin (2007) found that OECD countries still have a high level of youth unemployment notwithstanding a declining young cohort with better education. Another strand of literature deals with the effects of Chinese higher education expansion on the youth’s labour market outcomes, but it uses unemployment rate as a sole indicator (Li, Whalley and Xing 2014; Yu 2014; Ou and Zhao 2016). In addition, among these studies, the higher education expansion’s effects on unemployment rates are mixed. Few international studies have so far examined the higher educational effects on the recent graduates’ various labour market outcomes, other than unemployment rates.

In Vietnam, it has been widely circulated that there is over-supply of higher education, and there is a mismatch between supply and demand in the labour market (Nguyen and Chu 2014). According to a recent report on the employment and social trends in Vietnam, the youth’s employment rate was on the rise, from 5.5 per cent in 2002 to 7.7 per cent in the second quarter of 2017, which was much higher than the senior labour cohort of 35 years old and above, 1 per cent (Institute of Labour and Social Studies and International Labour Organization, 2018). Higher education has expanded rapidly since 2004; enrolment in higher education tripled in a 10-year time (World Bank 2016), but its contribution to the national economy is debatable. Besides, a large fraction of the labour force worked in the informal sector, without social insurance (Huong et al. 2013; Cook and Pincus 2014). In the context of globalization and industrialization, mostly young female workers joined the labour force with non-liveable wages and substandard working conditions (Tran and Nørlund 2015). Therefore, an in-depth study on labour market outcomes of recent graduates in a developing country like Vietnam is worth pursuing, given the recent move towards mass higher education, and mixed views of education’s contributions to the national economy with low levels of formality and of social protection.

This paper seeks to address the following central research question: How does higher education affect the labour market outcomes of recent graduates, which cover not only employment/work status but also other multi-dimensional outcomes after

being employed? The multi-dimensional labour market outcomes comprise wages, level of employment, having employment protection from permanent labour contracts, social insurance, and working in establishments with formal business registration. This study takes advantages of a large-scale national survey on labour forces in 2015 to shed light on the effects of higher education on the multi-dimensional indicators of recent graduates' labour market outcomes. The empirical findings show that college and university graduates outperform high school counterpart in terms of high-quality labour market outcomes, though the mere stance of being employed does not differ markedly among these graduate cohorts. Specifically, in reference to high school graduates, college and university counterparts are less inclined to underemployment, have marked higher probability of getting a job with permanent labour contracts, social insurance, and working in entities with formal business registration. These findings remain unchanged even after having controlled for selection bias that is inherent in the labour market studies.

This study contributes to the related literature on youth labour market transition in the following three ways. *First*, it examines a number of multi-dimensional indicators relevant to recent graduates' labour market outcomes, not just employment status. These multi-dimensional indicators are believed to yield a balanced view on youth employment in developing economies, where it is not uncommon to see uncompetitive wages, underemployment, and a large number of employees working in informal sectors, without social protection. A recent similar paper is Tran (2017), but it focuses merely on wage differences and other descriptive statistics of employment outcomes. *Second*, this study aims to produce consistent estimates of higher educational effects on labour market outcomes, once having controlled for selection bias that is inherent in labour market studies. For example, the outcomes relevant to wages or the level of employment (underemployment or not) might be severely affected by unobserved heterogeneity related to ability, motivation, and attitudes to work. *Third*, it contributes to a recent policy debate on the interplay between mass higher education and youth unemployment in a developing country like Vietnam.

The rest of this paper is structured as follows. Section two is review of related strands of literature on the interplay between educational attainments and labour market outcomes of the youth. Section three deals with the contextual issue of higher education expansion and youth labour market outcomes in Vietnam. Section four mentions data source, summary statistics, and the benchmark empirical models. Empirical results and discussions are included in the following section. Finally, section six wraps up the paper with conclusions and venues for further studies.

## **2. Literature review**

### *Educational attainment and employment*

Education and training is believed to improve the well-being of individuals since it increases access to job opportunities and the associated benefits that come from the quality of employment. Cain (1966) explained an individual with higher level of education is more likely to participate in the labour market because a more educated individual has higher income aspiration and expectation than his/her less-educated counterparts. Many studies have empirically supported this positive relationship between level of education and the rate of employment (Kennedy and Hedley 2003; Kennedy, Storey and Vance 2009; Faridi, Chaudhry and Basit 2010). This finding still holds when taking the gender and mode of studies variables into consideration (Berliner 1983; Jaumotte 2003; Laplagne, Glover, and Shomos 2007, and Kennedy, Storey, and Vance 2009).

Yet another existing literature strand suggests education level and employment opportunities can be negatively correlated. International Labour Organization (2015) that examines the labour markets of more than 60 countries of various development stages shows a mixed picture of relationship between education levels and probability of being employed. In developed countries such as Canada and Germany, education can protect one from being jobless. For the most part, those with a higher education degree stand a much higher chance of getting a job compared to their less-educated peers. Whereas, in countries like Thailand, the Philippines or Cambodia, higher education does not necessarily protect graduates from unemployment. Highly-skilled workers seem to find harder to get a job than those with only primary education level. Other empirical research also report the existence of such trend (see Standing 1981; Breusch and Gray 2004; Lattimore 2007 and Laplagne, Glover and Shomos 2007). In search for explanation of this discrepancy, the nature of the economy has been employed. Since almost all developing countries rely on resource-driven growth models, and specialise in labour intensive products, mostly unskilled labourers, less-educated individuals have higher work options than their higher educated counterparts (Leamer 1995, Stolper and Samuelson 1941, and Standing 1981).

ILO (2015) also points out that developed countries often have a higher rate of unemployment compared to developing countries. It is suggested that since these countries have sufficient social safety net, their citizens can afford to be unemployed while looking for a better job opportunity or learning a new skill set in transition to a different career direction. Citizens of developing countries, however, often do not have this privilege. Therefore, they have to take up jobs to pay the bills even if the jobs can be below their qualifications and expectation. That implies if a study or

policy takes unemployment rate as the only one factor of consideration to assess labour market outcomes of graduates, the study is anything but sufficient. Rather, it is important to look further into the quality of employment including the type of contracts and social safety net. This notification is particularly essential when it comes to study labour markets of developing countries where informal economy dominates (Cling, Razafindrakoto and Roubaud 2011).

### *Youth employment*

Youth employment is usually lower than adult employment since it takes longer for young workers to find a job after leaving school. As such, youth employment is a serious problem globally, even in well-established capital economies (Quintini, Martin, and Martin 2007). For young workers in developing countries, the future can even be gloomier (Elder and Kring 2016).

Since higher education started to expand across the globe, which now results in a concern of oversupply of higher education graduates, arguments on negative impacts of having too many graduates on employment prospective have been put forward (McGuinness 2006; Carroll and Tani 2013). Even graduates believed that when almost everyone has a college degree, that piece of paper has started losing its role in giving the owners advantages in earning a job (Tomlinson 2008). On the other hand, however, education attainment seems to currently exert positive influences on youth employment in transitional economies. In China, for instance, Ou and Zhao (2016) suggested that decreasing unemployment rates among males and high school graduates in China were attributed to the expansion of higher education. Kyui (2016) also reported a similar trend in Russia, albeit, a phenomenon of decreasing returns to higher education has appeared. In response to this concern, there have been policy proposals that promote vocational education instead of higher education and that focus on the school-to-work transition, arguing that vocational education provides students with employable skills and therefore prepares them better for work. Hanushek et al. (2017), however, warned that given technological changes in exponential rate, the gains today in youth employment “may be offset by less adaptability and diminished employment later in life”.

Noticeably, studies of youth employment have to rise above using only unemployment rates as a compass to investigate youth employment problems (Rees 1986). Sortheix, Chow and Salmela-Aro (2015) suggested the inclusion of work values as they play a key motivational role in job selection and career development. Mortimer et al. (2008) argues studies have to take into account a delayed period for university graduates to go from “survival” jobs to “career” jobs that match their training at college level, which may result in a level of underemployment. Scurry and Blenkinsopp (2011)

suggests that research that try to understand graduate underemployment may benefit from relevant theoretical frameworks from career studies.

Studies on youth employment in Vietnam are sparse. Pierre (2012) suggested that the youth labour market was dynamic and outcomes for youths had improved, but the overall quality of employment had suffered due to global crisis and economic volatility. Globalization and industrialization is found to not do any better to young, female workers who live on meagre earnings and below standard working conditions (Tran and Nørlund 2015). It is argued that there is mismatch between supply of higher education and labour market demand in Vietnam, as the unemployment rate among the high-skilled cohort is much higher than the average level (Nguyen and Chu 2014). Much remains unknown about multi-dimensional labour market outcomes of recent graduates in an economy characterised with low levels of formality and social protection, notwithstanding, over the past 30 years, Vietnam has experienced noticeable shifts of employment from informality (Schmillen and Packard 2016).

### **3. Higher education expansion and youth employment in Vietnam**

Higher education system in Vietnam has witnessed a period of considerable growth due to significant changes in the government's policy in the last three decades. Before its economic innovation in 1986, a very small proportion of the tertiary-age population went to college. Those university-educated persons had been highly subsidised by the government during their studies as they would work for the public sector after graduation. After 1986, the government continued to be the single payer for university studies until the early 1990s when it could no longer afford to meet the increasing demand for colleges. As such, the government started to allow public universities to admit more students who did not pass the entrance exam yet were able to pay for their own studies, known as "the open-track students", in addition to those who passed the exam and would be paid for by the government. Simultaneously, the government cautiously allowed few private universities to open, starting with vocationally-focused colleges. The expansion in terms of size and types of service providers has largely contributed to an increase in enrolment at tertiary level. In 1990, only 2.8 percent of tertiary-age population went to higher educational institutions. The figure rose to 9.7 percent in 2000 and then 22 percent in 2010. The number of students in the total population in 2011 was 245 students per 10,000 persons, ten times higher than those in 1987.

The government of Vietnam is ambitious in getting more college-educated persons in the hope that this labour force will be a primary driver of the country's economic growth. As one of the most dynamic emerging economies in the world, Vietnam has dramatically shifted from agriculture towards manufacturing and

services. In 2015, less than 20 per cent of the country's GDP derives from agriculture compared with 33 per cent from manufacturing and construction and 40 per cent from services (GSO 2015). Embracing an industrialised economy, Vietnam has to rely on highly-skilled human resources for growth. Accordingly, the government has encouraged further expansion of the higher education system. In 2005, the government issued the Higher Education Reform Agenda 2005-2020 (HERA) that set a vision for the higher education system for the next 15 years. One of the five goals of HERA are "continued rapid expansion of the higher education system that aims a rate of higher education participation by 2020 that is three to four times higher than the current level".

In Vietnam, it has been widely circulated that there is over-supply of higher education, and there is a mismatch between supply and demand in the labour market (Nguyen and Chu 2014). Recent labour statistics from the Labour Force Survey, which was conducted by Vietnam General Statistics Office (GSO), shows that, by the end of 2016, undergraduates and postgraduates accounted for the most part of unemployment in the cohort of skilled worker. Some even called for a shift in public investment from college and university to vocational schools, arguing that studies at this level is much less expensive and those who study at this level have a higher chance to get a job upon graduation compared to university-educated group (Tran 2016). Furthermore, a large fraction of the labour force worked in the informal sector, without social insurance (Huong et al. 2013). The majorities of informal employment are self-employment and household businesses. Except for some successful entrepreneurs, most informal employers earn poorly and are not covered by social security. Formal contracts rarely exist. Such economy often favours those who spend less years on education than those who spend more.

In short, the debates on the employability of recent graduates with college and university education seem to reside in over supply and the mere stance of employment status, little has been known about the multi-dimensional labour market outcomes of this graduate cohort. This is even more acute in a transition country like Vietnam that is characterised with underemployment, large informal sectors, and low employment protection.

#### **4. The data and empirical strategies**

##### *The data*

This study uses the 2015 Labour Force Survey (LFS 2015) conducted by the General Statistics Office. LFS is an annual survey that collects individual information on the labour market across all 63 provinces/cities in Vietnam. Since 2011, the survey has been conducted on a quarterly basis to provide timely updates to changes in the

labour market. The survey is stratified into household where demographic information and related labour market outcomes of all individuals in a given household are collected using questionnaire-based interviews. It targets not only people in the labour force, the employed and unemployed, but also those not actively participating in economic activities, such as students, housewives and the retirees. Labour market outcomes indicators such as employment status, level of employment, social security, are measured against these groups, which makes this survey suitable for the research purpose of this study.

Annually, there are more than 800,000 individuals taken part in this survey, with equal proportion in each of the four quarters. The sample selection method is two-stage stratification in order to ensure representativeness at regional level and provincial level. Stage one is to select enumeration areas - EAs, and based on the result of stage one, households are selected in stage two. Based on the 2014 Inter-censal Population and Housing Survey's selected enumeration areas, a list of provincial enumeration areas is established. EAs are selected by the method of probability proportional to size (PPS). At stage two, a list of households at each abovementioned EA is selected on the basis of the upper/first and the lower/second half of the list. Fifteen households will then be selected from each half. In doing so, the sample represents different economic regions, gender, and age groups, and therefore ensures the validity and reliability of the data as well as its validity to make inferences for the population. In order to improve the design efficiency and ensure the reliability of survey sample, the households in each EAs are rotationally selected following the 2-2-2 rule. Households will be selected into sample in two adjacent quarters, excluded in the two following quarters, and selected again in the next two adjacent quarters. As such, each EA can be selected into the sample four times per year at most.

Following the practice of the work transition surveys conducted by the International Labour Organization, this paper chooses the respondents aged from 15 to 29 in the labour force survey conducted in 2015. This age cohort provides ample time to capture diverse labour market outcomes of recent graduates upon graduation. The paper categorises three groups based on their educational attainment: those with high school graduates (*tot nghiep pho thong co so*), those with college graduates (*tot nghiep cao dang*) and those with university graduates and postgraduates (*tot nghiep dai hoc va sau dai hoc*). The study will compare labour market outcomes of the first group, or control group, with those of the other two. These three groups make up for 62,694 individuals nationwide. Among this total, high school graduates account for 66 per cent, college graduates 13 per cent, and university graduates 21 per cent.

**Table 1: Personal and demographic information of the recent graduates**

Variable	No. of observations	Mean	Standard deviation	Min	Max
Gender (Female = 0, Male = 1)	62,694	0.473	0.499	0	1
Age (years old)	62,694	23	3	15	29
Marital status (Having married = 1, 0 otherwise)	62,661	0.363	0.481	0	1
Work experience (year cohorts)	42,237	2.967	0.880	1	5
Household head (head of family = 1, 0 otherwise)	62,694	0.086	0.280	0	1
Number of dependent persons	58,610	2.211	1.447	0	14

*Source: Authors' calculations from the Labour Force Survey 2015.*

Table 1 above show some personal and demographic information of the recent graduates in 2015. Among them, 47 percent were males, 36 percent were married, and 9 percent became household heads. On average, they lived in households with 2.2 economically dependent persons, but, in some few circumstances, they have up to 14 dependent persons. Their work experience ranges in the scale from 1 to 5, with the averaged scale, 2.97, indicating that most of them have the number of work experience from 1 to 5 years.

**Table 2: Snapshot of labour market outcomes of the recent graduates**

Variable	No. of observations	Mean	Standard deviation	Min	Max
Employment status (having employed = 1, 0 otherwise)	44,138	0.968	0.176	0	1
Ln(Wage)	33,736	8.204	0.635	3.912	13.312
Extra work demand (having demand = 1, 0 otherwise)	42,271	0.048	0.214	0	1
Having permanent labour contract (having contract = 1, 0 otherwise)	27,687	0.708	0.455	0	1
Having social insurance (having insurance = 1, 0 otherwise)	42,903	0.434	0.496	0	1
Working in entities with business registration (having registration = 1, 0 otherwise)	38,912	0.732	0.443	0	1

*Source: Authors' calculations from the Labour Force Survey 2015.*

Table 2 indicates snapshot of labour market outcomes of the recent graduates, ranging from employment status (having employed or not) to wage income, level of employment, and employment protection. On average, 97 percent of the recent graduates were employed, with wage of 8.2 in the natural logarithmic scale. However, not all of the employed satisfied with the current level of employment; namely, five percent expressed the need to seek additional jobs. With respect to employment protection, less than half of the recent graduates had social insurance, and about 70 percent had permanent labour contracts and worked in entities with formal business registration.

### *Empirical strategies*

The labour market outcomes of recent graduates are estimated with the following regression equation (1). To control for selection bias, the following selection equation (2) is used.

The regression equation:

$$y_{ip} = \alpha + \beta.college_{ip} + \gamma.university_{ip} + \delta.X_{ip} + \sigma_p + \theta_{ip} \quad (1)$$

Where:

- $y_{ip}$  is the labour market outcomes of individual  $i$  in province  $p$ , which could be either employment status or the other multi-dimensional outcomes once being employed. The latter comprises of wages, demand for extra works (underemployment or not), having permanent contracts, social insurance, and working in entities with formal business registration.

- $college_{ip}$  is a dummy variable, taking value of 1 if individual  $i$  in province  $p$  has the highest level of college education, and 0 otherwise. College education is more skill-oriented than the university level, and takes three years to accomplish in Vietnam.

- $university_{ip}$  is a dummy variable, taking value of 1 if individual  $i$  in province  $p$  has the highest levels of undergraduate or postgraduate education, and 0 otherwise. University education normally takes four years to accomplish, and postgraduate education normally take 2 years to accomplish.

- $X_{ip}$  is a vector of other covariates of individual  $i$  in province  $p$  that might affect his or her labour market outcomes. These include demographic variables like gender, age, marital status, working experience, whether a given individual is

the household head, and the number of economically dependent individuals in the household. The number of economically dependent individuals in a given household is counted by the number of people not taking part in any economic activities. They could be children, the elderly, non-paid housewives or handicapped people in the households.

- $\sigma_p$  is unobservable province-specific effects, which denote for differed economic and geographic conditions across provinces. The inclusion of these effects is important, as the labour market outcomes of a given individual is differed greatly across provinces due to socio-economic conditions.

- $\alpha, \beta, \gamma, \delta$  are the coefficients to be estimated. The key coefficients of interest are  $\beta$  and  $\gamma$ , which represent the effects of college and university education on the labour market outcomes, with reference to the group of higher secondary education.

- $\theta_{ip}$  is the usual random error, which is independently and identically distributed.

The selection equation

$$\mathbf{Z}_{ip} + \tau_{ip} > 0 \quad (2)$$

Where:

- $\mathbf{Z}_{ip}$  is a vector of covariates that might guarantee the labour market outcome of individual  $i$  in province  $p$  is observed or not. In this paper, we include gender, marital status, and the number of economically dependent people in a given household as the covariates of interest. In one classic example, women might not choose to work when they are married, and prefer to do household works. Also, the number of economically dependent variables might represent economic burden constraining the motivation to work of a given individual. The inclusion of the selection equation is important when an individual's work status is not made randomly due to unobserved heterogeneity.

- $\tau_{ip}$  is the usual random error, which is independently and identically distributed.

The labour market outcomes in equation (1) is not always observed. Rather, it is observed if equation (2) holds. The ordinary regression for the labour market outcomes in equation (1) is biased if  $\text{corr}(\theta_{ip}, \tau_{ip}) \neq 0$ . Given  $\text{corr}(\theta_{ip}, \tau_{ip}) \neq 0$ , the above Heckman procedure provides consistent, asymptotically efficient estimates for all the parameters in such models. For the dependent variable of wages, equation (1) is estimated with the standard OLS estimator. For the other dependent variables

related to employment status, level of employment, and employment protection, equation (1) is estimated with the probit estimator.

## **5. Results and discussion**

Table 3 delivers the estimated results of the labour market outcomes of recent graduates in 2015. The variables of interest are *college* and *university*, whose estimated coefficients account for the impacts of educational levels on the labour market outcomes. All the specifications from (1) to (11) control for the other demographic and individual variables that might affect the labour market outcomes. They include *gender*, *age*, *marital status*, *work experience*, *household head*, and *dependent persons*. In addition, all the specifications control for unobservable province-specific effects. The coefficients are all reported as the average marginal effects, and they could be interpreted as the probability gaps with respect to the specifications with binary outcomes, (1) and (4) to (11). In specification (1), the probability of being employed does not differ greatly among college and university graduates, as the estimated coefficients for *college* and *university* are of the same magnitude. However, the positive estimates of these coefficients indicate that the probability of being employed for college and university graduates is slightly higher than that of high school graduates.

**Table 3: Education attainment and labour market outcomes**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dependent variable:	Work status	Ln(wage)	Ln(wage)	extra work demand	extra work demand	Permanent labour contract	Permanent labour contract	Social insurance	Social insurance	Business registration	Business registration
College education	0.003** (0.001)	0.120*** (0.022)	0.119*** (0.022)	-0.008*** (0.003)	-0.010*** (0.004)	0.174*** (0.012)	0.176*** (0.012)	0.239*** (0.013)	0.231*** (0.013)	0.189*** (0.009)	0.188*** (0.009)
University education	0.003** (0.001)	0.262*** (0.021)	0.262*** (0.021)	-0.018*** (0.004)	-0.021*** (0.005)	0.271*** (0.010)	0.275*** (0.010)	0.348*** (0.013)	0.335*** (0.013)	0.268*** (0.013)	0.267*** (0.013)
Gender	0.001 (0.001)	0.160*** (0.014)	0.159*** (0.014)	0.009*** (0.003)	-0.005 (0.005)	-0.080*** (0.009)	-0.079*** (0.010)	-0.079*** (0.009)	-0.070*** (0.010)	-0.057*** (0.008)	-0.049*** (0.008)
Age	0.000 (0.000)	0.034*** (0.004)	0.034*** (0.004)	-0.002*** (0.000)	-0.002*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.015*** (0.002)	0.014*** (0.002)	0.013*** (0.001)	0.013*** (0.001)
Marital status	-0.002** (0.001)	0.009 (0.012)	0.010 (0.012)	-0.015*** (0.003)	-0.027*** (0.005)	0.048*** (0.007)	0.053*** (0.008)	0.034*** (0.009)	0.038*** (0.010)	-0.008 (0.008)	-0.003 (0.009)
Work experience	0.000 (0.000)	0.030 (0.020)	0.030 (0.020)	-0.010*** (0.007)	-0.012*** (0.002)	0.138*** (0.005)	0.141*** (0.005)	0.068*** (0.008)	0.066*** (0.007)	-0.025*** (0.006)	-0.024*** (0.006)
Household head	0.000 (0.002)	0.025 (0.026)	0.025 (0.026)	0.007 (0.006)	0.010 (0.007)	0.006 (0.014)	0.005 (0.015)	-0.031** (0.013)	-0.032** (0.013)	-0.018 (0.013)	-0.021 (0.013)
Dependent persons	-0.002*** (0.000)	0.000 (0.005)	-0.001 (0.006)	0.006*** (0.001)	0.027*** (0.004)	-0.008*** (0.003)	-0.019** (0.009)	-0.047*** (0.003)	-0.055*** (0.003)	-0.037*** (0.003)	-0.051*** (0.003)
Province-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for selection bias			Yes		Yes		Yes		Yes		Yes
Number of observations	30,245	33,646	36,816	41,568	44,699	27,611	30,800	41,558	44,689	38,374	41,515
R-squared	8.2% <sup>a</sup>	23.1%		9.0% <sup>a</sup>		22.0% <sup>a</sup>		24.4% <sup>a</sup>		18.5% <sup>a</sup>	
Wald test of independent equations (rho = 0)			0.249		0.000		0.1414		0.0007		0.000

Notes: Robust standard errors in parentheses. Standard errors are robust to the cross-sectional dependence within provinces. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . <sup>a</sup> Pseudo R-squared.

In the specifications from (2) to (11), each indicator of labour market outcome is first estimated with the equation (1) in Section 4 above, and then equation (2) that controls for the selection bias. In the last row of Table 3, the Wald tests of independent equations show that specifications (5), (9), and (11) are more appropriate in determining the labour market outcomes of recent graduates. These tests indicate that the selection biases are inherent with the conventional OLS estimators for the dependent variables of extra work demand, having social insurance, and formal business registration. The Heckman two-step procedure thus yield unbiased estimates for these dependent variables. Although college and university graduates do not differ markedly to high school graduates in terms of work status, they differ remarkably in terms of wages. The OLS estimator for the monthly wage in specification (2) shows that college graduates have 12 percent higher wages than the reference group of high school graduates. Similarly, university graduates have 26 percent higher wages than high school graduates. These differed wages are basically of the same magnitude in specification (3), which controls for selection bias with the Heckman procedure.

The demand for extra work while being employed might indicate the level of underemployment among recent graduates. The negative estimated coefficients for *college* and *university* in the specifications (4) and (5) show that these cohorts demand for less extra work while being employed. Among them, university graduates demand for even less extra works than college graduates. Specifically, in specification (5), the university and college graduates have respectively 2.1 percent and 1 percent lower probability of extra work demand than the reference group of high school graduates. The other control variables in these two specifications also indicate some interesting results about the level of underemployment among recent graduates. Specifically, male graduates and those with more economically dependent person demand for more extra works, while age and marital status are negatively correlated with the demand for extra work. The finding that the number of economically dependent persons induces demand for extra works is particularly interesting, as this might indicate the level of economic burden encountered by recent graduates in a given household. For economic reasons, recent graduates would have higher motivation of looking for extra works if their families are more economically disadvantageous. Besides, the negative impact of age on the demand for extra work is understandable given graduates' more stable and transited jobs over time.

Specifications from (6) to (11) in Table 3 further indicate the impacts of college and university education on the labour market outcomes of recent graduates. The estimated coefficients for these variables are much greater in magnitude than those appeared in the previous specifications. The probability of obtaining permanent contracts, having social insurance, and being employed in establishments with formal

business registration is much higher than that of high school graduates. Among recent graduates with college and university education, the former has smaller probability of attaining the just-mentioned labour market outcomes after being employed. For example, the probability of university graduates obtaining permanent labour contracts is 27 percent more than that of high school graduates, which is higher than the similar gap between college and high school graduates, 17 percent. All of the control variables related to demographic and individual characteristics have sign impacts as expected, except for gender and the number of economically dependent persons. For example, the persistently negative estimates coefficients for gender might indicate the more readiness of male graduates in working in the informal sectors that do not offer permanent contracts, social insurance, and not have business registration. However, it is cautious to yield concrete conclusions on the gender effects on these labour market outcomes, as we could not completely control for the unobserved heterogeneity that is correlated with gender and potentially affect his or her performances in the labour market.

In short, the empirical results in Table 3 reiterates high-quality labour market outcomes achieved by recent graduates with college and university education, compared to high school counterparts. Although these three cohorts of graduates do not defer remarkably in terms of employment status, having employed or not, college and university graduates have relatively higher wages, better employment protection than high school counterparts. Specifically, the former has higher chances of working in formal sectors, and of securing a job with permanent labour contract and social insurance. By studying these multi-dimensional educational effects on recent graduates, this paper provides a more balanced view on the labour market outcomes of recent graduates in a developing country. It gives out evidence against recent debates on very high unemployment rates among high-skilled employees with college and university education. Higher education thus benefits recent graduates in terms of high-quality jobs, not just decent ones. The challenge confronting college and university graduates is not finding a decent job, but the one that could guarantee them with better employment projection that is crucial for their smoother school-to-work transition.

## **6. Conclusion**

This study examines the labour market outcomes of recent college and university graduates in reference to high school counterparts. It not only looks into graduates' employment status, being employed or not, but also other multi-dimensional labour market outcomes after being employed; namely, monthly wages, level of employment, the chances of having permanent labour contracts, social insurance, and of working in establishments with formal business registration. The

empirical findings show that college and university graduates outperform high school counterparts in terms of these high-quality labour market outcomes, though the chance of being employed does not differ markedly among these graduate cohorts. These findings remain unchanged even after having controlled for selection bias that is inherent in the labour market studies. The paper would contribute to recent debates in higher education in the transition economies like Vietnam, where the focus is on whether the move towards mass higher education might result in differed labour market outcomes for recent graduates. This paper provides concrete evidences for a better school-to-work transition for recent graduates, where the high-quality labour market outcomes play a more important role than the mere stance of being employed or not. A number of venues for further studies could be departed from this study. Among them is the impact of over education on skill utilization, and scarring effects in the labour markets of a developing country like Vietnam.

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# GENDER INEQUALITY IN THE TRANSITION ECONOMY: A CASE STUDY OF DOUBLE BURDEN OF VIETNAMESE WOMEN

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## **Abstract**

*Gender inequality has been much researched in the existing literature review in the last few decades. On the one hand, women are much freed from some gendered barriers that limit their educational, job and personal welfare opportunities at different levels. On the other hand, empowerment for women worldwide has been a 'stalled revolution' in which they are constrained in gender stereotypes that require them to play the critical role within the home. We argue that empowerment for women also creates more burden for them with which they need to shoulder two roles of both paid labor and unpaid care-giver. In so doing, Vietnam, a transition economy, is selected to make a case for the increasing burden women face. Besides the literature review, secondary data mainly from General Statistical Office of Vietnam is used to provide more evidence on in what way women are in the double burden. We conclude that empowerment for Vietnamese women has been far from achieving gender equality and the continuation of a holistic gender equality strategy is needed.*

**Key words:** *Double burden; gender equality; gender roles*

## **1. Introduction**

The transition from a centrally planned economy to a market economy has brought about positive changes to women's rights and status in Vietnam. Women in Vietnam participate more and more in economic, political and social activities. Women participating in the labor market are increasingly at a high level with 48.21% of the total number of employees aged 15 and above working in 2017 (General Statistics Office of Vietnam 2017). The proportion of women participating in paid jobs is increasing, at 73.2% in 2017 (UNDP 2018). The rate of women's income is 83.74% compared to Vietnamese men in 2017. The proportion of female National Assembly deputies increased from 3% (National Assembly I) to 24.4% (National Assembly XIII) and increased. level 26.72% (QH XIV). Especially, for the first time, the

National Assembly of Vietnam has a female president. According to a survey of small and medium enterprises in 2016, 25% of leaders of small and medium enterprises in Vietnam are female (Le Quang Canh and Nguyen Vu Hung 2016).

However, gender barriers for women still exist. The effects of Confucianism have formed and deepened gender stereotypes and prejudices that are detrimental to both men and women, especially women. Women are often subordinate to men within the family and society. Strictly customary laws such as "tam tông, tứ đức" (Three Obediences and Four Virtues) or more recently "giỏi việc nước, đảm việc nhà"... are still highlighted by a vast majority of the population. These cultural factors have gradually limited the rights and scope that women can participate in. As a result, women still face many barriers to participation in economic, political and social fields. On the other hand, gender stereotypes and prejudices exist in the media in Vietnam. As reported by CSAGA and Oxfam in 2011, communication in Vietnam has been distorted and perpetuated gender stereotypes. Women often appear and are featured with the image of "Nội tướng" (main player within the home) as a housewife, harmony keeper, taking care of meals and health for family members (CSAGA and Oxfam 2011).

## **2. Literature Review**

The term 'patriarchy' often used by feminist scholars and sociologists refers to the structures within which men predominate and take their authority over women (Waters, 1989). There are some basic forms of patriarchy including the kinship ruled by men, the oppression from men, the men-oriented perpetuation of social reproduction and the formation of the so-called 'sex-class' categories. More specifically, first, kinship structure becomes the root of male domination to express the masculinity and power in a family. As cited by Waters (1989, 195), Maine (1963, 118) indicated that "The eldest male parent - the eldest ascendant - is absolutely supreme in his household. His dominion extends to life and death, and is as unqualified over his children and houses as over his slaves; indeed the relations of sonship and serfdom appear to differ little beyond the capacity which the child in blood possesses of becoming one day a family himself". Obviously, in this case, before being affected by the official laws in the legal system, the family is first structured by male domination. Similarly, Weber (1968) elaborated on the understanding of 'patriarchy'. He considers 'patriarchy' as the 'patriarchalism' rather than its origin. Accordingly, 'patriarchalism' is a status occurring in a group of people for some certain purposes within which one person will determine the way of heredity and therefore, patriarchy often coexists with 'gerontocracy'. What can be drawn from the works of Maine (1963) and Weber (1989) are the characteristics of 'patriarchy'. They include: first, the unbalanced or unequal allocation of power among the members of a group depends on

sex and age; second, women are shunted and set aside in the process of passing down the power among generations.

In addition, Connell (1987) showed that understanding 'patriarchy' should be put in the gendered contexts in order to be more conscious about the distribution of power, gendered division of labor which favors men as well as assigns women to do domestic work (unpaid work) in the social life. On the other hand, McDonough and Harris (1978) asserted that the relationship relating to power in patriarchy is, in fact, structured by the other relations of labor and asset among members. The lower status of women could be explained through the relations of them in the processes of social reproduction. More importantly, Delphy and Leonard (1984) indicated that unpaid labor within households is probably the way to which women are exposed to men's oppression. The way division of labor occurs within domestic sphere is much different with what take places in the production of goods and services. The labor relation will be built up regardless men's economic status. On the contrary, Hartmann (1976) strongly supposed that patriarchy takes place not only within households but also in a broader sphere, public, for example. To illustrate this, Hartmann refers to activities which women take part in a real world such as educational, political and religious activities. Obviously, the space for these activities is beyond the domestic sphere within a household.

The division of labor within households, particularly between men and women, refers to a term "Family strategies" which could be understood as the ways in which a family will make the decision about the size of family members, the distribution of labor in many different levels (Lamphere 1987). In doing so, the decisions will cover the questions on how much time for work, who will be the main labor(s), how to balance the time for income-generating work and care work for the elderly and the children. These decisions are affected by the organization of gender, social norms (Brenner and Laslett 1986). According to the review of Laslett and Brenner (1989), gendered division of labor complies with the interaction among social norms, family values, individual decisions across the span of world history from early 19th century.

Agarwal and Silliman (1996) defined the concept of the gender-based relation of labor in production in the way that labor market in which men and women take part in should be considered to be based on the differentiation of power among them. It can be witnessed at all micro levels including households, local market and so on. In many contexts, women attempt to take the role to play in labor market in negotiation with the so-called "altruism" and the natural duties, which are inclined to women, with the aim of gaining more relative independence in correlation with other

family members (Ong 1987, Mill 2001). To a large extent, women consider the decision of migration as a means of labor force participation and with that way, women can not only relatively break up with the traditional roles in a family which often disproportionately fall on women than men but also help themselves gain more freedom (Foner 1978). Employment does not, however, fully ensure women's independence if women are entitled to the domestic work in the home. In the same way, it helps women redefine themselves in a different way to harmonize the work inside and outside the home (Pedraza 1991).

Vietnam has witnessed the renovation (economic reform) since 1986 while it is still affected by Confucian-based ideology in terms of culture, family values and the social standards for women. Such a context entails the great effort for women those who want to take part in the labor market as well as try to avoid the possible discrepancies due to the change of the economic status or the decline of time for housework.

One of the reasons could make sense in illuminating the tension requiring women to do trade-off or negotiate with their family regarding the work inside and outside their family is the norm of patrilocality. In the context of traditional Vietnam, especially in rural areas, this is a mandatory role for the newly marriage couple, particularly in the case the husband is the only son of his parents. For example, grandparents may provide free short-term childcare but their daughter-in-law also needs to learn how to serve them (Hirschman and Nguyen 2002). More recently, similarly, the analysis of Khuat et al. (2013) is the most obvious emphasis for the burden of modern Vietnamese women. Vietnamese women in contemporary society need to be responsible for many different tasks including doing housework well, having a good performance at public. These tasks are encouraged by policies and the organizations related to women's issues. The research of Khuat et al. reveals an important point that ironically, the policy of the state, which targets the gender equality, resonates with the traditional culture to put more burden on women's shoulder and make them achieve the socially expected identity of "modern" women" (p.78). It is also supported by the research of Jayakody and Pham (2013) in terms of the continuity of attitude regarding 'fathering' in the cultural context of Vietnam through many years.

Whereas in contrast, parallel with the increasing economic status in terms of contributing to family's finance, women are more and more allowed to have paid work under the less pressure from their family duties. The study of Nguyen (2012) indicates that the ideology that women is totally confined in home with housework in

terms of care duties for husband, children and/or the elderly by doing washing, cleaning and so on is not completely dominant because the housework is partly transferred to the husband due to the more important role of women in supporting family in terms of finance. Men can make a concession in cooking, picking up the children rather than buying foodstuff or washing. Interestingly, men's engagement in household chores does not necessarily lead to the decline of women's. For instance, an analysis of 40-year cohort data of Teerawichitchainan et al. (2009) demonstrates that although the awareness of men about gender equality along with women's increasingly improved educational attainment has changed, there have the certain kinds of housework men would do. For example, men will be likely to do household chores rather than childcare. Therefore, despite the improvement of women's education which offers many job opportunities for women, they still have a much more contribution to household labor than men.

### **3. Methodological approach**

This paper analyses women's issues through the gender perspective. Gender lens is applied to explore the deep insight into the double burden that women face in a modern society. Further, reviewing the literature is employed to frame the research in a systemic way in which the research problem is approached through a number of relevant gender-related themes such as gender roles, patriarchy, female participation in politics, labor market and domestic sphere.

Secondary data is also used to provide more evidence to showcase the conundrum which asks women to behave in a way in line with social expectations.

[1] The code of conduct for women's behaviors with which Vietnamese women have to strictly follow the rules set by men (father, husband and son). For example, women have to obey their father, husband and son, hard-working and careful with their speech, take care of family members and family's harmony...

[2] A propaganda initiated by Vietnamese government encourages Vietnamese women to be excellent at two roles, a good labor and a great mom and wife.

### **4. Results and Discussion**

The Vietnamese economy is a gendered structure in that economic resources such as jobs, assets, infrastructure and time are not equally distributed between women and men. Gender biases can be found in the labour market, where women often work in a narrow range of sectors and occupations, and their earnings do not always reflect the full extent of their contribution. Gender biases are also found in the sphere of household-based domestic work and care, which are overwhelmingly

carried out by women and girls, with only limited support from male family members and public institutions. This household work, which involves many hours of unpaid labour spent on cooking and cleaning, collecting water and fuel, and taking care of the children, the elderly, as well as ill and able-bodied adults, is vital to ensure the effective functioning of the market-oriented economy, through its impact on the wellbeing and productivity of the labour force (Elson, 1991; UN Women, 2015). The burden of combining productive (mostly paid) and reproductive (unpaid) responsibilities limits women’s access to decent jobs, often increases their stress levels and has an impact on power dynamics within households.

### **Rising female participation in politics**

Strengthening women’s participation in leadership and management to gradually close the gender gap in the political field is one of the seven objectives of the National Strategy on Gender Equality for the 2011-2020 period. Specifically, the objective is to strive for 25% of women in the Communist Party’s executive committees at all levels in the 2016-2020 tenure; and over 35% female deputies elected to the National Assembly and the People’s Councils at all levels in the 2016-2020 tenure; and over 95% of ministries, ministerial-level agencies, and government agencies having high-level female leaders by 2020.

*The statistics shows that the role and status of women in the political field have been enhanced through the years.*

The data of table 1 shows that the percentage of women in the Communist Party’s executive committees in the 2016-2020 tenure at the provincial level was 12.6%, at the district level 15.5%, and at the local level 20.8%. Thus, at all levels, the percentage of women in the Communist Party’s executive committees had not reached 25%.

**Table 1: Percentage of women in the Communist Party’s executive committees by administrative level, 2015-2020**

	<b>Provincial level</b>	<b>District level</b>	<b>Local level</b>
<b>2015-2020</b>	12.64	15.49	20.08

*Source: The Central Party Committee’s Commission for Organization*

In the 2016-2020 tenure, 26.8% of the National Assembly members are women, being one of the few Asia-Pacific countries with a percentage of female parliamentarians exceeding 25%.

**Table 2: Percentage of female members of the National Assembly by term**

1997 – 2002	2002 – 2007	2007 – 2011	2011 – 2016	2016 – 2021
26.2	27.3	26.0	24.4	26.8

*Source: The National Committee for the Advancement of Women in Viet Nam (NCFAW)*

Notably, the number of female members holding important positions in the National Assembly agencies has increased in recent tenures. Notably, the National Assembly has had a chairwoman, for the first time. The proportion of female members of the National Assembly increased by 2.4 percentage points as compared to the previous tenure, but still falls short of the objective set in the National Strategy by 8.2 percentage points. Similarly, although the percentage of female deputies in people's councils has increased over the recent tenures, it has not met the targets. Specifically, the percentage during the 2016-2021 tenure is 26.6% at the provincial level, 27.5% at the district level, and 26.6% at the commune level.

**Table 3: Percentage of female deputies in people's councils by administrative level and term (%)**

	Provincial level	District level	Commune level
<b>1997-2004</b>	21,1	21,0	16,6
<b>2004-2011</b>	23,9	23,0	19,5
<b>2011-2016</b>	25,2	24,6	21,7
<b>2016-2021</b>	26,6	27,5	26,6

*Source: The National Committee for the Advancement of Women in Viet Nam (NCFAW).*

Also, the proportions of government agencies having high-level female leaders considerably fall short of the objective in the National Strategy. In 2016, 36.7% of the ministerial and government agencies had high-level female leaders. This percentage was 44.4% among ministries, and 25% among ministerial-level and government agencies.

**Table 4: Percentage of ministries, and ministerial - level and of Government agencies with high-level female leaders**

OVERAL	Ministries	Ministerial-level agencies	Government agencies
<b>36.7</b>	44.4	25.0	25.0

*Source: The Ministry of Home Affairs*

**Increasing involvement of women in economic sphere (labor participation, economic leadership, etc)**

The aggregate picture of employment status in Viet Nam shows that more women than men are in vulnerable employment. This is mostly due to a much larger share of women in the category of ‘unpaid family workers’.

The International Labour Organization (ILO) defines workers in vulnerable employment as the sum of own-account workers and unpaid family workers. As in many other low- and middle-income countries, women in Viet Nam are more likely than men to be in vulnerable forms of work.

**Table 5: Employed population by sex and employment status, 2014 – 2018 period in Viet Nam**

	2014			2016			2018		
	Female (%)	Male (%)	Total (%)	Female (%)	Male (%)	Total (%)	Female (%)	Male (%)	Total (%)
<b>Employer</b>	1.2	2.9	2.1	1.8	3.8	2.8	1.2	2.9	2.1
<b>Own-Account Worker</b>	41.6	40.1	40.8	40.3	39.5	39.9	39.1	39.0	39.0
<b>Unpaid Family Worker</b>	26.6	16.5	21.4	22.0	10.4	16.1	20.8	9.9	15.1
<b>Wage Worker</b>	30.6	40.5	35.6	35.8	46.3	41.2	38.9	48.2	43.8

*Source: Labour Force Survey, GSO 2018*

Table 5, constructed with most recent LFS data shows that in 2018, 60 per cent of women workers were in vulnerable employment compared with less than 49 per cent of men workers and these proportion has been decreased since 2014. It is significant that this gap is mostly explained by a much larger share of women in the category of ‘unpaid family workers’ (21 per cent of women compared with 10 per cent of men are in this group), while the female and male shares of ‘own account workers’ are similar (39.1 per cent and 39 per cent of the total employed population for women and men respectively).

Importantly, the proportion of women in the ‘wage worker’ category has increased in the last five years, while the proportion of women in all the other categories has declined. This is most certainly a reflection of the increased presence of women in manufacturing described earlier, since wage work is a more common form of employment in this sector. By contrast, and as might be expected, agriculture tends to have higher shares of unpaid family workers and own account workers than other industries (FAO (2011), IFAD (2012) and ILO (2010)).

The proportion of women in vulnerable employment is higher than that of men, but the proportion of wage workers with social insurance is lower among men (19.7 per cent) than among women (22.9 per cent) (GSO, Labour Force Survey, 2016). This is most likely due to male wage workers’ overrepresentation in domestically owned private enterprises, where social insurance coverage is much lower than in either the public sector or the foreign-owned sector.

## More engagement of females in professional and technical works

**Table 6: Employed population by sex, aggregate industrial sector and Ownership**

*Unit: %*

	Industrial sector			Ownership		
	Agriculture	Industry and Construction	Services	State-owned	Private domestic	Foreign-owned
<b>Total</b>	38.2	26.6	35.2	9.6	84.9	5.4
<b>Male</b>	37	30.3	32.7	9.4	87.2	3.4
<b>Female</b>	39.5	22.6	37.8	9.9	82.5	7.6

*Source: Labour Force Survey, GSO 2018*

Table 6 shows that, women is more engaged in professional and technical works than men. These data show that the proportion of women having jobs in services is higher than that of men (with 37.8% in female and 32.7% in male). However, in non-state economic sectors which is the majority of workers, men still have a better position than women.

**Table 7: Gender patterns of employment at one-digit level industrial disaggregation, 2018**

	Female Intensity (%)	Female Employment (% of total female employment)	Male Employment (% of total male employment)
<b>Total</b>	47.6	100	100
A. Agriculture, forestry and fishing	49.2	39.5	37.0
B. Mining and quarrying	19.0	0.1	0.6
C. Manufacturing	54.9	20.5	15.3
D. Electricity, gas, steam and air conditioning supply	16.1	0.1	0.5
E. Water supply, sewerage, waste management and remediation activities	40.7	0.2	0.3
F. Construction	9.8	1.6	13.6
G. Wholesale and retail trade; Repair of motor vehicles and motorcycles	55.7	15.7	11.3
H. Transportation and storage	8.5	0.6	5.8
I. Accommodation and food service activities	67.8	6.9	3.0
J. Information and communication	35.1	0.4	0.7
K. Financial, banking and insurance activities	49.7	0.8	0.7

	<b>Female Intensity (%)</b>	<b>Female Employment (% of total female employment)</b>	<b>Male Employment (% of total male employment)</b>
L. Real estate activities	40.5	0.4	0.5
M. Professional, scientific and technical activities	35.3	0.4	0.6
N. Administrative and support service activities	40.2	0.5	0.7
O. Communist Party, socio-political organizations activities; public administration and defense; compulsory social security	29.6	1.9	4.2
P. Education	73.8	6.1	2.0
Q. Human health and social work activities	59.5	1.4	0.8
R. Arts, entertainment and recreation	46.6	0.5	0.5
S. Other service activities	44.7	1.6	0.2
T. Activities of households as employees; undifferentiated goods and services producing activities of household for own use	94.6	0.7	0.0
U. Activities of extraterritorial organizations and bodies	37.8	0.0	0.0

*Source: Labour Force Survey, GSO 2018*

This further sectoral disaggregation exposes more marked gender patterns than data for broad industrial sectors, showing how women tend to be clustered in different sectors than men. Table 7 shows that in 2018, the main sectors of employment for women after agriculture are, in order of significance: manufacturing (20.5 per cent of total female employment), trade (16 per cent), hotel and restaurants (6.9 per cent) and education (6.1 per cent). Paid domestic services is by far the most female-intensive sector in the whole economy (94.6 per cent of the total employed in this sector is female), whereas construction and transport are predominantly male (less than 10 per cent of the employed in these sectors are female).

An interesting finding from the 2012 VHLSS is that women with little or no schooling are obviously at a disadvantage in obtaining wage jobs compared to women with more schooling but this gradient is not as steep for men. Only 13 per cent of women with no schooling have access to wage employment compared to 48 per cent of women with upper secondary education, while 22 per cent of men with no schooling are in wage employment compared with 49 per cent of men with upper secondary education (reported in Rodgers, 2015, Table 3.6). This suggests that

women may face a higher standard in gaining access to wage employment and/or that men are more likely to be in unskilled wage jobs in non-tradable domestic industries such as construction and transport, where terms of work are insecure and formal education not a condition for entry. Generally, it is evident that, for both women and men, higher levels of education greatly facilitate access to jobs that are decent according to the ILO definition.

**Table 8: Average monthly earnings of wage workers by sex, location and industrial sector, 2018**

	Type of contract	Average monthly earnings (thousand VND)			Gender Differential
		Total	Male	Female	(%)
	<b>TOTAL</b>	5622	5919	5216	88.1
<b>Firm ownershi P</b>	1 State-owned enterprises	6377	6857	5875	85.7
	2 Private domestic enterprises	5216	5544	4619	83.3
	3 Foreign-owned enterprises	6435	7227	6043	83.6
<b>Economic sector</b>	1 Agriculture, forestry and fishery	3666	4054	2940	72.5
	2 Industry, Mining and Construction	5524	5742	5201	90.6
	3 Services	6189	6680	5622	84.2
	<b>URBAN</b>	6558	7052	5954	84.4
<b>Firm ownershi P</b>	1 State-owned enterprises	7102	7768	6391	82.3
	2 Private domestic enterprises	6179	6621	5504	83.1
	3 Foreign-owned enterprises	7083	8112	6527	80.5
<b>Economic sector</b>	1 Agriculture, forestry and fishery	4579	5120	3193	62.4
	2 Industry, Mining and Construction	6312	6698	5782	86.3
	3 Services	6838	7472	6148	82.3
	<b>RURAL</b>	4954	5173	4630	89.5
<b>Firm ownership</b>	1 State-owned enterprises	5384	5579	5186	93.0
	2 Private domestic enterprises	4643	4966	3989	80.3
	3 Foreign-owned enterprises	6068	6676	5781	86.6
<b>Economic sector</b>	1 Agriculture, forestry and fishery	3512	3853	2907	75.4
	2 Industry, Mining and Construction	5140	5297	4898	92.5
	3 Services	5261	5621	4811	85.6

*Source: Labour Force Survey, GSO 2018*

Earnings are another important dimension of employment quality. Table above shows that agriculture is by far the lowest paying sector for women, followed by paid domestic services and hotel and restaurants. Agriculture is also where the gender wage gap is most pronounced.

Gender gaps in economy-wide earnings may be due to various reasons such as the fact that women tend to cluster in lower-paying sectors – what is often called ‘horizontal gender segregation’. Another reason may be that women also cluster in lower-paying occupations (within a sector), whereas men are able to more easily reach higher paying positions—what is called ‘vertical gender segregation’. For example, according to 2012 VHLSS data, while 40 per cent of all male workers were skilled production workers, just 28 per cent of female workers belonged to this occupational category. In contrast, just 11 per cent of male workers held jobs as sales and services workers – an occupation category that pays less than skilled production work – compared with 18 per cent of female workers. The gender gap in the proportion of skilled production workers as well as in the proportion of sales and services workers seems to have widened since 2004 (Rodgers, 2015). Gender gaps in earnings may also be due to the fact that women tend to undertake paid work for fewer hours than men. In Viet Nam, 14 per cent of all female wage workers worked part-time in 2012, compared with 10 per cent of men, a gap that has not changed since 2004 (Rodgers, 2015).

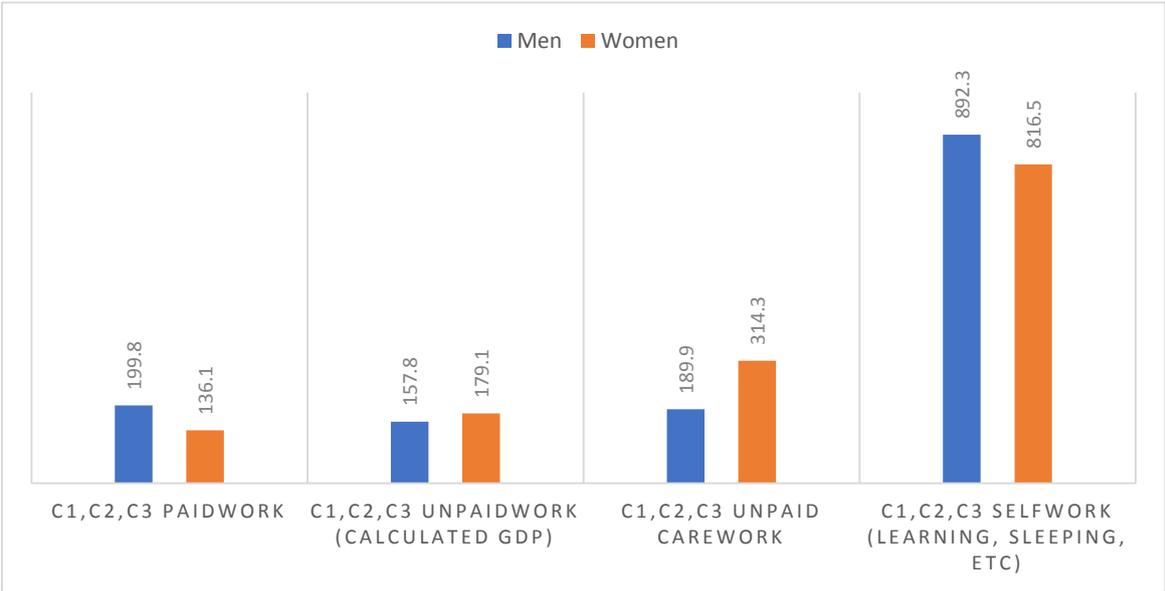
### **In contrast, Vietnamese women are still a main player in domestic sphere compared to men**

Unpaid care and domestic work are primarily undertaken by women and girls throughout the world. As indicated, women perform around 75 per cent of the world’s total unpaid care and domestic work, which has been conservatively valued at 13 per cent of global GDP. Globally, women perform nearly 2.5 times as much of this work as men, with large gender disparities in time spent cooking, cleaning and caring for household members (IDS, 2016). Similar findings were revealed in the 2012 World Development Report and United Nations Development Programme’s (UNDP) 2015 Human Development Report.

The imbalance in paid and unpaid work of women and men is pronounced in many countries. As in other countries, housework remains the primary responsibility of Vietnamese women, as showed by Viet Nam’s Household Living Standards Survey (VHLSS), which has been conducted every two years since 2002 by the General Statistics Office (GSO). According to VHLSS 2008, women and men spent 2.2 hours and 1.5 hours per day for housework, respectively (Rodgers, 2015). They are the only statistical data available at the national level. There was a question on ‘hours of housework per day’ in the VHLSS until 2008, but this has no longer been the case since 2010.

The time-use survey (TUS) is a tool for understanding the patterns of individuals’ time use. It provides data and information on the time spent by women and men on specific activities. It is commonly used to measure the invisible contribution of unpaid care and domestic work of women. In Viet Nam, the first TUS was conducted in nine provinces in 2016 by ActionAid Viet Nam. Figure 1 indicates

that on average, women spend 314 minutes and men spent 190 minutes per day on unpaid care and domestic work, and that there is little difference in the time spent on unpaid care work among women’s groups with different education levels and marital status (ActionAid, 2016).



**Figure 1: Overview of the time use diary**

*Source: Report on UCW, ActionAid Vietnam, 2016*

Note: C1, C2, C3 are the arithmetical averages at three round of data collection of the research

A recent study on the social determinants of gender inequality in Viet Nam (ISDS, 2015) found that while progress has been made in many areas, the value of the role of family caregiver assigned to women is still firmly sustained in the minds and behaviour of Vietnamese men and women across all social strata. Here, there is a large gap in the balance of the gender division of labour, which a key factor influencing and maintaining gender inequality

**5. Conclusion**

This broad-brush picture based on official statistics permits identification of a number of key policy areas that require attention if the most persistent aspects of women’s socio-economic disadvantage are to be redressed. Thus, this section outlines a set of initial broad-brush policy recommendations following from the statistical picture presented in this chapter to help the Government prioritize its responses to these challenges.

*Improve the productivity and earning capacity of women who rely on agriculture.* When looking at the sheer numbers of women involved (more than 12 million, or about half of the total female labour force) and the regions where agriculture dominates (the poorest ones), it is apparent that an economic strategy

aimed at supporting women farmers more proactively is crucial for achieving gender equality as well as reducing spatial and income inequality and promoting a sustained and balanced growth path.

*Facilitating women's access to employment outside jobs and sectors traditionally seen as 'female'.* The Government could intervene in many ways, for example, through increasing support for the provision of non-traditional skills. The focus should be, in particular, on enabling women to participate in training of high quality and providing opportunities for them to specialize in technical fields, which are still often closed to them.

*Support public investment to reduce and redistribute unpaid domestic work and care.* Government should take a more proactive role in promoting measures to reduce and redistribute unpaid work; and must take steps to ensure that consideration of unpaid domestic work and care is systematically integrated in the formulation of its macro-economic planning.

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**FACTORS AFFECTING THE DECISION OF CHOOSING EXPORT  
LABOR MARKETS OF RURAL WORKERS - CASE  
IN PHU THO PROVINCE**

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**Abstract:**

*Labor export is now considered one of the foreign economic activities which brings great benefits in term of socio-economic aspects in Vietnam. Seizing this opportunity, from a poor province in the northern midland and mountainous region of Vietnam - Phu Tho is gradually changing thanks to labor export activities. With a source of foreign exchange deposited hundreds of billions of VND each year, labor export has helped thousands of households to stabilize their livelihoods and contribute to the renewal of many rural areas in Phu Tho province. This study was conducted to find out the factors affecting the decision to export labor of rural workers in Phu Tho province relying on the data set of 142 observations are those who are studying at the labor export center at Hung Vuong University - Phu Tho province. The analytical results are based on descriptive statistical methods, comparative methods and regression analysis, which shows why workers choose to export workers abroad, especially in Japan market because the country brings high income and many opportunities to work overtime compared to other countries. In addition, the research team also surveyed the elements of individuals, expected markets, orientations from family and friends and cost factors also affected on the decision to export labor of rural workers in Phu Tho province.*

**Key words:** *Labor Export, Rural Workers, Remittances, Phu Tho province.*

## 1. Introduction

Labor export is determined by the Communist Party and State of Vietnam as an important external economic activities, which plays a huge role in the country's socio-economic development. Viet Nam's labor export activities are increasingly expanding to many countries and territories around the world, partly meeting the needs of countries' labor resources, with different types of labor. In recent years, labor export activities have obtained some positive results, 2018 is the 5th year in a row that the number of Vietnamese workers working abroad exceeds 100,000 employees / year, more than 142,800 employees, exceeding 30% compared to the year plan and up 6% compared to 2017 (*Department of Management of Foreign Labor, Ministry of Labor, Invalids and Social Affairs, 2018*). With such a number, it is only about the money that oversea workers transfer by the official way to reach over 3 billion USD (World Bank, 2018), contributing greatly to the socio-economic situation of the country, especially the construction of new rural areas, unemployment and poverty reduction. On the other hand, number of laborers have absorbed the experience and advanced technology for applying in Vietnam.

Phu Tho is a province located at the gateway to the Northern midlands and mountains region of Vietnam, so the terrain is divided into a sub-region. In particular, the mountainous area accounts for 79% of the natural area of the province, so the proportion of the population living in rural areas and mountainous areas is about 70% (2017), so the economic situation in the province still faces many difficulties. On the other hand, the average population of the province in 2017 is estimated at 1,392 thousand people, the natural population growth rate is 11.65 (per 1,000) and the number of people in working age is estimated at 775.6 thousand people (Statistical Yearbook Phu Tho province, 2017). The working age population is concentrated mainly in rural areas and poor rural areas with many difficulties, reaching 655.1 thousand people (accounting for 84.5%), contrary to the working age population in urban areas only reached 120.5 thousand people (accounting for 15.5%) (Appendix 1).

The population in working age accounts for over 80%, mainly concentrated in rural areas, so it is difficult to have opportunities for improving skills and receive high quality professional training. Therefore, the level of trained labor in rural areas in Phu Tho province accounted for 17.1% compared to the whole province (Appendix 2).

Currently, labor export has always been concerned as one of the effective way in poverty reduction and new rural construction in Phu Tho province. Encouraging people participating in labor export market has helped a large number of workers have working skills and social skills so that after the contract expires, they can work effective at the facilities in the province. Simultaneously, Phu Tho province also

determined that labor export is the right direction, helps to reduce poverty, create jobs, raise income and enrich the people well. Every year, Phu Tho province has more than 2,500 employees working abroad for a definite time, concentrating in traditional markets such as Japan, Korea, Taiwan, Malaysia, etc. In recent years, the number of exported people labor exceeds 8 - 12% of the target annually. For poor and near-poor households, the province has always disseminated in time so that they can grasp the policies and labor export programs, especially to facilitate the implementation of procedures bank loans. Thereby, it helps poor and near-poor households find suitable labor export markets in order to get out of poverty and improve their livelihood.

However, in which country to export is something that every worker is interested in and why they choose that country to go to work or study abroad to find solutions to encourage workers doing better. Simultaneously, to provide solutions and recommendations to continue to promote the role of labor export policy in contributing to socio-economic development of Phu Tho province, the authors carried out this study with three specific objectives: (i) Overview of theoretical basis to clarify the framework of factors affecting the decision to export labor (or study abroad) of rural workers (ii) Identify factors affecting the decision to export labor (or study abroad) of rural workers in Phu Tho province; (iii) Propose some recommendations to continue promoting the role of labor export policy in contributing to socio-economic development in Phu Tho province in the future.

## **2. Overview of selection theory and labor export activities**

### ***2.1. Overview of selection theory***

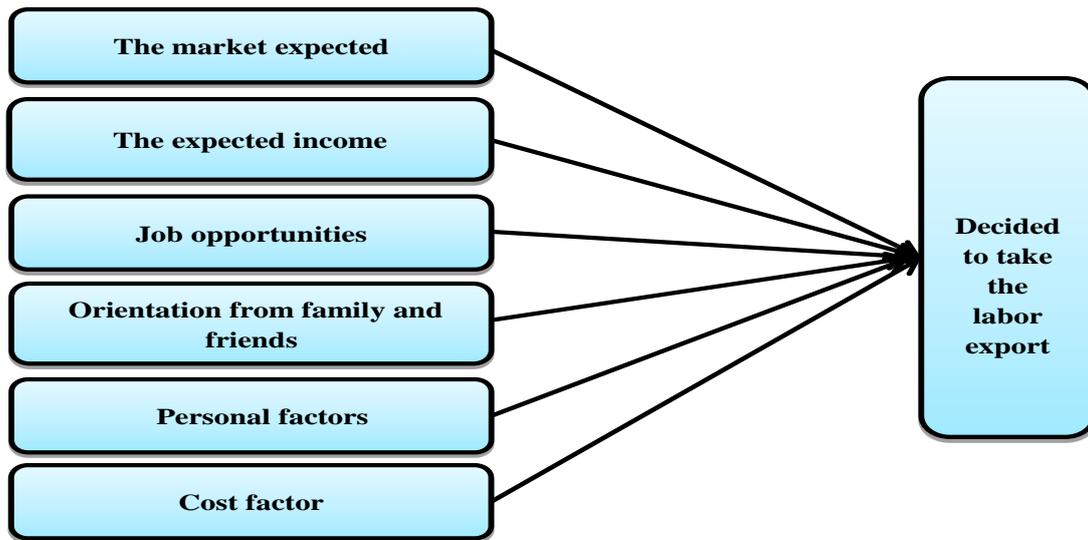
There are many different theories regarding the factors that influence the decision to export labor that have been built and developed, but these can be divided into two groups: Theory of Action logical action (TRA) and planned behavioral theory (TPB).

Reasonable action theory of Fishbein and Ajzen (1975) said that before deciding to perform a certain behavior, people will consider and consider the possible consequences or consequences if they perform those acts . After that, everyone will choose to perform any behavior that is likely to bring about the desired results. TRA model shows that the behavior is determined by the intention to implement that behavior. The relationship between intent and behavior has been introduced and tested empirically in many studies in many fields (Ajzen, 1988; Ajzen và Fishbein, 1980; Conner và Armitage, 1998). The two main factors that influence the intention are personal attitude and subjective standards, in which an individual's attitude is measured by belief and appreciation for that behavior. Ajzen (1991) defines Subjective Norms as the perception of influencers who will think that the individual

should perform or not perform behavior. Reasonable action tells us the behavior of People can predict through the intention to implement behavior and the intention to carry out behavior depends on two factors, attitude and subjective standards. In it, (i) The attitude is understood as the likes or dislikes that we want to do and the perception is whether or not we are going to bring benefits or disadvantages to us; (ii) The subjective standard is to identify the influential people around the family, friends, teachers, etc, think that we should be that or not. This leads to the intention to take action when we feel that the opinions we have about what we are about to do are reasonable or unreasonable.

Planned behavioral theory (Ajzen, 1991) is the development and improvement of rational action theory (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). As mentioned above, TRA considers that behaviors can be performed (or not done) completely under the control of reason. This limits the application of TRA theory to the study of certain behaviors (Buchan, 2005). To overcome this point, TPB was born (Ajzen, 1985; 1991). Planned behavioral theory suggests that consumer intentions are influenced by three factors: attitudes towards behavior, subjective norms, and behavioral control perceptions (PBC - Perceived Behavior Control). The difference between the two models TPB and TRA is in the TPB model that adds the influence of the PBC factor to the behavioral intention. In addition, the TPB model also demonstrates the impact of the "trust in favor" factor on the "perception of behavior control".

Currently, there are many research works of some authors that mention labor export activities in Vietnam in general as well as Phu Tho province in particular such as Phan The Cong (2011), "*Vietnam's model of export-based economic growth*"; Nguyen Kim Anh et al. (2017). "*Remittance policy for socio-economic development of Vietnam*"; Nguyen Thi Lan Huong (2016). "*Laborers returning to work overseas for a definite period of time*"; Bui Thi Hong Minh, Nguyen Ngoc Minh Tuan (2018). "*Labor export contributes to labor restructuring in Phu Tho province*". The above studies have generalized the theory of labor export activities and the status of labor export and state management of labor export, and provide some solutions to improve and renovate the organizational system and management mechanism of labor export activities of Vietnam. As far as our understanding, there have been no studies on the factors affecting the decision on labor export of rural workers in Phu Tho province. From the review of previous studies, the authors proposed the model and research hypotheses as follows:



Theories:

Hypothesis H1: The expected market has a positive impact on the decision to export labor of rural workers in Phu Tho province

Hypothesis H2: The expected income has a positive impact on the decision to export labor of rural workers in Phu Tho province.

Hypothesis H3: Employment opportunities positively affect the decision to export labor of rural workers in Phu Tho province.

Hypothesis H4: Orientation from family and friends has a positive impact on the decision to export labor of rural workers in Phu Tho province.

Hypothesis H5: Personal factors positively affect the decision to export labor of rural workers in Phu Tho province.

Hypothesis H6: Cost factor has a positive impact on the decision to export labor of rural workers in Phu Tho province.

## ***2.2. Labor export activities in Vietnam and Phu Tho province in the period of 2010 - 2018***

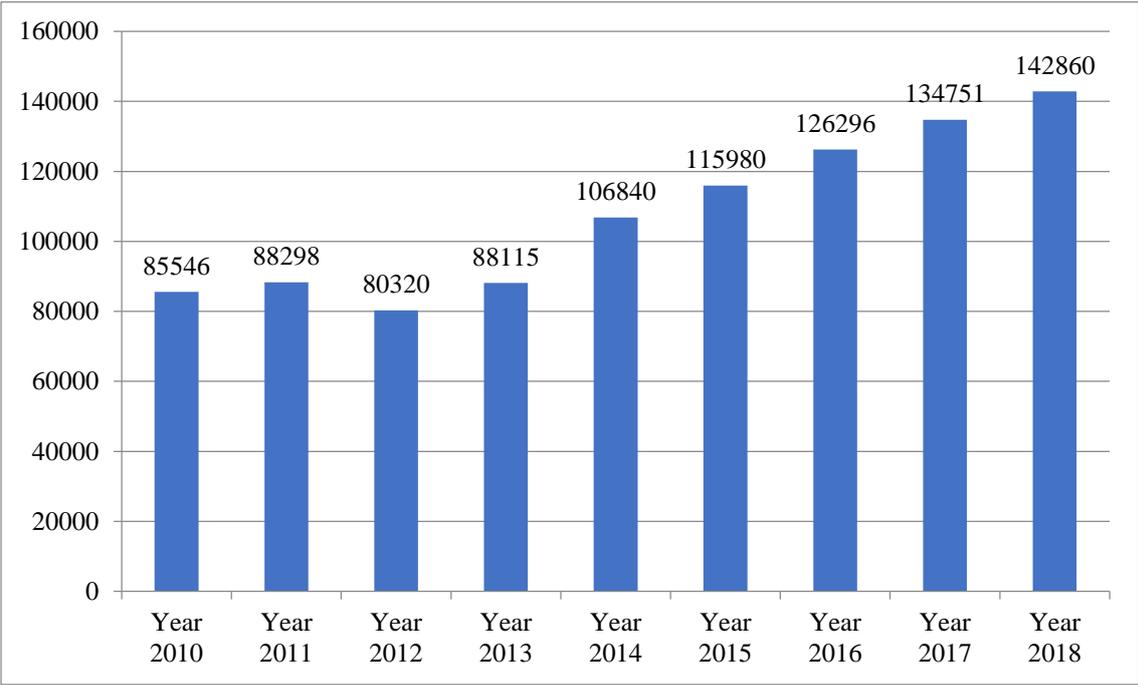
### ***2.2.1. Export activities in Vietnam***

#### ***Laborer export quantity***

In the past year, many enterprises operating services to send workers abroad to work under contracts have been step by step actively seeking and developing overseas labor markets, Investing in creating and training labor skills and foreign languages before leaving the country. Therefore, the number of Vietnamese workers

in international markets has continuously increased over the years. Vietnam has a number of foreign workers exceeding 100,000 employees per year during the last five years. According to statistics of the Department of Overseas Labor, in 2018, the total number of Vietnamese workers working abroad was 142,860 (of which 50,292 female workers), exceeding 30% as planned in 2018, an increase of 6% compared to 2017 (In 2017, the total number of Vietnamese workers to work abroad is 134,751 workers) (Chart 1 ).

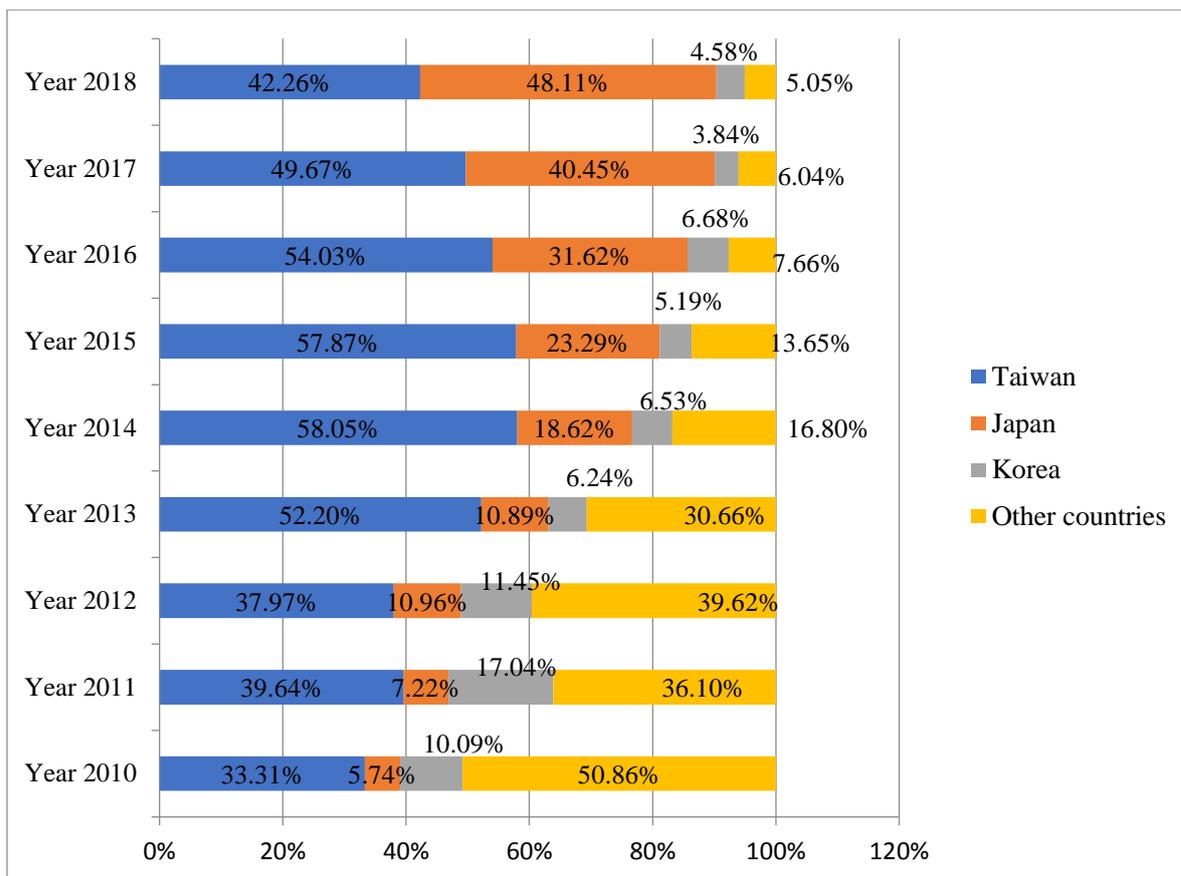
*Unit: People*



**Chart 1. The size of Vietnamese workers to work abroad in 2010 - 2018**

*(Source: Department of Management of Foreign Labor, Ministry of Labor, Invalids and Social Affairs, 2018)*

According to statistics of the Department of Overseas Labor Management (Ministry of Labor - Invalids and Social Affairs), up to now, the labor export market in Vietnam has continuously increased in quantity. In 142,860 employees going to labor export in 2018, the Japanese market has 68,737 employees (27,610 female workers), Taiwan: 60,369 workers (19,273 female workers), South Korea: 6,538 employees (736 female workers) and other markets. Based on the statistics, it is found that Japanese labor export dominates to become a career choice of many workers. With the advantage of salary and attractive remuneration, in 2018 Japan continued to maintain as the largest market, while the number of Vietnamese employees registered to Japan also increased significantly (Chart 2).



**Chart 2. Vietnamese labor structure to work abroad from 2010 to 2018**

*Source: Department of Management of Foreign Labor, Ministry of Labor, Invalids and Social Affairs, 2018*

An estimated 500,000 Vietnamese workers are working in 40 different countries, bringing in remittances from 1.7 to 2 billion dollars annually. Regarding the labor market structure, the markets receiving many Vietnamese and stable laborers are Taiwan, Japan and Korea. Other markets still have a strong need for stable reception, the Japanese market needs to recruit more and more Vietnamese workers.

### ***Overseas remittances from Vietnamese labor force for export***

Overseas remittances from the Vietnamese labor force tend to increase over the years, contributing a large proportion to the total remittances. According to the survey results conducted by the Institute of Labor and Social Sciences, the remittance channels that workers use to transfer money to the country are quite diverse, including money transfer through credit institutions, through labor export enterprises, private and other forms, in which the method of transferring money through credit institutions is the most common. With the convenience of money transfer channels, it is estimated that the total remittance amount of all

employees in recent years has averaged about 2.5 billion USD. Thus, the income of overseas workers significantly contributes to the annual remittance to the country (Table 1).

**Table 1. Remittance to Vietnam via official channels, 2001-2017**

*Unit: USD billion*

<b>Year</b>	<b>Remittances</b>	<b>Year</b>	<b>Remittances</b>
2001	1.82	2011	8.9
2003	2.6	2012	10
2005	3.8	2013	11
2007	5.5	2014	12.5
2009	6.283	2015	13.2
2010	8	2016	9
		2017	3.6

*Source: World Bank, 2017*

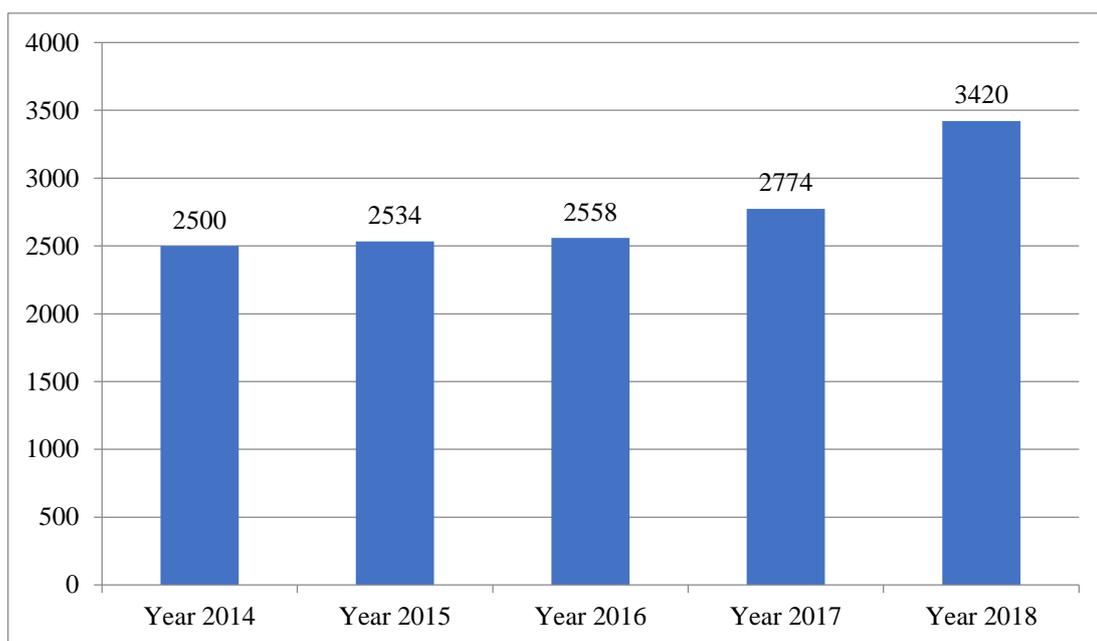
It can be seen that, through the scale, the increasing and stable growth rate of remittances to this country, this amount of foreign currency has contributed significantly to reducing the imbalance in the balance of payments, improving reserves foreign exchange, reducing exchange rate pressure. At the same time, it positively and directly impacts domestic households to improve their lives, build houses and invest in production and business. However, the amount of remittances declined in 2016-2017 due to the fact that not only is the interest rate for USD deposits in Vietnam too low, but also because of economic recession, leading to business and production markets in Viet Nam had low profitability.

### *2.2.2. Labor export activities in Phu Tho province*

Phu Tho is one of the provinces with the largest number of workers working overseas. Thanks to labor export activities, the economic and life aspect of the people of Phu Tho province has changed markedly. On average each year, Phu Tho province has about 2,500 laborers going to work abroad, particularly in 2018, the number of people going to labor export was 3,420. Remittances of workers sent about 1,000 billion VND<sup>1</sup> each year. From that money, many families have invested in agricultural production, created jobs on the spot, emerged from poverty and contributed to the socio-economic development of Phu Tho province (Chart 3).

<sup>1</sup> 23,000VND = 1US Dollar

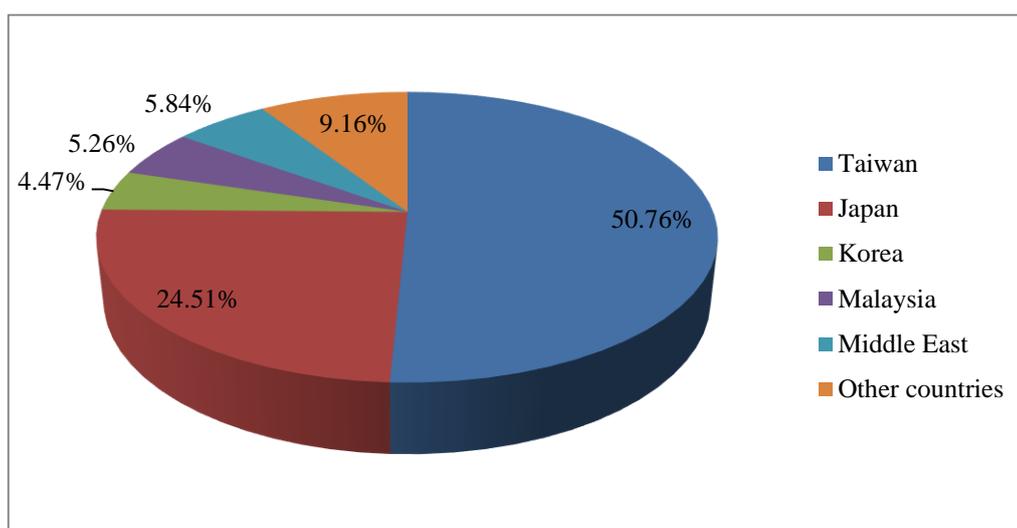
Unit: People



**Chart 3. Labor scale of Phu Tho province to work abroad in 2014 - 2018**

(Source: Department of Labor, Invalids and Social Affairs of Phu Tho province, 2018)

The province had more than 3,000 people participating in foreign export labor market, most of them in Taiwan accounted for over 50% of the whole market, then to Japan (accounting for 24.51%) and other countries like Korea, Malaysia, Eastern Europe market. Since 2006, labor export enterprises in the province have started to open new markets such as Northern Europe, Brunei, Middle East, United Arab Emirates, Qatar, opening up many opportunities and more reasonable choice for workers (Chart 4).



**Chart 4. Labor structure of Phu Tho province to work abroad in 2017**

Source: Department of Labor, Invalids and Social Affairs of Phu Tho province, 2017

It is said that labor export is an important task in order to contribute positively to the work of hunger elimination and poverty alleviation, to raise incomes for the people. Therefore the provincial People's Committee has directed the branches and localities to continue maintaining diversifying the form of labor export focusing on quality, improving efficiency and effectiveness of state management in order to develop labor export in a sustainable way, bringing many economic and social effects. Therefore, the city/districts with a high number of labor export workers such as Viet Tri city, Lam Thao district, Thanh Ba district, Cam Khe district have changed significantly regarding to labor export activities.

To improve the effectiveness of labor export in a sustainable manner, the Department of Labor, War Invalids and Social Affairs had advised the province leaders to develop a vocational training plan to serve labor export. It focus on the selection of labor operation points between labor export enterprises and vocational training schools in the province to increase the rate of skilled export workers, gradually reducing the export of unskilled workers. Up to now, the percentage of skilled workers who go to work abroad account for 50% (mainly mechanical, welding, mechanic scaffolding, tiling, garment, nursing, medical care, household helpers). In particular, about 5% of employees were in college and university graduates who also participated in labor export, focusing on construction engineering, mechanical engineering, machine manufacturing, computer science and nursing staff with college level or higher. According to statistics, the province now has nearly 8,000 people working abroad for a definite time, annually the amount of workers sent to nearly 500 billion VND.

### **3. Research methodology**

This study was conducted in two main steps: preliminary research and formal research. In particular, preliminary research was conducted through qualitative research methods with research on domestic and international documents and in-depth interviews with 10 students who are studying Japanese in Hung Vuong university to go to labor export to adjust the preliminary scale accordingly and the interview time is 30-45 minutes in depth. The results of in-depth interviews show that the research model and the above hypotheses are appropriate, the scales are adjusted accordingly. The secondary data was collected during the period 2000 – 2018, mainly in Phu Tho province.

Formal research was done by quantitative research methods. The study used the method of exploratory factor analysis and linear regression model to analyze the factors affecting the decision to export labor of rural workers in Phu Tho province.

In order to test the research hypothesis, the author used questionnaires through survey questionnaires. There are 26 observed variables in this topic, so the minimum number of samples needed is  $26 \times 5 = 130$  samples.

To get research information, the group surveyed 150 students who are studying Japanese to go to labor export market at Hung Vuong University. The study uses convenient method of sampling by geographical area to collect primary data. Methods of data collection by distributing the survey sheets to each participant by "tick" the questions. The results of the survey used for the study were 142 valid votes, the rest were unsatisfactory due to the lack of information.

The data was analyzed by SPSS16 software. The data set is used to perform statistics to describe the use of quantities such as average, variance, standard deviation, etc, combined with tools such as frequency tables, graphs used for tissue describe characteristics of interviewees such as gender, education level, work experience; Evaluate the scale value by EFA analysis: EFA concurrent analysis for all measurement criteria with angle rotation Varimax with eigenvalue criteria  $> 1.0$  and KMO index  $> 0.5$  to find out the factors representing variables; Evaluate the reliability of the scales: evaluate through Cronbach's Alpha for each of the observed variable groups of different factors to remove garbage. The reliability of Cronbach's Alpha must be between 0.6 and 1.0, the correlation coefficient of the right variable  $> 0.3$  to ensure the variables in the same group of factors are correlated in meaning.

Five-point Likert scale was applied to measure variables affecting some basic competitiveness indexes (1 = Strongly disagree, 5 = Strongly agree). Besides, the authors also used secondary data from Phu Tho Statistical Yearbook to get an overview of the current situation on labor export.

The model reflects the factors affecting the decision to export labor of rural workers (Y- dependent variable) in Phu Tho province is supposed to be the linear regression equation as follows:

$$Y = \beta_0 + \beta_1 TT + \beta_2 TN + \beta_3 VL + \beta_4 DH + \beta_5 CN + \beta_6 CP + u_i;$$

Thus, combined with qualitative research results and inherited results of the studies analyzed by the author. Since then, the author has synthesized the influencing factors after qualitative research with the results shown in Table 2.

**Table 2: Interpretation of variables in the model**

	<b>Coding</b>	<b>Observed variables</b>
<b>The market expected</b>	TT1	The country has a dynamic, democratic and scientific working environment fully equipped
	TT2	The country has good infrastructure (roads, schools, hospitals, etc)
	TT3	The country has clear information and procedures
	TT4	The country has many opportunities to reach a high educational level
	TT5	The country has good shopping and entertainment conditions
	TT6	The country has many opportunities to access advanced and modern science and technology (with association and investment with foreign enterprises)
<b>The expected income</b>	TN1	Your income in that country deserves the ability to work
	TN2	Your income in that country is just enough to live and save
	TN3	Your income in that country is much higher than income in Vietnam
<b>Job opportunities</b>	VL1	The country you are pursuing has favorable conditions to improve your skills
	VL2	The country you are pursuing is easy to get promoted in future work.
	VL3	The country you are pursuing has many conditions for employees to work overtime
	VL4	Your country is pursuing a high demand for unskilled workers in other countries
<b>Orientation from family and friends</b>	DH1	Your family, relatives, friends have been working in that country
	DH2	Your family, relatives, friends have a wide and familiar relationship with the citizens of that country
	DH3	Your family, relatives and friends have financial support (give or lend to help you get to that country)
	DH4	My family, relatives, friends you have available business establishments in that country

	<b>Coding</b>	<b>Observed variables</b>
<b>Personal factors</b>	CN1	You love people, living environment in that country
	CN2	You love that country from a young age
	CN3	You see that country is being chosen by many Vietnamese people for export
<b>Cost factor</b>	CP1	You see that labor export in that country has a cost that is consistent with the level of payment from the family
	CP2	You see that labor export in that country has the lowest cost
	CP3	You see that labor export in that country has an appropriate cost of living
<b>Decided to take the labor export</b>	Y1	Workers will earn a high savings after returning to their homeland
	Y2	Workers will have professional skills and opportunities to work with wages at foreign companies after returning home
	Y3	Workers will be able to use foreign languages fluently

*(Source: Authors' illustration)*

### **3. Research results**

#### **3.1. Characteristics of survey samples**

The data used in the study were collected from 142 questionnaires that were included in the analysis, including: 84 female students (59.15%) and 58 male students (40.85%). Regarding labor qualification: There are 96 workers with high school level (67.61%), 31 workers have elementary, intermediate level (accounting for 21.83%) and 15 qualified workers colleges and universities (accounting for 10.56%).

Regarding the economic situation: there are 15 workers belonging to poor households (accounting for 10.56%), there are 39 workers belonging to near poor households (accounting for 27.46%), there are 67 workers belonging to medium income households (accounting for 47.18%), there are 16 laborers belonging to households with good incomes (accounting for 11.27%) and there are only 5 laborers belonging to rich households (accounting for 3.52%).

Analysis of descriptive statistics shows that the average score in the decision to export labor due to expected income and employment opportunities is highest with 4.28/5 and 4.12/5 points. The rating of cost factor is the lowest of the factors with 2.42/5 points. Therefore, it can be seen that the problem of rural

workers in Phu Tho province decided to choose the Japanese market to go to labor export because this market having larger income opportunity to work overtime to increase income (Table 3).

**Table 3: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
TN	142	3	5	4.28	.533
VL	142	3	5	4.12	.574
CP	142	1	4	2.42	.713
MT	142	2	5	3.51	.608
ĐH	142	1	5	3.20	1.052
CN	142	2	5	3.60	.663
Y	142	3	5	4.16	.657
Valid N (listwise)	142				

*(Source: Summary results and research of authors)*

*3.1.1. Evaluate the reliability of data*

The results of the reliability test using the Cronbach’Alpha coefficient show that all 6 independent variables and the dependent variable (Y) are greater than 0.6. However, the correlation coefficients of the corrected total variable (Corrected Item-Total Correlation) of variables TT3, TT6, DH2, DH4, CN2 <0.30 should be unsatisfactory so we should exclude these variables.

After eliminating variables TT3, TT6, DH2, DH4, CN2, the research team conducted a second test of the two scales, at which time the Cronbach Alpha coefficients are greater than 0.6 and the correlation coefficients of the observed variables equally > 0.30. Thus, this scale after eliminating the above variables has increased the reliability required and satisfactory (Table 4).

The exploratory factor analysis (EFA) was conducted to determine the factors affecting the decision to migrate labor of rural workers in Phu Tho province. The results of exploratory factor analysis of 6 independent variable scales show that the coefficient KMO = 0.657 and the scale of dependent variable (Y) with KMO coefficient = 0.669 are in the range of 0.5 <KMO <1, factor analysis The factor is appropriate. Testing Bartlett’s with Sig. = 0,000 represents a high level of significance (Appendix 3).

**Table 4. Results of assessing the reliability of the scales**

<b>Observed variables</b>	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item-Total Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
<b>(1) The market expected: Cronbach's Alpha coefficient = 0,67</b>				
TT1	15.13	5.892	.323	.654
TT2	14.99	4.670	.701	.508
TT3	15.86	6.779	.101	.719
TT4	14.95	5.025	.595	.554
TT5	15.11	4.997	.570	.561
TT6	16.74	6.673	.150	.702
<b>(2) The expected income: Cronbach's Alpha coefficient = 0,704</b>				
TN1	8.55	1.148	.679	.604
TN2	8.53	1.591	.339	.616
TN3	8.59	1.180	.575	.642
<b>(3) Job opportunities: Cronbach's Alpha coefficient = 0,938</b>				
VL1	12.36	3.004	.938	.894
VL2	12.44	3.166	.815	.931
VL3	12.32	2.898	.813	.936
VL4	12.35	3.057	.862	.916
<b>(4) Orientation from family and friends: Cronbach's Alpha coefficient = 0,684</b>				
DH1	7.25	2.480	.725	.633
DH2	8.16	4.780	.241	.665
DH3	7.27	2.402	.403	.647
DH4	8.71	5.786	.226	.604
<b>(5) Personal factors: Cronbach's Alpha coefficient = 0,699</b>				
CN1	6.23	1.095	.527	.623
CN2	7.20	1.758	.164	.665
CN3	6.15	1.178	.492	.647
<b>(6) Cost factor: Cronbach's Alpha coefficient = 0,916</b>				

Observed variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CP1	4.84	2.065	.911	.815
CP2	4.85	2.180	.795	.908
CP3	4.80	2.106	.792	.913
<b>Decided to take the labor export: Cronbach's Alpha coefficient = 0,932</b>				
Y	8.32	1.632	.936	.837
Y	8.31	1.940	.818	.924
Y	8.34	1.785	.832	.923

*(Source: Summary results and research of authors)*

### 5.1.3. Evaluate the relationship between the factors affecting the dependent variable

According to the analyzed data, the multiple regression results have a value of 0.68 (satisfying  $0 \leq R^2 \leq 1$ ), indicating that the relationship between the variables in the model is quite strict ( $R^2 > 0.5$ ). This says 68% of the volatility of the decision to export labor is explained by six factors included in the model. The adjusted value of 0.64 indicates the variability of the factors affecting the decision to export labor of rural workers in Phu Tho province (Y) is explained by 64% by the impact of the independent variables in the model, the remaining 36% is explained by the variables outside the model. According to the analysis results we see  $F = 23.66$ , the level  $\text{Sig.} = 0,000 < 0.05$ . From there, we can conclude the linear regression model built in accordance with the overall. In other words, the independent variables are linearly related to the dependent variable and the 95% confidence level.

**Table 5. Estimated parameters of the model**

Model		Unstandardized Coefficients		T	Sig.
		B	Std.Error		
1	(Constant)	0.986	0.487	2.024	0.027
	TT	0.161	0.052	3.096	0.022
	TN	0.501	0.209	2.397	0.047
	VL	0.424	0.121	3.504	0.064
	ĐH	0.236	0.084	2.809	0.037
	CN	0.088	0.077	1.142	0.056
	CP	-0.250	0.130	-1.923	0.000

(Source: Summary results and research of authors)

According to the regression results, we find that the content of regression analysis with reliability is 95%, corresponding to independent variables with Sig. <0.05 and positive beta normalization coefficient has 6 variables with Sig. > 0.05. Thus, six independent variables are significantly correlated with the dependent variable. However, there are CP variables that negatively affect the regression equation. The regression equation has the following form:

$$Y = 0,986 + 0,161 TT + 0,501 TN + 0,424 VL + 0,236 ĐH + 0,088 CN - 0,250 CP$$

From the results, it is shown that in the decision of going to export labor of rural workers in Phu Tho province (Y), it is positively influenced by 5 factors, including the market expected; the expected income; job opportunities; orientation from family and friends; personal factor. On the contrary, the cost factor influences the decision to export labor. In particular, The expected income; employment opportunities are two factors that have the strongest impact on the decision to export labor of rural workers in Phu Tho province.

#### 4. Conclusions and recommendations

##### 4.1. Conclusions

From the findings, the decision to export labor of rural workers in Phu Tho province (Y) is influenced by 6 factors that are the market expected; the expected income; job opportunities; orientation from family and friends; personal factors; cost factor.

The expected income; Job opportunities are two factors that have the strongest impact on the decision to export labor of rural workers in Phu Tho province. In fact, the majority of workers who want to export come from low-income families, so they want to go to high-income markets like Japan. With a minimum travel time of 3 years, real income depends on time but averagely from 16-22 million VND / month, when

returning to the country they have about 500 - 800 million VND (salary after deducting expenses for life in Japan). So compared to working in Vietnam, the money to get out of the laborers to Japan is pretty much higher. With such a simple view, we find that going to work in Japan will naturally have more money than going to work in the country.

The market expected; Orientation from family and friends and personal factors are 3 factors that have low impact on the decision to export labor of rural workers in Phu Tho province. Therefore, labor export enterprises need to look for high-income markets and the creation and enhancement of the image of labor export enterprises in Phu Tho will affect the group's awareness well. This factor to relatives, friends, and workers themselves thereby contributing to the attraction of this target group.

Cost factors have a negative impact on the decision to export labor of rural workers in Phu Tho province. Cost is one of the issues that many people are interested in when learning about the labor export program in general and Japan in particular. The lower the cost of businesses, the more workers will be attracted to the labor export program. In contrast, export costs higher for rural workers of low incomes will choose to market have lower export costs. Therefore, labor export enterprises in Phu Tho should have competitive measures to reduce non-export costs to attract workers.

## ***4.2. Recommendations***

### ***4.2.1. On the side of Phu Tho province***

*Firstly*, continuing to study and consider signing agreements and agreements on labor cooperation with traditional markets to bring more and more workers in Phu Tho to work abroad; promoting promotion and understanding of new markets, many potentials to expand agreement on these markets.

*Secondly*, strengthening the inspection, examination, rectification and strict handling of service enterprises that violate the provisions of law and enterprises operating ineffectively, especially inspection and examination work needs focusing on the organization of the operational apparatus of the enterprise, the selection and fostering of necessary knowledge and especially the collection of fees. In addition, strengthening coordination between relevant departments, localities to detect and strictly handle violations in order to prevent workers from being held by organizations and individuals do not have the function of sending workers abroad to work.

### ***4.2. On the side of the business***

*Firstly*, Vietnamese enterprises in general and Phu Tho province in particular need to select contracts with Japanese enterprises with high contractual wages and much overtime. This is a matter of concern for workers but most workers misunderstand the wage of signing labor contracts from Japan. The salary of the employee is the basic salary, so in all industries, there is no big difference, the difference is mainly due to the work area, the risky and heavy nature of the job. The actual salary of employees is much lower than the basic salary due to being deducted a part of insurance, housing, living, etc. However, if more work is done, the income of workers will change greatly.

*Secondly*, the export costs that workers have to spend in many companies are different, there is also a big difference. The issue of employees should be concerned about not the initial cost but the final cost that employees must spend. Many export companies quote very low exit costs, but when employees register, a lot of incurred that they have to pay extra, especially when the successful candidate realizes that the cost is completely not the same as at the beginning. Therefore, businesses need to clearly stipulate the fees to be paid at the lowest level to attract workers to export.

*Thirdly*, labor export enterprises need to build their own reputable brand in labor export activities to impact on groups of family, friends and workers themselves. At the same time, the creation and enhancement of the image of enterprises with the above-mentioned groups will help both businesses and workers to benefit in labor export activities and contribute to the socio-economic development of country.

## **5. Limitations**

*Firstly*, the topic of selecting small sample size of 150 labors and research sample is only focused on rural workers in Phu Tho province. Although, this is the most labor export component in the province with a variety of components such as gender, age, education level etc, but it is difficult to have a basis to confirm the conclusions and assessments about their decision to export labor representing employees in Phu Tho province.

*Secondly*, how to collect non-probability samples with convenient sampling methods can be difficult to represent highly in all areas when interviewing subjects who have decision to export labor (though controlled by regional attributes countryside). In addition, research is limited to only survey students who are studying to export to Japan at Hung Vuong University.

*Thirdly*, actually many other factors of individuals and environment expected having impact on the decision to labor export of rural workers in Phu Tho province but we have not been mentioned in this study yet.

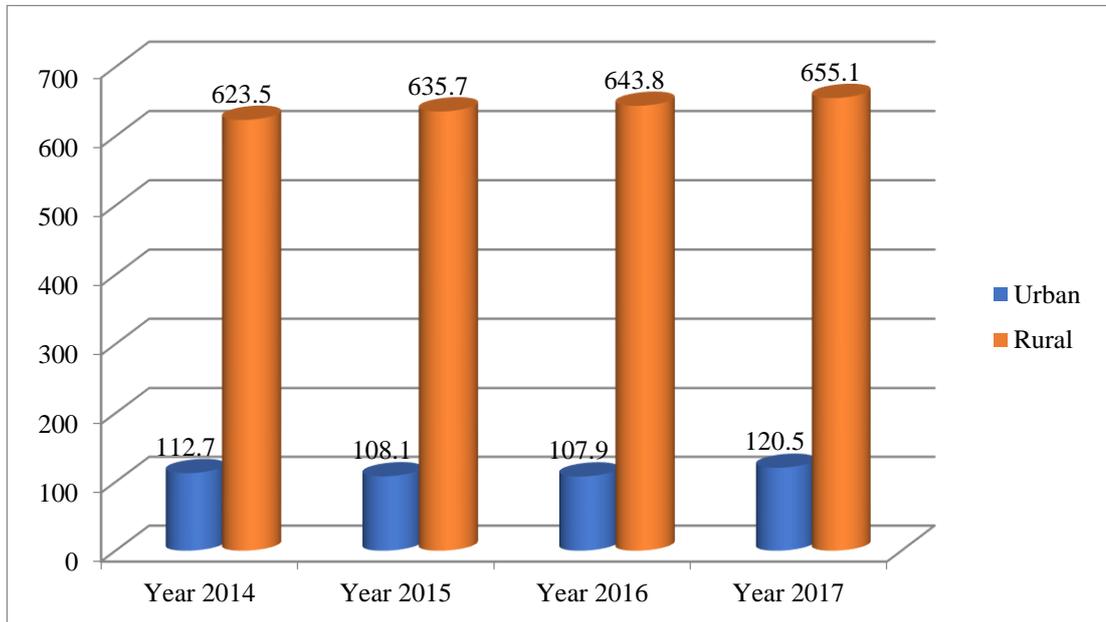
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  - Census: [www.danso.org](http://www.danso.org)
  - Phu Tho province's statistical yearbook: [www.thongkephutho.vn](http://www.thongkephutho.vn)

## APPENDIX

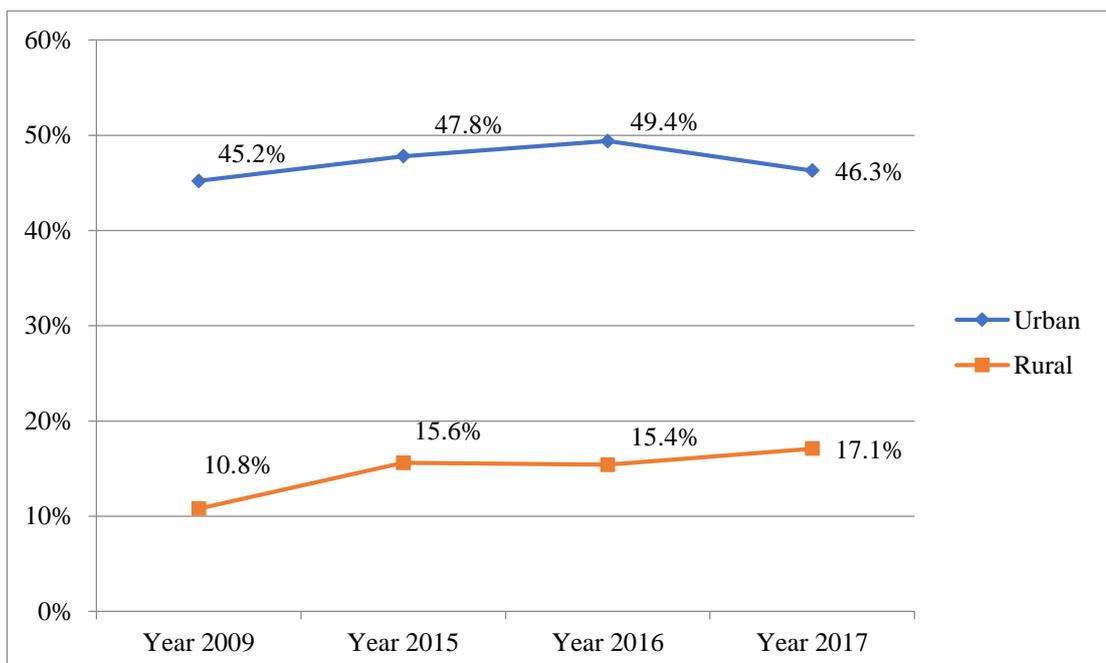
### Appendix 1. The scale of the population are of working age in Phu Tho province

Unit: Thousand people



(Source: Phu Tho Statistical Yearbook 2017)

### Appendix 2. Proportion of population in working age who has been trained in Phu Tho province



(Source: Phu Tho Statistical Yearbook 2017)

### Appendix 3. Pattern Matrix

	Factor						
	1	2	3	4	5	6	7
VL1	.956						
VL4	.923						
VL2	.888						
VL3	.887						
Y		.956					
Y		.917					
Y		.911					
CP1			.952				
CP3			.903				
CP2			.893				
MT2				.874			
MT4				.832			
MT5				.785			
MT1				.620			
CN3					.943		
CN1					.941		
DH3						.949	
DH1						.944	
TN1							.900
TN3							.865
TN2							.560

*(Source: Summary results and research of authors)*

# FOREST CONSERVATION IN THE CONCEPT OF BUDDHISM

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## **Abstract**

*This article needs to present forest conservation in view of Buddhism. On study to show about concept of Buddhist doctrines are important for conservation forest restoration and preservation of forest resources have abundance because forests are important of natural resource and are connected to other resources in the world such as water, soil, air, wildlife and human. So, Buddhist doctrines can be used as guidelines or it is a good way to forest conservation. Whether it is the doctrine of living without encroaching on natural resources and livelihood have to interdependent on each other with natural*

**Keywords:** *conservation, forest, Buddhism*

## **1. Introduction**

Forestry is an important resource of the world and along with the creation of human civilization. Human live and create civilization at the forest in prehistory because forest origin four factors such as it is a food source, clothes, accommodation, and medicine. One of the importance forests gives air to life in the world. Therefore, it is important and should to protect as a resource to live as long as existence in the world. If the forest is destroyed, it will affect other systems for the example, animal, soil, water or river, air etc because when forest decadent, soil degradation and river decay, it will affect to economic and social system )Phrakrupipithjarudhamma. 2015: 32(.

There is Buddhist principles on forest in 13<sup>th</sup> of Dhutanga—in Senasanapatisanyut )connected with the resting place( or the topic on forest-dwelling, namely, Buddhism give precedence to forest. In this article, researcher needs to study how the principle that support to aware of all people for conservation and practices for the forest.

## **2. Conception of forest in Buddhism**

There are words which was means tree forest and plant in Buddhism, namely, rukha vana and bhutakama, which was born from seed, tree, and word that peecha and kama which also means that Green )Phrakrupipithjarudhamma. 2015: 32(. The all word used a difference mean but the conclusion is plant, rice and forest that support animal in the earth. Researcher attempt to study concept in Buddhism for understanding by topic following that

### 1) Concept at Vinayapitaka

Vinayapitaka is orders and rule—winai or sila of monk bhikku and bhikkuni )Suchip Punyanubhap.1996:1(. This Vinaya occurred at 7<sup>th</sup> of Sanghatisesa—don't build big church where Sangha was not determine. There is narrative that the man whom serve Channa monk was him show place for building. The monk was him modify place, cut a holy tree of people and bring sadness. The people blame him. The Buddha knows, blame and decree that monks will make a large place with their own owners; he should bring Sangha to show place where there are no owners. If the monks make a large church where are reserved or do not bring all monks to show area that the monk must be wrong )Sanghatisesa( )Suchip Punyanubhap.1996:150( The interpretation that original cause of the two commandments are from to Construct a building that was not told to the monks and Conquering the area and cutting trees that the villagers respect as sacred.

On the other hand, there is a narrative in one of Pachittiyakana—Bhutakamavagga )to do not cut the tree( following that: the monks of the town of Arawee made the construction and cut the trees themselves, used to cut others People blamed that the tree has living. The Buddha decide a discripline for the monk whom cut the tree (there are 5 trees that have heads as plants, such as ginger; With plant stems such as Bodhi tree, there are segments such as cane, bamboo, there are shoots of plants such as coriander surrounded There are seeds like plants such as rice, beans. )Suchip Punyanubhap.1996:150(

In addition, there are text which interpreted that the forest have useful for Sangha according to Bhesajja Khandhaka that i allow rhizome Drugs or that are astringent from the tree Medicinal leaves Medicinal fruit Rubber But must have a reasonable cause etc and forest also provides water that is a product of the forest, as shown in the story that the Lord Buddha allowed 8 kinds of water, namely, 1) Mango juice 2) Chompu water or Wa water 3) Banana juice with seeds 4) Seedless banana juice 5) water of MaTrang 6) grape juice 7) Ubon rhizome water 8) water of Maprang or Lychee. And i allowed water from all kinds of fruit unless the type of rice. The Buddha allowed water from all kinds of leaves except the taste of boiled vegetables; he allowed water from all kinds of flowers and allow allowed the water from the sugarcane. )Suchip Punyanubhap.1996: 238, 242(

From ongoing it's interpreted that origin discipline occur Buddhists wishing to prohibit the destruction of all plants because how does forest and plant benefit humans?

### 3. Concept in Sutra

The forest is directly related to the Buddha, he was born in Lumpini, enlightenment under the Bodhi tree, teach in the forest of Isipattna and die under the Sala tree in the Salawan Park. Therefore, in the Suttantapitaka, it appears that the

message is related to the forest in general because the forest is the way of life of human beings. This is not something that has to endure. The text that appears in the Suttantapitaka has Wanaphat Sutra.

#### **4. Concept in other source**

In addition to the concepts that appear in the above two former sources. There are some concept in Visuddhimagga—tho topic of Dhutanga which P.A Payutto )2000: 307-309( explained that Dhutanga. It means that practice of the type of observance that a person will voluntarily behave for as a plot to refine the passion, helps to promote moderation and solitude and it is not a disciplinary provision. There is a general principle to assume If Dhutanga helps the meditation exuberance he ought to hold but if to hold Dhutanga or not they do not make the meditation grow or deteriorate.

Dhutanga which is related the forest is number 8 9 10 and 11, following that:

8. Āranyikanga—forest-dweller’s practice

9. Rukkhamulikanga—tree root dweller’s practice

10. Abbhokasikanga—open air dweller’s practice

11. Sosanikanga—charnel-ground- dweller’s practice )P.A Payutto.2000: 307(

When considering the former statement even though staying in the forest is not a discipline that requires strict stretching. But it is guideline for practitioners for the ultimate religious goal because the forest is a quiet place Suitable for practice and is a way that the monks and professors in Thailand strictly. The researcher interpreted that Because of the delight in the silence in the forest, the monks were pleased to be in the forest and needed to keep the forest to practice in a quiet place. Initially, forest conservation.

#### **5. The Apply forest’s conservation of forest monks.**

However there is no message about forest’s conservation directly in Buddhism but the result that the interpretation of Phrakrupipithjarudhamma )2015: 32( in the topic “Model of forest conservation according to Theravada Buddhism: A case study Hugmaengnan Foundation” which he interpreted Forest conservation in the view of Buddhism can be applied based on understanding of natural laws. That is to understand forest conservation through the relationship between definition 5 and he concludes that humans and nature have a causal relationship with each other that will cause changes in themselves and result in changes in other things. It is necessary that humans, plants, animals must rely on each other, and various doctrines of religion have inserted natural matters.

Also, Phrakrupipithjarudhamma (2015: 37-38( present the guideline for forest conservation according to the principle of Buddhism is the conservation of the 5 precepts. Application for forest conservation

(1) To refrain from hunting means hunting all kinds of animals for hunting or sacrificing and including not destroying plants. Every animal of the world, whether

human or animal, will love their life. With the intention of keeping life as long as possible, seeing his life worthy of preservation. How we feel, love our lives, others or other animals have feelings of love for their lives like that.

(2) To refrain from stealing means that the natural benefits should be given. Should not accelerate or increase productivity by using chemicals until becoming a natural destruction and environmental pollution.

(3) To refrain from sexual misconduct means the person who commits this precept can make life threaten or have many enemies in the same environment. Humans have smuggled trees, killed animals, and counted as a violation of natural rights.

(4) To refrain from lying— be fail but have to speak truly with sincerity. In environmental issue, people should speak to promote natural resource conservation, including using various media to promote environmental conservation.

(5) To refrain from drinking alcohol including drugs. This precept will make the violent person lose consciousness in the application to the environment. People should not drink the water that is a product from various plants or plants, which is the source of natural exploitation, harming nature.

And, finally model of Phrakrupipithjarudhamma (2015: 39( according to Sikkha or the threefold-training:

(1) Adhisila-Sikkha—training in higher morality is a basic practice of Buddhism in order to control physical behavior and speech, not encroaching or causing harm to others. To be self-discipline and honest work, have a social relationship in a supportive manner Create and promote peace and sustainability in solving environmental problems.

(2) Adhicitta-Sikkha—training in higher mentality is a mental training. To have good consciousness and complete with mental quality. That is to have a moral mind compassion for the social environment aware of the value of mental development by using the appropriate natural environment with practice mental practice

(3) Adhipanya-Sikkha—training in higher Wisdom, intellectual training for understanding and cherish natural resources and the environment, to think, to consider and to solve problems with pure wisdom by using intelligence to do useful things and use to solve natural resources and the environment.

The teachings of Buddhism are adapted to be used as guidelines for forest conservation. In the viewpoint of the author, it can be done in many ways, such as ordination ceremony, tree or forest ordination, etc., which uses based on the beliefs that are consistent with the principles. Of Buddhism taught that we should not cut trees because doing so will cause angels to be angry because the tree is the home of the angels. )Peter Harvy. 1995: 55( It relate to belief that tree- angels that has been transmitted through the teachings of various professors Or ceremonies for the trees

on the important religious days or important days of government as well This is because it raises awareness of the importance of forest resources.

From considering all data from the study, it was found that human beings were related to forests both directly and indirectly. Direct relevance is the forest to breathe air and is the source of fundamental factors. Indirect relevance is the forest that produces other things. In the Buddha period, the forest is of religious historical importance because the Buddha was born, enlightenment, the first teaching and nirvana in the forest. So, the forest is an represent of calm and is an important element in achieving high dharma. The forest is also a tradition that Buddhist monks pay attention to Is to hold the forest as a routine and pay attention to the preservation of the forest according to religious practices. In Thailand, forest monk plays an important role in forest preservation. Holding the forest on the forest has a significant effect on forest conservation because when there is no forest monk has no peaceful place to practice religion. Various ways in the treatment of forests was applied. There is a forest ordination to raise awareness about forest conservation. Because the trees that were born in the temple area, the villagers believed that the tree is the place or the presence of the angels therefore human being gives respect and be afraid to cut the wood over the trees that are born outside the temple area.

## **6. Conclusion**

There are on things can exist on its own, yet all things are based on other as a cause of sustaining factors. Humans must pay attention to the environment that will affect their own security and humanity. Therefore, humans must try to adjust themselves to blend in with nature rather than overcoming nature. This effort has appeared in Buddhism, which has resulted in the monks who are willing to live in the forest as inevitable.

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### **Webside**

1. <https://www.youtube.com/watch?v=F218Ou93L2U>

# THE ROLE OF BUDDHISM IN ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT IN VIETNAM TODAY

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## **Abstract**

*Environmental protection and sustainable development are the common development trend of many countries in the world today including Vietnam. The career of protecting the environment towards sustainable development requires the joining of many different forces in society, including religions. As one of the religions tends to incarnate, Buddhism in the past as well as the present always focused on environmental protection and sustainable development. That, not only manifests itself in the way of action but also expresses clearly with philosophical views in the Buddhist teaching system. Vietnamese Buddhism always accompanies and develops with the nation. In today's innovation career, the contribution of Buddhism to environmental protection and sustainable development is one of the important contributions of this religion in the cause of innovation and development in Vietnam today. This article is based on the analysis of the views of Buddhist philosophy on the environment and the development and contributions of Vietnamese Buddhism in history to come to analyze and propose solutions to promote more. and the role of Buddhism in the current environmental protection and sustainable development in Vietnam.*

**Keywords:** *Buddhism, the system of doctrine, invading life, environmental protection, sustainable development*

## **1. Introduction**

In the development process, besides the great achievements, humanity is also facing many risks and challenges, including the risk and challenges of environmental degradation. Therefore, protecting environment effectively and towards sustainable development is one of the most important goals of each country as well as all humanity has been posed and actively looking for solution. Of course, the issue of environmental protection and sustainable development is not until now but the humanity has been set up very early in the history of human thought with many different ways of expression in it there are religions. As one of the religions tends to incarnate, In its teaching system Buddhism is always regarded as one of the leading

religions in proposing ideas about environmental protection and sustainable development. These thoughts are not only found in the teachings of Buddhism, but also in the system of rituals and methods of daily practice of this religion. Studying philosophical ideas about environmental protection and sustainable development in Buddhist philosophy is of great importance not only in theory but also in practice, especially in enhancing the role of Buddhism. in the career of environmental protection and sustainable development in Vietnam today.

## **2. Methods**

There are two groups of methods we use in this article. *Firstly*, a group of general research methods such as analyzing, synthesizing and searching documents were used to analyze and clarify the theoretical bases of environmental protection and sustainable development viewpoint in system of Buddhist philosophical thought. And secondly, group of interdisciplinary approaches such as statistics, comparison and use of sociological survey results (secondary data) to analyze and describe the role of Buddhism in the protection career. environment and sustainable development in Vietnam today.

## **3. Results**

### **Environmental protection and sustainable development**

The environment with the most common meaning includes all factors of infertility and biology, nature and society that have an impact, directly or indirectly affecting human health and life. Human life whether in the early period or even in the modern development period depends very much on the surrounding environment. Currently, humanity is facing many challenges when the environment is degraded or degraded environment. Environmental degradation is a change in the quality and quantity of environmental components, adversely affecting human and natural life, destroying ecosystems and extinction of wildlife. In particular, the environmental component is understood as the elements that make up the environment: air, water, land, sound, light, underground, mountains, forests, rivers, lakes, sea creatures, ecosystems (Johnson, D.L., S.H. Ambrose, T.J. Bassett, M.L. Bowen, D.E. Crummey, J.S. Isaacson, D.N. Johnson, P. Lamb, M. Saul, and A.E. Winter-Nelson, 1997; pp.581–589). Environmental degradation is one of ten official threats that have been warned by The UN: “Decreasing the capacity of the environment to meet social and ecological goals and needs” [The International Strategy for Disaster Reduction, 2004]. These are threats that are not only potential but increasingly existential but many countries have been suffering from negative impacts due to environmental degradation, which is extremely heavy. Therefore, protecting the environment, keeping the environment always clean is always the duty and responsibility of every

resident living on the globe. Environmental protection is a natural environmental protection practice on individual, controlled or government levels, for the benefit of both the environment and people. Current environmental protection principles include:

i) Environmental protection is the responsibility and obligation of all agencies, organizations, households and individuals;

ii) Environmental protection in harmony with economic development, social security, ensuring children's rights, promoting gender and development, biodiversity conservation, responding to climate change to protect ensuring everyone to live in a clean environment;

iii) Environmental protection must be based on the rational use of resources and waste reduction;

iv) National environmental protection associated with regional and global environmental protection; environmental protection to ensure no harm to national sovereignty and security;

v) Environmental protection must be in accordance with the law, natural, cultural and historical characteristics, the level of socio-economic development of the country;

vi) Environmental protection activities must be regularly carried out and prioritized to prevent environmental pollution, incidents and degradation;

vii) Organizations, households and individuals that use environmental components and benefit from the environment are obliged to contribute financially to environmental protection;

viii) Organizations, households and individuals causing environmental pollution, incidents and degradation must overcome, compensate for damage and other responsibilities as prescribed by law.

At the same time, the main contents of the current environmental protection work include:

i) Prevention of degradation, pollution and environmental incidents;

ii) Overcoming degradation, pollution and environmental incidents, and...

iii) Responding to climate change (Law of Environmental Protection; 2014).

The current environmental protection is not purely to affect the surrounding environment (even if this is true, it is difficult to implement) but also actively interacting to create a sustainable environment or *Sustainable Development Process*. Sustainable development is not just a new concept that defines a development in all

aspects of current society, but must ensure continued development in the future. This concept is now the target of many countries in the world. Each country will rely on its own economic, social, political, geographical, cultural ... characteristics to plan the strategy that best suits that country. The concept of *sustainable development* appeared in the world for the first time in the 1970s of the twentieth century. By 1980, in the "World Conservation Strategy" developed by the International Union for Conservation of Nature and Natural Resources (IUCN), the first definition of sustainable development was given. Accordingly, sustainable development is defined as "the development that meets the needs of the present without hurting the ability to meet the needs of future generations", is "the whole approach. face and time processes lead us to the final point of sustainability" (Shaker, R.R., 2015, p.305). This concept mainly emphasizes the aspect of effective use of natural resources and ensuring the living environment for people in the development process.

In principle, sustainable development is the process of simultaneously operating three development areas: sustainable economic growth, prosperous society, fairness, stability, diverse culture and a healthy environment. resources are sustained. Therefore, the system completes the ethical principles for sustainable development, including the principles of sustainable development in both "three-leg": economic, social, environmental.. Currently, the concept of sustainable development on an international level has a common unity and a goal to implement sustainable development into the millennium goal. The content of sustainable development has been unified in three aspects: sustainable economic development, sustainable development of society and environmentally sustainable development (Pham Thi Thanh Binh, 2016).

### **Thought of Buddhist philosophy on environmental protection and sustainable development**

In its teaching system, although Buddhism does not use terms like "environmental protection" or "sustainable development" ... but, philosophical viewpoints about the relationship between people and nature; on the policy of exhorting disciples, disciples and all beings in the world to make a harmonious, natural-friendly lifestyle as one of the endings to perform "liberation" showed Buddha The teacher was interested in issues such as environmental protection and sustainable development very early. This is reflected in the major treatises of Buddhism, such as: *The theory of causation* (Thuyết Duyên khởi), *Equal theory for all things* (thuyết Vạn vật bình đẳng) and *Causal - Repaid Theory* (thuyết Nhân quả - Báo ứng).

*The theory of causation* (pratītyasamutpāda) also called: *The twelve links of Cause and effect* or *Karmic causality* in “The four noble truths” (in the “Four Noble Truths”, four truths of Buddhism), is the basic reasoning system of Buddhism that expresses insight into the universe and humanity. The concept of “theory of causation” comes from the view of the Buddha saying: the world, the universe is a unified whole by overlapping, tightly divided relationships. This is predestined affinity (Pratyaya, duyên) let that exist, everything in this world therefore exists in a diverse and vivid way. If one thing is unfortunately lost, it will lead to the loss or alteration or disturbance of another... Thus, the relationship between people and nature is a symbiotic relationship, with survival and development. If unfortunately one party is depressed then all are affected. The world of all things is diverse and abundant, but all exist in the relationship of mutual support and mutual effects. Their existence is both the cause of each other but also the result of each other. Each thing and phenomenon exists in the world due to certain causes or conditions.

In Samyuktagama sutra (*Samyuktāgama*), volume 10 of Buddhism has illustrated the ideology of causation, said: “If this is, the other is, because of this being, the other being, if this is not there, that one is not there, because of this destruction, the other kills ...” (Thich Minh Chau, 2015). Everything is created by causation. Causation is both the starting point is both the end point of “liberation” (Moksha)... But the most important thing in causation is to express existence in the human-social and natural dependency relationship. From The theory of Causation origination can see individuals, humanity, society can not exist independently, but exists in a relationship closely related to nature. When we hurt nature, it is when we hurt humanity itself. When we sabotage nature is when we undermine the existence of humanity itself. Since then, Buddhism draws the necessary instructions for sentient beings: "How to prevent ecological destruction caused by humans, how to maintain and protect the normal ecological balance, how to improve the correlation conditions, beneficial factors to enhance ecology, is human's most important responsibility, is also the most important responsibility for humanity to protect itself” (Phuong Lập Thiên, 2005).

*Equal theory for all things.* Born in the context of ancient Indian society, a society that is divided into different levels is extremely strict, so Buddhism as well as many religions in India now emphasize the equal relationship between people and society. However, Buddhism has gone further in terms of conception than other religions in that it not only affirms the equal relationship between people and people in society but also the relationship of this equality is open. wide for all things in the world. Buddhism asserts: the existence of all things in this world is in a unified form. In this world, everything that exists has the same equality: not being, not being, not

high, not low. However, due to the different "karmic", each object is transformed into "reincarnation" into different "lifetimes" (a form that exists differently from the previous existence). Life of everything, phenomenon in every "life" (including life in human life) is always temporary, sometimes or like the wind blowing, flying clouds... In the rotation of creation, everything transforms both the cause of each other and the result of each other according to the rules of reincarnation: "Sinh - Trụ - Dị - Diệt" or: "Thành - Trụ - Hoại - Không", so everything in high position or low position becomes necessary for each other's existence. The role and position of each thing, a life in this world thus becomes equal, not high, not low, not good, not mean. Buddha said: "Everyone in those hundred different races can bring bath powder to water and wash it, except to remove the dirty structures so it can be cleaned... all of those hundred different races can use any kind of wood as a fire, then use a puncher to make fire and fire grow" (Kinh Trung A Ham sutra, Pham Chi A Kinh sutra, 1992; p.202). And Namennais<sup>1</sup> wrote: "Creator does not give birth to anyone, who is a coward, who is a teacher, a servant, who is a king, who is I?" Creator creates all equal people" (Kinh Trung A Ham sutra, Pham Chi A Kinh sutra, 1992; p.107) Since then, Buddhism advised sentient beings to practice a compassionate, non-competitive way of life and to harm the surrounding environment, a lifestyle of good and non-killing is also derived from the philosophy of all things equally as assigned above.

*Causal - Repaid Theory.* This is one of the basic theories of Buddhist philosophy of human life. Causal - Repaid Theory derives from one of the contents of the *Four Noble Truths* of Buddhism in-depth analysis of the causal relationship in the cycle of reincarnation of all things. According to Buddhism, all things that form, exist, develop and transform (Samsara) have their causes. The cause is what creates results. But each cause can produce many results depending on certain conditions (It is up to "pratyaya"). The Hetu-pratyaya-Repaid rule is an objective law in the world of things including humans. Also according to Buddhism, the life of every human being from birth to maturity and loss is a "predestined". That predestined is not a coincidence but an inevitable result of the effects of the law of cause and effect (also called karma). each person's karma in life can be "bad karma" (life has many uncertainties, less safety) or "good karma" (life has many advantages and benefits). People create their own "karma" but the effects of karma (or karmic retribution) each person's impact on real life is quite complicated, sometimes directly, sometimes indirectly. For example, this life creates "karma" but it is very possible that "karma" shows results and impacts on the next life. Simply put, "Causal - repaid" is to do good things, you will receive good "retribution", while doing evil, you will receive an evil "retribution". The law of "cause and effect" is the method, the rule and the fixed law

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<sup>1</sup> Priests, philosophers, French political theorists (1782-1854)

of causation, it is fulfilled for anyone who does not mention intimate, rich or poor. Therefore, Buddhism advises living in life to be responsible in every thought, word and action. If each of us does not believe in the law of "cause and effect", then we will live emotionally, irresponsibly, only greedily selfish to hurt others. However, in fact, according to causal Buddhism, good and bad karma will come sooner or later, depending on the condition, but if living in life, each of our words or deeds can be created accidentally or intentionally career. Having "karma" of course will produce "karmic retribution". Let each of us be afraid of bad retribution in this life, stay away from sinful things, do good deeds for human love in life to get good karma in the future. A good person does not harm anyone, a family is perfect in moral character, society will develop stably in a sustainable and long-term way.

From the above basic philosophical treatises, Buddhism sets out basic ethical principles to implement a friendly, sociable lifestyle with the environment, environmental protection and towards sustainable development such as:

*First*, the principle of implementing environmentally friendly lifestyles and upholding ethical and non-killing ethical standards. Must take a hospitable and friendly lifestyle with all species in lieu of selfish, self-pervading lifestyle, as Buddha often teaches: "Buddhists should not either kill themselves, or tell the killers, use the means of killing, praising the killing, seeing killing but depending on the wedding, the ring comes to use the charm to kill, and so on, all the beings have no life, they will not intentionally kill them" (<https://thuvienhoasen.org>, 2010). Or: "Often the mind is murdered, the more the karma grows, the more it spins in the samsara, there is no day to leave" (Lankavatara sutra) (<http://daibaothapmandalataythien.org>, 2016).

Greed is one of "three poisons" (tam độc), it mean: greed, anger and ignorance (tham, sân, si) according to the Buddhist concept. Three poisons harm the spiritual health of people. Once the greed is overwhelmed, leading the way will leave very serious consequences. Buddhism has taught people to live: "thiểu dục tri túc" (want less, know enough). "Thiểu dục tri túc", it teaches people to understand and value what they have. It should not be because of greed, harming all species in nature, breaking the inherent order of nature. It is a way of life, the motto of living completely in line with the present age. It is a way of life full of knowledge, there is no place for self-respect, not for your own benefit but harming the environment, to nature and all species. It is a way of knowing how to use natural resources reasonably, reducing the pressure on the environment, avoiding the waste of using natural resources, or relying on nature. Being aware of this, people will not over-exploit naturally, not pollute the environment, live in harmony with nature, exploit naturally at an appropriate level so that nature has time to regenerate. It is also a way of life responsible for oneself, the

future of future generations so that they can continue to enjoy and exploit nature to serve their lives (Nguyen Thi Trang, 2017).

*Second, arouse Buddha count, stay away from dosa (sân hận).* In order to do so, each person has no other way but to take tolerance with unconditional love between himself and all species as salvation, just like the Buddha used to tell his disciples: “There is no reason to be friendly with this person and hostile to others. Everyone is equal, because everyone wants to enjoy peaceful happiness and no one likes sickness and suffering. Therefore, we must treat people with irrespective of love” (Joanthan Landaw, 2006; p. 167). With Buddhism, all things in the world (not only in humans) have the right to exist equally, regardless of high and low, to be mean. However, due to differences in characteristics, shape as well as content structure and mode of operation, there is inevitable conflict of interests. The peak of the conflict can create conflicts between the parties. Therefore, the best way to resolve conflicts and resolve conflicts is to arouse Buddha nature, stay away from dosa (sân hận), taking reconciliation, giving way to each other instead of bigotry and competition and consider it as one of the basic moral standards of sentient beings on the path to seeking “mokṣa” for themselves and the community. Therefore, the opening of compassion and love of all species, regardless of being high and low, regardless of luxury or humility, must become one of the basic standards of ecological ethics that every sentient being needs to be self-conscious perform, same as the Buddha's teaching in *Karuna sutra*: “...Bring joy to all beings; May they all be at peace; Do not miss any friendship; sick or healthy people; Large or tall varieties; Medium or short body, small, rough; There is a general appearance or no appearance; Be near me or in a remote place; Already born or about to be born; May all be at peace ...” (Nguyen Thi Trang, 2017). Arouse Buddha count, stay away from dosa (sân hận) in each person has thus become one of the important moral principles of Buddhism in the awareness and conduct of the relationship between people and people. with the natural world.

*Third, create good kamma, stay away from bad kamma.* The idea of “creating good kamma, stay away from bad” is one of the popular ecological ethical principles of Buddhism to practice a friendly lifestyle of sentient beings on the path of cessation of suffering. There are many ways to "create good kamma, stay away from bad", but in Buddhism the best way is to do “ten good deeds” (sa. daśakuśalakarmāṇi) and “five precepts” (panca veramani). “Ten good deeds” are 10 good deeds done through actions (body), words (speech) and thoughts (thoughts). There are 3 rules for action (body) including: No killing, no thief and no sexual misconduct; 4 rules for speech (mouth) include: Do not lie, do not speak double country (say two-way), do not speak monotony and do not speak frivolous; 3 rules for thinking (mind) include: no thoughts

of desire (no desire), no anger, sadness and no delusion. Five precepts are the five undocumented commandments of the monks at home, and Buddhists pray to receive these five precepts (Precepts: is a barrier that prevents bad things of body, mouth, thoughts). Five precepts include: No killing, no stealing, no sexual misconduct, no drinking, no ambition (no talking, indiscriminately).

*Fourth, realizing life is anatta, impermanence.* Buddhism believes that once we realize that life is anatta, impermanence, it also helps us to change our purpose, lifestyle and moral standards in life. Instead of pursuing a self-centered, selfish goal and lifestyle, for each of us we will voluntarily choose a life of selflessness, dedication to the community, for our fellow human beings. In this way of life, all traditional ethical principles and norms will be condemned and replaced by new ethical principles and standards - the ethics of a sustainable community lifestyle or ethics in environmental protection and sustainable development (Pham Cong Nhat, 2017; pp.1-9).

### **Vietnamese Buddhism in the cause of environmental protection and sustainable development today**

Vietnam is a developing country. Over the past years, along with the policy of innovation and international integration, Vietnam's socio-economic life has changed rapidly in many fields, thereby creating positive impacts on the quality of life of every Vietnamese citizen. However, like many developing countries in the world, in the process of development, Vietnam is confronted with many challenges including environmental protection and sustainable development challenges. According to the latest statistics, "In Vietnam, every year the forest is lost about 200,000 hectares, of which about 50,000 hectares are due to reclamation for cultivation" (Many authors, 2005; p. 154). Forests are lost, dragging the carpet layer to regulate lost flow, flooding and disasters caused by it. Looking more broadly, "According to the current deforestation rate, with 11 million hectares per year, by 2040 the world will lose between 17% and 35% of the 10 million species. In 2040, 20-70 species will be extinct every day" (Many authors, 2005; p. 155). Along with deforestation, the speed of urbanization and industrial development is fast, making nature in our country depleted. Only in 5 years (2001-2005), "the total area of the country's agricultural land acquired for different purposes is about 366,400 hectares, or 3.89% of the total agricultural land area being used. On average, each year in the above period, there are 73,288 hectares of agricultural land to be recovered" (Vietnam Buddhist Church, 2012; p.3) and most of the land is good. On the other hand, industrial production "hot development" lack of control mechanisms, discharging into the environment many toxic substances polluting water sources, soil, air, food ... turning many places into landfills industry, receiving hazardous waste, creating land desolation, altering landscapes and ecosystems, threatening the survival and

development of life. Negative impacts from climate change and environmental pollution are one of the factors that threaten sustainable development in Vietnam, requiring the participation of many sectors and sectors. domestic and foreign organizations and organizations, including activities of domestic and foreign Buddhist organizations.

Compared to other religious organizations, Buddhism is said to be the largest religious organization in Vietnam today. The history of existence and development of Buddhism in Vietnam has been more than 2000 years, has gone through many stages with different ups and downs. Buddhism was spread into Vietnam at first only spontaneously. Later, Buddhism was seized by Vietnamese feudal dynasties (such as Dinh, Tien Le, Ly and Tran periods). Buddhism has long been in the subconscious mind of people, attached to the community activities of the Vietnamese people, a natural attachment not imposed by the government, even if Buddhism is respected as a state religion. The long-term existence of Buddhism in the economic, political and social life has brought significant contributions to culture, thought, economy and politics in the history of Vietnam. Currently, Buddhism is being supported by the Communist Party and the Vietnamese State. As of June 2011, Vietnam has 46,459 monks and nuns, 14,778 worshiping facilities, about 10,000,000 followers who have taken refuge (not to mention tens of millions of people who have feelings and Buddhist beliefs (Thich Gia Quang, 2016).

Since being introduced into Vietnam, Buddhist organizations in Vietnam have quickly attached to the nation in the process of common development. Along with other religious organizations, Vietnamese Buddhism is now actively involved in the areas of social activities, in which the environment and environmental protection are also very concerned issues and uncle important. In terms of awareness, Vietnamese Buddhism always upholds the simple, economical and balanced lifestyle, “thiểu dục tri túc” “less education but gaining much understanding” of Buddhists will contribute to reducing pressure on the environment and natural ecosystems (Nguyen Van Tran, 2013; p.16). Practically, by their methods and methods, Vietnamese Buddhism is every day advocating and propagating in monks and nuns, Buddhists on environmental issues are posing in the modern times that people are facing as well as the must protect the environment as it protects its own life. The current message of environmental protection of Vietnamese Buddhism is the words of Venerable Thich Pho Tue (Thích Phổ Tuệ) - Dharma master of the Vietnam Buddhist Church affirmed: “The world in general and our country in particular are facing many difficulties due to the impacts of climate change, the environment, increasingly exhausted natural resources, increasing global temperatures, droughts and floods. floods, epidemics, tsunamis, earthquakes, sea level rise, ... are disasters that threaten the safety of human

life. More than ever, I call on every monk and Buddhist, we need to understand the nature of Buddha's teachings on impermanence, respect for life and the organic relationship between people and nature, to join hands with the social community to protect the social environment and the safety of the earth, it is a practical task to honor the day of our birth to our Đức Từ Phụ” (Thich Pho Tue, 2011).

Currently, the level of interest and participation of Buddhist religious people in the movements and campaigns of environmental protection organized by the government is increasing. Religious people actively participate in environmental protection activities at worship facilities and residential areas with high rates (74%). According to statistics from The General Department of Environment (VEA) from 46 provinces and cities nationwide, 67% of worshipping establishments regularly organize environmental propaganda activities for religious people. Objects of environmental communication in worshipping establishments are mainly religious people. In which the proportion of religious people is Buddhism accounts for 72% (Tran Linh Chi, Nguyen Song Tung, 2014; pp 117-129). In Buddhist monasteries also regularly organize retreats for Buddhists with rich and diverse content. In particular, the issue of environmental protection is also lectured by dignitaries, propaganda for followers and Buddhists as an important content. Coming to these retreats, devotees and Buddhists will gain knowledge of environmental protection from the point of view of Buddhism, so that they can apply and practice immediately in daily life and encouragement. Encouraging others to join hands in action for the environment. Not only paying attention to the cause of environmental protection, Buddhism also pays attention to the development strategy in Vietnam today. The interest of Buddhism in the strategy of sustainable development in Vietnam today is expressed in many ways such as: an example of how to practice and implement environmentally friendly lifestyles; build and develop religious practice facilities associated with nature and especially pay attention to education and training as one of the fundamental solutions to contribute to sustainable development. It can be said that Buddhist education activities have made positive contributions to society on the basis of Vietnamese human resources in the current period. The world is currently at risk of unsustainable development. In that context, Buddhist education has contributed to solving quite a number of issues posed for sustainable development. On the one hand, the Buddhist educational philosophy has a certain meaning in social sustainable development. On the other hand, Buddhist education itself also has elements of sustainability and there is an adjustment towards sustainable development to meet its role in the social requirements. Different from the compulsory and compulsory education of most monotheistic religions, Buddhism takes good teaching, it is necessary for believers to choose and turn themselves into actions so that they are reasonable and reasonable. That form of

education focuses on the process of self-cultivation of mind and nature. It is an education that focuses on practical experience, transforming doctrinal content into concrete action and reality. Educating Buddhism helps people improve their personality, master themselves, and thoroughly understand happiness and suffering. Buddhist education has a certain effect on sustainable development of society. Specifically, Buddhist education has a certain effect on people and subjects of sustainable development. In order to meet the role set for Buddhist education, this religious organization itself has also shifted towards sustainable development. The education system of the Vietnam Buddhist Church today has many similarities with the national education system in general (Doan Minh Huan and Nguyen Quynh Tram, 2014; p.70).

The education of the current Vietnamese Buddhist Church is: primary, intermediate, university and postgraduate. Until 2016, the whole country has 34 Buddhist schools, 3 Buddhist institutes, have been training for over 26,000 monks and nuns (Vietnam Buddhist Education: Traditional and modern, 2016). In general, the role of religion not only contributes to sustainable economic and environmental development, but also in the field of social development in Vietnam today.

Although many important achievements have been achieved, the role of Buddhism in the cause of environmental protection and sustainable development in Vietnam today is also facing many limitations, difficulties and challenges such as problems. era. The development of weapons and science and technology has transformed the life and daily life, including the activities of monks. The transformation of the world, of the era is happening rapidly, but the training of people of Buddhism adapting to these transformations is quite slow... Since then, set out solutions to promote more effectively the role of Buddhism in the cause of environmental protection and sustainable development in Vietnam today such as strengthening activities on propaganda. and raise awareness for all monks and Buddhists about the current cause of environmental protection and sustainable development in Vietnam; Expand the forms of application and practice of Buddhist teachings on environmental protection and sustainable development for all strata of the population; Incorporating the leadership of the Party together with the management role of the State of Vietnam with the leadership and management of the Vietnam Buddhist Church from the central to local levels in raising awareness and effectively implementing the role of Buddhism in the current environmental protection and sustainable development in Vietnam, etc.

#### **4. Conclusion**

Just like many other religions interested in the cause of environmental protection and sustainable development, but for Buddhism, it is even more

meaningful when it is the philosophical views in the original Buddhist teachings as well. has mentioned a lot about this issue from the perspective of the world view and the perspective of this religion. Since coming to Vietnam, Buddhism has gradually asserted its role and became a part of Vietnamese culture, joining and contributing greatly to the development of Vietnam. general development of the country. In the current career of environmental protection and sustainable development in Vietnam, through many different practical forms through which Buddhism has also shown its great role. Although there are many limitations and difficulties, even challenges but with the tradition of accompanying the nation, Buddhism has been contributing more to the common development of the country including the protection career. environment and sustainable development.

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# BELIEF IN THE THAEN OF ISAN PEOPLE

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## **Abstract**

*The Isan people believe the Thaen<sup>1</sup> is the supreme God. Thaen created the earth and all things. Thaen is the Holy Spirit, powerful, destiny and protector of human. The part of Isan culture influenced to believe about the Thaen such as Bun Bang Fai tradition )rocket festival(, kite playing, Bai Sri Su Kwan )Thai blessing ceremony(, exorcise unlucky and Lum Phi Pha )necromancy(. These activities are symbols of relations between Thaen and Isan people. These cultures and traditions, they still believe that the behavior of some animals is the communication of the Thaen to the human world.*

**Keyword:** *Thaen, Belief, Isan people*

## **1. Introduction**

Isan is Northeast of Thailand. There is cultural identity in Isan because once used to be part of the Lan Xang Hom Khao kingdom. Therefore, Isan cultures and Lao cultures are relations each other. They are culture of ethnic groups in Tai-Lao and belief about God. God can give abundance and way of life human. Isan people call this God that “Thaen, Phayatan or Phi Pha” for praise and worship. Mythology about Thaen of Isan people talked about occurrence of humans. In part Lan Xang history said “The all humans born in Nantaopong )gourd(. When Phulangchoeng drill gourd with spike, many humans came out of the hole.” ) Khurusapha, 1963: 138( This belief about Thaen of ethnic groups in Tai-Lao is original culture before Buddhism. Therefore, Thaen is a God who can contact with human like a manner that is interdependent such as, the way of life of Isan people, believe, traditional, politics and governance. Isan people believe that Thaen gives everything for them. Then they should to worship and sacrifice to Thaen with various types of food. ) Choltira Satyavadna, 2018: 483( So, Thaen respected the faith of the Isan people and belief of Thaen became to cultural heritage is a legacy of the past to the present.

Nowadays, the all most Isan culture is influenced by the teachings of Buddhism. However, faith in Thaen of Isan people still appears to insert in the Isan culture. Isan culture is a mix of cultural beliefs about Thaen with the teachings of

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<sup>1</sup> God or Phayatan or Phi Pha

Buddhism. It reflects the local identity, and it is a fundamental belief. Isan culture has a fascinating charm that contributes to be a traditional civilization in the land of the Isan. Therefore, this article discusses belief about Thaen of Isan people, which these beliefs and cultures could promote cultural tourism in the Isan and make income for country.

## **2. Belief Tan**

Thaen is a God who Isan people highest respect. He is the highest status of God. He is holy soul, powerful and deathless because he is created all things in the world such as creates four elements that are soil, water, air, fire, earth and made human. This basic concept of God's creation is myth of theism in area all over the world. Thaen is existence without causation but be the primary cause of all things. Isan people believe that soul of human was born soul of him. Therefore, human and Thaen is related by link be “Gokming Sainaen”.

Thaen is God that appears in the original mythology of Isan and original belief, culture of Isan. Isan believe that Thaen is the supreme God, create all human from Namtaopong and classified into various tribes such human that coming out the drill hole of Phulangchoeng is Tai Lom and Tai Lee, human that coming out the chisel hole of Khunkhan is Thai Loeng, Thai Lo and Thai Khwang. They come out from Namtaopong for 3 days and 3 nights. Nowadays, these people are various tribes in Thailand and Laos such as Phu Thai, Thai Dam, Thai Puan, Thai Yor and Thai So etc. Thaen is very important to the way of life the Isan people because when plant rice season. They have to request and worship Thaen to give a raining for them to do planting rice or when they are sick and unhealthy, they will request to wish from thaen for help them get a good healthy. When they want to get marriage, but they are not sure that their lovers are fated. They have to invite Thaen to forecast the fate for them by staking Sainaen and they have to follow Thaen’s order strictly. )Prayong Saenpuran, 2012: 1( In addition, Isan People believe that Thaen has many levels and different duties. Thaen can be classified into 2 main types: (1) Thaen Luang means supreme God above all other Thaen. )Suwit Wichat, 2009: 1) (2) Satellite of Thaen means Thaen that have less power than the Thaen Luang, and they follow orders of Thaen Luang. )Phiranai Chotikunta, 1988: 87( For example, Thaen Lor is responsible for casting shape and make human face, Thaen Thang is responsible for teaching various subjects to humanity, Thaen Cum is responsible for war, Thaen Chang is responsible for judge to justice, Thaen lom is responsible for communication between human and Thaen and Thaen Naen is responsible for protection Gokming Sainaen of human etc.

Isan people respect Thaen, he is supreme God and ideal value because he likes symbol everything such as he is agent of truth, knowledge, goodness and beauty of ideal. He is the origin of Isan culture, a basic idea and identity that show into Isan

people. Thaen is not Intangible status like the God of Christianity and Islam, but Thaen relates to the lifestyle of Isan people. Depart to the land of Thaen or going to the bright star beside Thaen, which is the highest hope of the Isan people because Isan people believe that they are descendants of Thaen from the paradise.

### **3. Influence of Thaen to Isan culture**

Belief about Thaen influences to Isan culture because Isan people believe that Thaen give happiness to human. Therefore, Cultures of the Isan people have occurred to worship and pray to the Thaen. The influence of the Thaen on the important culture of the Isan people is.

#### **1) Abundance side**

Thaen is the superm God that who gives abundance and rain to the human in the world. All most, Isan societies are agricultural society do rice farming and rain is very necessary for planting in the season. Therefore, Bun Bang Fai tradition )rocket festival( was occurred in Isan of Thailand because they believe that Thaen bless for rainfall famous tradition. Moreover, Isan people believe that Bang Fai is signal will relate to Thaen. Then Thaen makes it rain for planting season and human in the world. Isan people will knowledge that rainfall more or less in the year, they will observe animals' behavior because they believe that they are a signal of Thaen to inform human. For example, the ants will carry the eggs to a high position, the Ka-Pood birds )crow pheasants( will sound to remind before rain, the frogs will sound to remind after rain for Thaen to know that the rain to the human in the world. Then Isan people will start a farm after Bun Bang Fai tradition. After that, it is harvesting season, Isan people will play bow kite<sup>2</sup>. This activity signals the Thaen that they had reached the harvesting season. So, Thaen should to stop the rain in harvested. After they harvested already, they will sacrifice of various cereals crops and foods for thank you to Thaen.

#### **2) Spirit side**

The belief in the Thaen of Isan people is a belief about the spirit. They call the spirit is “Kwan”. When the Isan people found the cause of shock, they believe that Kwan will escape from the body to cause various illnesses. Therefore, Isan people must make the Su Kwan to invite the spirit into the body. This rite is to consist of patient, Brahman, thread ) cotton tie around wrist( and Bai Sri<sup>3</sup>. Brahman is responsible to invite the spirit. When completed praying, who attend will bring the thread to tie the patient's wrist. Moreover, Bai Sri Su Kwan can use to welcome adult or guest. It is the sincerity and loving like a family.

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<sup>2</sup> The kite has head that sets up a bow. Line of bow is made from rattan sheet or Tan leaf )palm leaf(, and both ends stick wax of a small bee. When play, it will sound Du-Du.

<sup>3</sup> Bai Sri means tray with pedestal made from banana leaves and flowers.

### **3( Dastiny side**

Isan people believe that human have a good luck or unlucky in their life because Thaen is controller and life principles human in the world. If human beings do well, they will find good things or good luck in their life. In contrast, human beings do not do well or violate to the laws of the Thaen, they will find the infliction of them. The Punished person must apologize to Thaen by exorcise unlucky. This rite does the same Bai Sri Su Kwan ceremony, but Bai Sri was changed to be Kra Thong<sup>4</sup>. There is only patient and Brahman participant in this rite. When completed praying, patient or relative will take Kra Thong to leave at the three way crossroads or the forest outside the village. It is apologizing and respect to the Thaen.

### **4( Treatment side**

Isan people believe that illness has caused from violation to the ghost and ancestor. Treatment has to invite the Phi Pha or Thaen into the body of the medium, a medium who communicates with spirits. Then Phi Pha stay inside body and a medium Lum Phi Pha (Phi Pha dance). There are Phi Pha medium, Khene players )reed organ(, patient, Khay )oblation( in Lum Phi Pha of Isan people. This treatment use to method by magic and rite reflects to view of the original life style human in perspective of Isan community that has been accumulated for thousands of years. The Lum Phi Pha is a physical and psychological activity, but it is psychological encouragement for patient with Isan people. Yuttaphan Taechkaew, n.d.: 314)

The Thaen is the supreme God. He is the creator and protector of human. This belief about Thaen is the origin of Isan culture. It is the link between Isan people with Isan culture and relative to the way of life of the Isan people. They believe that they are the descendant of the Thaen. He sent them to be born in the world, and he protects forever them. So, they must be respected and gratitude to Thaen. Even though the society has changed in modern times, but belief about Thaen of Isan people is still charming in the Isan society. This belief dimension, it is a fulfillment of human society to achieve true happiness and eternal happiness. It is different from objects that are valuable, but not enduring. These things can make human experience of the true value of life. In addition, belief about Thaen of Isan people helped to develop the tourism economy. It generates a lot of income and reputation in Thailand.

### **4. Conclusion**

The Isan society is an agricultural society. So, the way of life and belief is binding with nature and the environment around them. The belief of Isan people

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<sup>4</sup> Kra Thong means tray made from the banana stalk to put flowers, betel areca, cigarette, food and fruit.

mentioned above that Isan people emphasize the importance of nature and spiritual beliefs. Thaen represents the nature and spirit that reside in nature. The way of life of Isan people is interdependent nature such as planting, observing animal behavior and soul belief. The Thaen is not only belief, but it still reflects the importance of the surrounding environment. For example, planting requires rain, Rice farm that abundance must have the frogs, playing kite must have wind and human social must get encouragement from people in society each other. This article, in addition to presenting the belief about Thaen of the Isan people, yet shows the relationship between human and the environment by belief is a medium to connect this relationship. Thaen is the symbolic values and goodness of the Isan people. This belief is part of Isan people. Nowadays, Isan society develops alongside the belief about Thaen. The belief is not ignorance, but it helps to improve the quality of life Isan people. They show that the globalized society toward with belief together.

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# DETERMINANTS INFLUENCING THE QUALITY OF ACCOUNTING HUMAN RESOURCES: THE CASE OF HANOI, VIETNAM

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## **Abstract**

*This study is conducted to investigate the impact levels of determinants on the quality of accounting human resources in the Accounting service firms in Hanoi. Data were collected from getting 145 questionnaires from accounting service firms doing businesses in Hanoi. Based on the data collected, we use Cronbach's Alpha, EFA and run regression model for knowing the impact levels of each independent variable on dependent variable of the quality of accounting human resources. The results show that three determinants including Business culture (BC), Income (I) and Education and training (ET) have positive relationships with the quality of accounting human resources. Based on the findings, some recommendations are given for improving the quality of accounting human resources of accounting service firms doing business in the context of Hanoi.*

**Keywords:** *accountants, determinants, quality of human resources*

## **1. Introduction**

The accounting service firms in Hanoi provide accounting services. These firms play an important role in assisting and advising investors and firms on the laws, regimes and financial and accounting institutions of State; guiding firms to make vouchers, bookkeeping, tax calculation and financial statements. However, The Accounting service firms in Hanoi faced many difficulties, such as: increasingly fierce competition, the quality of human resources did not meet the requirements.

In the accounting service firms, human resource accounting is mainly, accounting human resource are responsible for all activities of the company. The development of the company, accounting human resource play the most important role, creating value for the goals set by the company. Ergo, one of the matters in need of our concern is whether the human resources, particularly the accounting personnel of these firms, are able to meet the job's requirements under new circumstances and to improve their performance in order to adapt to the rhythm and tendency of this country's socioeconomic development, which factors influence the quality of accounting human resources?

Through researches in the context of Vietnam and in the world, we see the gaps of the prior studies as (i) focusing only on analyzing and evaluating the quality of human resources in manufacturing and processing firms; (ii) through running EFA, Structural Equation Model we know the impact level of determinants that influence the quality of human resources. However, the study of the measurement of regression and regression analysis, measurement of factors influencing the quality of accounting human resources in Vietnam has not been conducted. In addition, the accounting human resources has its own characteristics: Providing accounting information for both internal and external entities.

Based on literature review, we used a qualitative research methodology basing on in-depth interviews with 5 lecturers with extensive experiences in accounting of the National Economics University, University of Labor and Social Affairs and DAINAM University in Vietnam. At the same time, we interviewed five experts working as directors, chief accountants and general accountants in Vietnam accounting service firms. The results of the interviews includes the quality of accounting human resources, what determinants affect the quality of accounting human resources.

Based on the results of qualitative research and the inheritance of previous studies, we design the model of determinants influencing the quality of accounting human resources at the Accounting service firms. Moreover, we develop and validate the scales of factors influencing the quality of accounting human resources at the Accounting service firms, thus providing some recommendations to improve the the quality of accounting human resources at the Accounting service firms.

## **2. Research Model**

Based on the results of Susan (1987), Gill and Howard (1993), Phung (2008), Le (2009), Nguyen (2013) and Do et al. (2019); Tran & Do (2019) and based on the results of qualitative research through expert interviews, some variables are explained as:

## **Business culture**

Now, there are many views on business culture. Culture is the value of intangible assets of firms. Culture is the concepts expressed in living habits and thoughts that govern behavior and emotion of human resources. Management apparatus in general, accounting apparatus in accounting service firms, mainly consists of people with accounting expertise. Therefore; the culture of these firms is the behavior of accounting human resources with objects inside and outside the company. It is a system of values that are qualified by human resources to establish, build, preserve, worship, share and form a close and close relationship in behavior. Business culture also expresses the core value of the business, a sign of distinguishing this business from other businesses, which is the traditional feature of the business.

Each human being in general, accountant in particular has a cultural influence from family, community and workplace to create their own character.

The accountants in the Accounting service firms in Hanoi all have a high level of education, an understanding of high socio-economic knowledge and a certain level of training can definitely show a culture commensurate with the level of knowledge of them. Culture in firms is a factor that makes the difference, builds reputation and brand of firms. Culture in firms affects the quality of accountants through direct impact on the psychology, the attitude of accountants and expressed through the implementation of the work of accountants in accounting service firms (Nguyen, 2013).

*Hypothesis H1: Business culture have an influence on the quality of accounting human resources in the Accounting service firms in Hanoi*

## **Income**

Income for laborers is one of the issues that are concerned not only for laborers but also for labor users. When it comes to income, most laborers think of their salary, wages or bonuses for their efforts. In addition, for accounting human resources, most of them have quite a sufficient understanding of the income received not only financial income but also non-financial income. It is a remuneration for working conditions, work and career development abilities; the working style is fixed into regulations; is the workplace atmosphere created by business leaders.

According to interview results and statistics, the accounting human resources working in Accounting Services Firms in Hanoi have signed labor contracts in accordance with the provisions of the labor law. Since then, motivating the peace of mind, the attachment between accounting and corporate human resources and accounting human resources understands the responsibilities and benefits of each party in labor contracts.

Most accounting service firms in Hanoi have paid health insurance, social insurance, unemployment insurance, and adequate trade union funds, because the accounting human resources has an understanding of Labor Law and other laws is quite good. However, many accounting service firms do not have trade unions, so advocating for and protecting legitimate and legitimate interests of laborers has not been fully implemented. For some firms that have trade union organizations, however, the operation of trade unions has not really brought about the efficiency and expectations of laborers.

Survey data can be seen, accounting human resources, although satisfied (67.6%) or very satisfied (22.1%) (Table 4) with income received from the Company, however, they still expect revenue levels.

*Hypothesis H2: The income received by the accounting human resources have an influence on the quality of accounting human resources in the Accounting service firms in Hanoi.*

### **Education and training**

Education and training are not only the task of the State, but also the functions and tasks of all organizations and individuals.

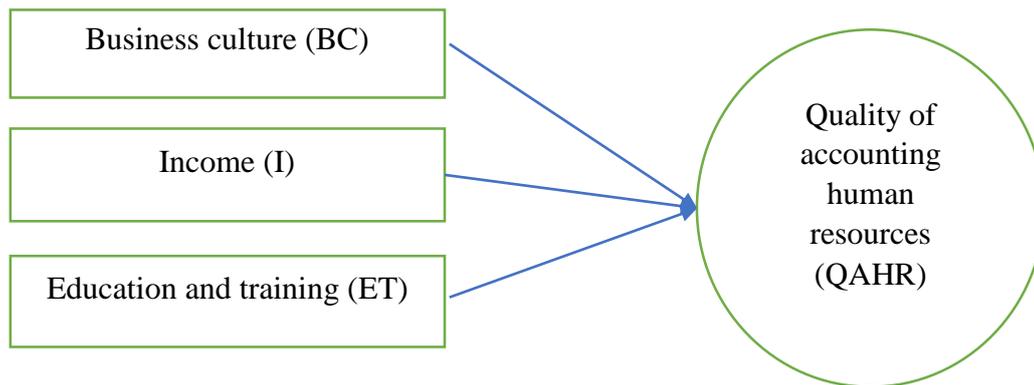
Education is understood as activities aimed at acquiring knowledge so that people understand more comprehensively in all aspects of life. Training is a learning activity that equips people with more knowledge in all aspects, to prepare people for comprehensive and deeper knowledge. Accounting human resources training refers to the stage when the accounting human resource has a certain level of study from universities and colleges to be trained. It is the teaching and training of accountants in practical accounting work at the company, updating new accounting knowledge, exchanging specialized legal knowledge related to accounting to achieve The objective of providing accounting information of the unit is high quality, accurate and appropriate. In addition, training in accounting human resources refers to teaching practical skills of various accounting software, tax declaration software, or knowledge related to debt comparison with customers and suppliers, control cash fund, inventory of assets ... for accounting human resources to comprehend and master the knowledge, skills and occupations systematically, prepare for accountants to undertake a new or more complete job old job.

Knowledge and content that accounting human resources are educated in universities and colleges are more theoretical and academic. Accounting has a lot to do with specialized laws such as corporate law, competition law, commercial law, tax law ... and is highly topical. In addition, accounting profession requires high expertise, must update knowledge regularly. Therefore, the retraining in Accounting

Services Firms in Hanoi has affected the quality of accounting human resources, need to be taken seriously.

*Hypothesis H3: Education and training of accounting human resources have an influence on the quality of accounting human resources in the Accounting service firms in Hanoi.*

From the above analysis, inheriting the research model of Nguyen (2013), we design a research model:



**Figure 1. Research model**

### **3. Research Methodology**

In order to achieve the objectives of this paper, we based on the theory of previous studies and the results of qualitative research through expert interviews and model analysis. On the other hand, we combined with the inductive method to verify, based on qualitative research results, to adjust and add observation variables to the questionnaire for conducting quantitative research.

Inheriting the results of research by Susan (1987), Gill and Howard (1993), Phung (2008), Le (2009), Nguyen (2013), Do et al. (2019) and Tran & Do (2019); and using qualitative research approach through interviews with experts to perform quantitative research, we identify three determinants that affect the quality of accounting human resources, i.e. Business culture (BC), Income (I), Education and training (ET).

Then, we conducted a questionnaire consisting of 11 observation variables with a 5-point Likert scale. Independent variables are measured from 1 "without effect" to 5 "strongly". The method of data collection was done through the survey and subjects are accountants in Accounting Services Firms doing business in Hanoi.

We sent 200 questionnaires and received the feedback of 160. After checking the information on the votes, there are 145 questionnaires with full information for data entry and analysis, the size of this sample is consistent with study of Hair et al. (2006) ( $n = 50 + 8 \times m = 50 + 8 \times 11 = 138$ ). Therefore, the rest of observations for model 1 are 145 surveys, including 100% participants who are chief accountants,

general accountants and Accounting Services Firms in Hanoi's staff accountants. Participants mostly have Bachelor degree or higher (94.5% - table 2). As can be seen, all participants are at high quality of accounting knowledge, and this makes surveys' answer are reliable.

We employ FA analysis and regression model to determine the impact levels of determinants on quality of accounting human resources.

**Dependent variable:** The quality of accounting human resources: measured via accountant's intellectual competence (Do et al., 2019), via Accountants' physical and mental strengths (Tran & Do, 2019).

*Independent variables: The independent variables are described as below*

Code	Variables
<b>Business Culture (BC)</b>	
BC1	Culture in firms is a factor that makes the difference, builds reputation and brand of firms
BC2	Business culture creates links and attachment for all members in each business
BC3	Business culture is a belief in each individual of accounting human resource
BC4	Business culture impacts on psychology attitudes of accounting human resource
<b>Income (I)</b>	
I1	The accounting human resource is interested mainly in the monthly salary received
I2	The accounting human resource is interested other items in the remuneration system of firm
I3	Income accounting human resource get an impact on their dedication and intellect
<b>Education and training (ET)</b>	
ET1	Human knowledge and creativity are the result of education and training
ET2	The accounting and education program at universities is quite complete but needs to be improved
ET3	The firm's training programs helps the accounting human resources update their knowledge regularly.
ET4	The firm's training programs helps the new accounting human resources with practical skills and practical knowledge.

## **4. Results and Discussions**

### ***4.1. Characteristics of accounting service firms***

Providing accounting services includes: Receiving, processing, preserving and managing customers' documents, papers and books in accordance with the latest legal regulations; Balancing customers' debts and profit or losses to promptly solve difficulties as well as legalize taxes that customers need to pay; Prepare financial statements, tax reports, tax finalization for businesses with functional agencies quickly, neatly and accurately; Appointing accounting human resources to work at the company's office to implement and process accounting, labor, insurance, invoices and tax records for customers; training for representatives of customers on issues related to accounting at enterprises to improve the capacity of legal knowledge in the field of accounting and taxation.

Serving customers to bring practical benefits to each customer, ensuring sustainable development for customers based on the quality of accounting services.

Focusing on developing the quality of human resources to best serve the needs of customers in the integration phase, the number one priority for developing the capacity of working in accounting human resources, accounting human resources can study and improve skills, regular working and professional methods to improve and develop.

Accounting Services firms have been and are factors of economic development for the country to integrate with the region and the world. Accounting services firms have shown their roles: Helping customers understand and understand the Party's and State's guidelines and policies. Advising business owners on selecting suitable business management organization models, helping business owners and businesses have accurate information. However, the Accounting Services firms also have limitations: Updating knowledge and exchanging information between members with Vietnam Association of Accounting and Auditing (VAA) is not frequent, the activities of accounting service firms are also heavily experienced, there is a lack of general regulations, professional qualifications of accounting human resources are not suitable with requirements (Mai, 2013).

### ***4.2. Research Results***

#### ***The result of descriptive statistics***

Information of data collected is shown in Table 1, Table 2, Table 3 and Table 4 as below:

**Table 1: Respondents by Jobs**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Accounting staff	79	54.5	54.5	54.5
	General accounting	51	35.2	35.2	89.7
	Chief accountant	15	10.3	10.3	100.0
	<b>Total</b>	<b>145</b>	<b>100.0</b>	<b>100.0</b>	

**Table 2: Respondents by education level**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	College	8	5.5	5.5	5.5
	University	135	93.1	93.1	98.6
	Master's (MA)	2	1.4	1.4	100.0
	<b>Total</b>	<b>145</b>	<b>100.0</b>	<b>100.0</b>	

Data in Table 1 and table 2 show that among the 145 respondents, accounting staff accounted for 54.5%, General accounting accounted for 35.2%, while the remaining 15 were Chief accountant, accounted for 10.3%. Of these, 145 respondents, of which 8 with college degrees, accounted for 5.5%; 135 with university degrees, accounted for 93.1%, MA degrees accounted for 1.4%.

**Table 3: Respondents by work experience**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	58	40.0	40.0	40.0
	Over 3 years	32	22.1	22.1	62.1
	From 1 to 3 years	55	37.9	37.9	100.0
	<b>Total</b>	<b>145</b>	<b>100.0</b>	<b>100.0</b>	

**Table 4: Respondents by satisfaction with the job**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfaction	98	67.6	67.6	67.6
	Less Satisfaction	15	10.3	10.3	77.9
	Fully Satisfaction	32	22.1	22.1	100.0
	<b>Total</b>	<b>145</b>	<b>100.0</b>	<b>100.0</b>	

Data in Table 3 and table 4 show that among the 145 respondents, Accounting human resources for less than 1 year is 58, accounted for 40%, Over 3 years accounted for 22.1%, while the remaining 55, were from 1 to 3 years, accounted for 37.9%. Of these, 145 respondents, of which 98 satisfaction with the job, accounted for 67.6%; 15 with less satisfaction with the job, accounted for 10.3%, Fully Satisfaction accounted for 22.1%.

***Quality scale analysis result***

By using scale analysis, it can eliminate inconsonant variables and reduce errors in the research model. Therefore, only variables which have total correlation coefficients (Corrected Item – Total Correlation) greater than 0.3 and Cronbach’s Alpha coefficients equal or greater than 0.6 are accepted (Hoang & Chu, 2008). By analyzing Cronbach’s Alpha analysis of determinants have an influence on the quality of accounting human resources (3 determinants with 11 observed variables), the result is presented in Table 5.

**Table 5: Results of analysis of Determinants Confidence of Scales in the Model**

Determinants	n	Cronbach’s Alpha	Corrected Item-Total Correlation
Business culture (BC)	4	0.785	0.538
Income (I)	3	0.789	0.579
Education and training (ET)	4	0.649	0.401

The result shows that, all Cronbach’s Alpha coefficients of population are above 0.6; all Corrected Item – Total Correlation of observed variables are above 0.3. So all variables of research model are suitable for next analyses. (Hair et al, 2006).

***Exploratory Factor Analysis***

EFA were conducted, we used the method of extracting coefficients were Component Alalysis and Varimax, Analyzes of result: 11 attributes of independent variable.

**Table 6: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.878
Bartlett's Test of Sphericity	Approx. Chi-Square	752.833
	Df	55
	Sig.	0.000

The results of factor analysis in Table 6 show that  $0.5 < KMO = 0.878 < 1$ . Barlett's testimony shows  $sig. = 0.000 < 0.05$ . It means variables in the whole are interrelated.

After implementing the rotation matrix, 3 determinants with factor load factor are greater than 0.5; Eigenvalues are greater than 1; the variance explained is 67.796%. It demonstrates that research data analyzing factor discovery is appropriate.

Through the quality assurance of the scale and the test of the EFA model, identify 3 determinants influencing the quality of accounting human resources.

### ***Regression Model Analysis Result***

Based on adjusted model after the exploratory factor analysis, we have a multiple regression model:

$$QAHR = \alpha + \beta_1 BC + \beta_2 I + \beta_3 ET$$

**Table 7: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.657 <sup>a</sup>	.547	.379	.57026	2.169

a. Predictors (Constant): ET, BC, I

b. Dependent Variable: QAHR

**Table 8: Anova<sup>a</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1.154	3	4.385	11.183	.009 <sup>b</sup>
Residual	45.853	141	.325		
Total	47.007	144			

a. Dependent Variable: QAHR

b. Predictors: (Constant): ET, BC, I

**Table 9: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.423	.396		11.180	.000		
BC	.200	.118	.193	3.687	.028	.530	1.885
I	.363	.125	.268	4.308	.003	.419	1.862
ET	.150	.126	.177	1.399	.039	.484	1.668

a. Dependent Variable: QAHR

***Results of Table 7, 8, 9 show that:***

Multicollinearity testing: all variance inflation factor (VIF) of independent variables are under 2, so multicollinearity of model is low (Hoang & Chu, 2008). Therefore, this regression model does not have any violation of the CLRM basic assumption.

Durbin - Watson statistic which is used to test the autocorrelation of residuals presents the model does not violate when using multiple regression method because Durbin - Watson value is 2.169 (in the interval of 1 and 3). In other words, the model is indicated no autocorrelation of residuals (Hoang & Chu, 2008).

ANOVA testing result: Level of significant (Sig.) = 0.009 implies that multiple regression model is suitable with data.

Coefficient of R<sup>2</sup> (R Square) = 0.547, which means 54.7% of the total variation in the quality of accounting human resources will be explained by the regression model.

Research model result indicates that all independent variables Business Culture (BC), Income (I), Education and training (ET) are significant (because Sig. < 0.05) to the quality of accounting human resources.

Determinants have influences on the quality of accounting human resources are presented in the following standardized regression model:

$$\mathbf{QAHR = 0.193 \times BC + 0.268 \times I + 0.177 \times ET}$$

Research model result indicates that all independent variables Business Culture (BC), Income (I), Education and training (ET) are significant (because Sig. < 0.05) to the quality of accounting human resources. Hypotheses of H1, H2, H3 are accepted.

***4.3. Discussions***

**Income of accounting human resources**

Normally, working time of human resources is calculated monthly, working 8 hours / day, 5.5 days / week. However, if in the accounting season or the time when firms work, the accountants will have to work overtime. Income from the average monthly salary of accounting human resources for less than 4.5 million VND accounted for 6.2%; from 4.5 to 6.75 million, accounted for 4.1%; from 6.75 to 10 million VND accounted for the highest percentage (67.6%), the rest was over 10 million VND (Table 10). Income from wages has a difference between job positions and work experience. In addition to salary over time, accountants receive a sales salary for completed service provision contracts. If the accountant introduces new customers to the company, the accountant will also receive a commission of 5% to 10% of the revenue from that customer.

**Table 10: Respondents by income from the average monthly salary**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 4.5 million	9	6.2	6.2	6.2
	Over 10 million	32	22.1	22.1	28.3
	From 4.5 to 6.75 million	6	4.1	4.1	32.4
	From 6.75 to 10 million	98	67.6	67.6	100.0
	<b>Total</b>	<b>145</b>	<b>100.0</b>	<b>100.0</b>	

Accounting accountants have received bonuses (holidays, Tet holidays, company founding days), welfare (traveling in the beginning of the spring, vacation) every year, however, the level of receiving is not much.

Accounting accountants in accounting service firms in Hanoi often work concentrated in the company's office, both working independently and working in teams. In addition to working time at the company office, the teams also have to go on business trips or work at the customer's production and business locations.

The ability to develop jobs and careers of accountants in accounting services is quite good. The company's customers are diversified in business lines, each business has its own characteristics, requires the process of handling different accounting jobs.

Accounting Services Firms in Hanoi have developed internal rules and regulations, contributing to creating an atmosphere at the workplace in accordance with the characteristics of the accounting service industry.

When the income level that the accounting human resources receives is commensurate with the merit and work that makes them comfortable and effective, it will attract the dedication and wisdom of the people. Therefore, enterprises' managers of accounting services firms need to pay more attention, contributing to the use of effective accounting human resources, as a competitive factor in the process of sustainable development.

Accounting human resources are educated and trained quite well in universities, colleges and accounting service firms. However, an accounting department of human resources has not received the expected level, so there is still a phenomenon of accounting human resources for job jumps.

## **Business culture**

Culture is the "sanctions" applied when there are cultural violations affect the results of production and business, brand, reputation or image of the firm. Business Culture has a very important position and role in the development of firm. If the firm lacks cultural, linguistic, documentary and information (cultural knowledge) elements, it is difficult for businesses to stand firm and survive.

In the success of every business, there is based on the personal relationship of the person of the leader and the staff. Therefore, in addition to objective factors such as creating markets, consumer benefits, the integration process into the regional and world economies. It is impossible not to care about business culture. Business culture management is better business governance.

## **Education and training**

The training programs of universities have provided the necessary knowledge to do accounting. However, the training program has not been appropriately distributed between theory and practice; there is no good combination between basic knowledge, professional skills and skills; not yet developed the necessary skills. In addition, Vietnamese accounting standards are compiled according to the content of international accounting standards (IFRS), however, the IFRS teaching of universities is currently not built and implemented properly, synchronized.

At Accounting Services Firms, the accounting human resources work mainly directly, providing accounting services to customers. Accounting Human Resources are relatively trained with accounting expertise. The level of accounting human resources is relatively equal.

Most Accounting Services firms in Hanoi have developed and implemented training programs for accounting human resources. Although the content of the training program is different between firms, firms often have training methods such as: (i) For new accounting human resources: Retraining right after entering the company, assigning suitable working groups to learn from each other. (ii). For former accounting human resources: Organizing short-term training in the form of the company organizing training courses or sending to update classes organized by the VAA, Vietnam Association of Certified Public Accountants (VACPA)...

Training, retraining and remuneration are one of the necessary measures to attract and retain experienced accountants.

## **5. Recommendations**

Based on the results, some recommendations are given in order to improve the quality of accounting human resources, as below:

### **For business culture**

Business culture, working environment in Accounting Services Firms need to be carefully built. Firms need to create a corporate culture, based on 2-3 common values that accounting human resources agree on, or basic rules that can help nurture and accelerate this process. Firms design their own rules to facilitate the environment work, encouraging accounting human resources to implement creative ideas and benefit to firms.

Supervisors and managers should have good competence, scientific management methods as well as timely and fairly support employees.

### **For income of accounting human resources**

The level of salaries for accountants must ensure satisfactory living, further learning, thus attract high-quality accountants to work for Accounting Services Firms. In the most cases, salary is the most effective driving force that has been applied so far.

Types of labor remuneration play a key role in motivating workers to work for and create value for the firm. Therefore, it is necessary to:

(i) Develop an effective performance assessment system to create the firm basis for the remuneration according to the level of work completion and the work performed; thus maintain the current accounting human resources, as well as attract and retain expert accountants, especially job placement. A high salary and recognition by the superiors can make accountants stick with Accounting Services Firms for a long period of time.

(ii) Have a reward system that is written in documents for each reward level, celebrate a recognition ceremony to show support and consensus among employees, thus encourage creativity;

(iii) Facilitate the help for accountants to study and improve their qualifications to meet up the requirements of firms, market demands and adapt to life.

### **For education and training**

#### ***First, For universities***

##### ***(i), Applying student - centered approach to accounting training***

The learner-centered approach (SCL) is an educational approach that focuses on learners and their needs instead of relying on teacher input. The benefits provided by the SCL method in improving the learning process are not controversial, however, to successfully apply, it is necessary to remove barriers or challenges from many internal factors of learning process. In order for the SCL training method to be

successful requires the contribution of learners, infrastructure, training facilities, and especially teachers (Pham, 2017).

(ii), *Innovating university-level accounting teaching according to the approach of international financial reporting standards (IFRS)*

Teachers need to change the approach in teaching to teach principles rather than repeating the rules set out in the accounting regime: (i) Changing from teaching / learning attitudes according to repetition rules for teaching/learning attitude according to problem detection, (ii) Determining the level of detail of the teaching topic, (iii) Adjusting the assessment process (Nguyen, 2017).

### ***Second, For Accounting Services Firms***

The importance of education and training is the leading factor in developing the quality of accounting human resources is very necessary for long-term development strategy of Accounting Services Firms:

+ Building a system of managing knowledge, skills and professional training levels for accounting human resources.

+ Develop standards to assess the quality of knowledge and skills of professional training for accounting human resources.

+ Determine the standards for instructor at the firms and the instructors at the business need to reach a certain level of careers.

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# PAST TRAVEL EXPERIENCE, INNER MOTIVES AND TOURIST ATTITUDE UPON VISITING THE DESTINATION TYPICAL OF CULTURAL TOURISM

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## **Abstract**

*Knowledge of people's travel motivations and its association with destination selection plays a critical role in predicting future travel patterns. The objectives of this study were to uncover the travel experience of tourist associated with inner motives and attitude toward destination of Hanoi residents to Hue that respectively are destination typical of cultural tourism. The results of an in-depth interviews and investigation reveal travel experience, inner motives and tourist attitude toward destination. Results show that the tourist motivations especially the desire for exploration significantly affect their attitudes. Moreover, travel experience was found to exert a significant effect in the inner motives for exploring culture and sub-culture in destination. Management implications and recommendations for the cultural tourism of Hue destination are provided.*

**Key word:** *consumer behavior, travel experience, inner motives, attitude toward destination, cultural tourism destination.*

## **1. Introduction**

A tourist's decision-making process is a complex sequence of such decisions as which destination to choose, which attractions to visit, when to travel, with whom, for how long, how much money to spend (Woodside and Lysonski, 1989; Woodside and MacDonald, 1994; Hyde, 2008; Oppewal et.al., 2015). Of all these issues, destination choice is one of the most important decisions through the journey and is often studied with regards to geographical locations. (Kim et al, 2008; Byon and Zhang, 2010). In studying destination choice, we need to answer three questions as follows: (1) why tourists choose that destination? (2) what do they do in that destination? (3) how they get to the destination?

Um and Crompton (1992), Jacobsen and Munar (2012) believed that information of destination really has a big impact on visitor motivations, behavior as well as destination marketing strategies. The information that visitors get from their personal experience, from relatives and friends or from agencies, companies...

Therefore, a few researchers explored the relationship of travel experience and preference for destinations or destination choice that had affected by tourist motivation and perception.

The literature still suffers from a lack of empirical studies that investigate whether the relationship of travel experience, inner motives and attitude toward destination. Therefore, the specific objective is to analyze and measure degree of influence of travel experience on inner motives and tourist attitude toward destination of those who are from the same place and travelling to cultural destination namely Hue. Therefore, the finding of study will help corporate managers formulate better strategies that fit specific characteristics of particular destinations.

## **2. Literature review**

### **Model of consumers' behavior in tourism**

Consumers' behavior in tourism are behaviors that are related to the consumption of tourism services, that are manifested in searching, buying, using and evaluating tourism services in order to satisfy certain needs of tourists. Trần Minh Đạo (2012) argued that consumers' behaviors are all the behaviors that are performed by consumers in the consumption process. Consumers' behaviors are a complex process since they are rooted in internal psychological factors. In tourism context, this process is made more and more complex due to the intrinsic characteristics of tourism services, i.e. intangibility, inseparability, v.v. (Correia et. al, 2007). Investigating consumers' behavior refers to investigating how they make decisions on using existing resources, consuming products and services for satisfying individual needs (Kotler, 2000).

Depend on information integration theory (IIT) from Anderson's (1981, 1982), consumer decision making requires these basic steps: need recognizing, information searching, evaluating of alternatives, purchasing and post-purchasing. A theory of information integration is applied to attitudes and social judgments, based on a principle of information integration. This theory is able to be great meaning in the areas of learning, perception, judgment, decision making, and personality impressions, as well as attitude change. The information sources can be both internal (personal or travel experience) and external (news media, guide book, word-of-mouth,). The information-processing approach assumes that consumers are continuously looking for and processing information in order to improve the quality of their choices (Bettman, 1979). The typically logical connection between past travel experience and tourist motives as well as future travel behavior has not been studied widely. In the fact, travel experience has been found to influence on motives, behavior of tourist (Goodrich, 1978; Woodside and Lysonski, 1989). In addition, Mazursky

(1989) indicated that travel experience and personal experience sharing of consumers play an important role in motives as well as behavior of tourist.

Woodside and Lysonski's general model (1989) of traveller destination choice is probably the most popular conceptualization to date that is in line with Um and Crompton (1990) and Howard and Sheth's theory (1969). The model shows that, both marketing variables (coming from the marketing mix's four Ps) and traveller variables (i.e. previous experience, socio-demographics, lifestyles and value system) effect to tourist destination awareness that to set to the final location choice. On the other words, this information or past experience could help tourist to have well-defined preferences, create inner motives that's based for making a choice in the future.

In summary, the theory of planning behavior is often used in theoretical research models to predict behavior as well as destination choice of tourist (Jalilvand et al, 2012; Prayag, 2008). The central model of behavioral theory demonstrates that human behavior will lead to a specific outcome based on the stimulus of reference factors and the necessary internal and external resources. In this study, the author focuses on clarifying the influence of information source from tourist's travel experience on their inner motives and attitude towards chosen destinations.

### **Inner motives**

Consumer behavior theories indicated that personal characteristics lead to actions of each person (Schiffman and Kanuk, 1978). Following the research model of Hill (2000), visitors' motives impact on their consideration or commitment to some favorite destinations based on their attitudes towards the destination. In other words, the attitude of loving one or a few destinations comes from not only objective factors but also subjective factor and inside motives or personal characteristics is one of factor belong to subjective ones. In this respect, tourism activity and destination selection behavior are motivated by inside motives or individual characteristics of the subject (Dann, 1977; Gonza'lez and Bello, 2002; Kim and Lee, 2002; Sirakaya et al., 1996; Decrop, 2006; Tezak et al., 2012; Mlozi et al., 2013). These authors suggest that one of the reasons why travelers choose destinations for their trip is by the urge and personality of everyone. The urge or inner motives could be affected by objective factors or subjective ones such as their own travel experience in the past (Um and Crompton, 1992; Hill, 2000, Jacobsen and Munar, 2012). They are committed to choosing an unspoiled destination or revisit one destination they once traveled by psychologically want to express themselves, or relax, make more friends, visit relatives, or they want to discover, find out a specific value at the destination. It means that the choice of a tourist destination is whether the visitor wishes to achieve certain benefits or satisfy his or her expectations for the destination as well as the goods and services involved.

## **Travel experience**

Information on destination is of great importance to tourists and destination managers as well as the overall tourism industry (Nicoletta and Servidio, 2012). Searching for information is considered one of the main factors that determine destination choice (Jacobsen and Munar, 2012). Sources of information may be internal or external; or informal information from relatives and friends or formal information from brochures and tourism associations (Molina and Esteban, 2006). One particular feature is that returning visitors often do not want to find out more about external sources of information that they rely on their own experience; while external sources are basically useful for potential visitors (Fodness and Murray, 1997). Especially, Fodness and Murray (1997) emphasized that tourists' self-reported assessment of information sources in relation to the entirety of a journey. In everyday use experience can be seen as having two related meanings—the process of observing or perceiving, sensing, encountering or undergoing some event, and the knowledge gained from the accumulation of these encounters or perceptions. These themes of sensation, cognition, affective response, and memory are also repeated in the more formal definitions of experience that can be found in the tourism and related literatures. The recurring themes include the importance of experience being subjective, based on sensations, involving participation in activities, and resulting in learning or knowledge acquisition.

A widespread acceptance that people are constantly striving to expand information sources with the desire to gain many benefits from their decision-making. Kerstetter and Cho (2004) showed the inconsistencies in some research results that as travel experience increases, the information searching decreases; while other studies show the opposite result. In fact, people who have travel experience could look for related information less and faster than the other people; because they can base their own previous information. Meanwhile the other research results indicated the amount of information resources does not necessarily need to be reduced based on their experience (Lehto et al., 2004), visitors in all situations increasingly use their needed information (Shanka and Taylor, 2004).

## **Attitude toward destination**

Attitude toward a destination or a tourism service/product depicted psychologically biased, expressing positive or negative assessments of tourists when implementing a certain behavior (Ajzen, 1991). Attitude is understood as a reaction to an situation or a phenomenon positively or negatively. Accordingly, the attitude means to synthesize the knowledge, views, experiences, emotions, desires and reactions of individuals with that object. The attitude consists three components:

awareness (a collection of information about the object collected, processed, evaluated and procured by the consumer), perceived (the general assessment and the results of emotional, knowledgeable and direct contact with the perceived object) and behavioral or intentional tendencies (which represent the tendency of individuals to act on the subject) (Vincent and Thompson, 2002). Therefore, attitude is seen as a condition to create behavioral intention of tourist. That explains the reason why visitors will choose a destination instead of another destination for their trip. Decrop (2006) explored the importance of consumer orientation, emotional motivation, and action to control consumer behavior. Moreover, the attitude is an effective predictor of upcoming travel decisions, including the choice of destination for travel trip (Jalilvand and Samiei, 2012).

According to the TPB (Theory of Planned Behavior) of Ajzen (1991), the behavioral intention is effected by the attitudes, subjective standards of visitors and other control factors. With inputs from related previous studies as reviewed above Um and Crompton, 1992; Fodness and Murray 1997; Hill, 2000, Lehto et al., 2004; Lee, 2007; Jacobsen and Munar, 2012), we proposed a research model on the relationship among tourist experience (TE), inner motives (TM) and attitude towards destination (TA). Therefore, the author proposes:

- H1: Travel experience (TE) affects tourists' motivations (TM) for travelling to the destination:  $TE \square TM$ .

- H2: Travel experience (TE) affects tourists' attitudes (TA) towards the destination:  $TE \square TA$ .

- H3: Inner motives (TM) affects tourists' attitudes (TA) towards the destination:  $TM \square TA$ .

### **3. Methodology**

#### ***Sampling design and contextual research***

*Firstly*, target population of this study is the people are living in Hanoi, Vietnam. The sampling design was based on the combination of stratified sampling and convenience sampling method. Depend on the perspectives of people are living in Hanoi; the authors choose Hue as target destination by the following specific reasons: (1) the consideration of factors must put in the context of a particular destination; (2) Hue is destination featuring type of cultural tourism – these is type of tourism typical of tourism in Vietnam. Hue is a city of around 350,000 people, famous for its cultural and historical sites (having two UNESCO World Heritage Sites). We distributed 518 respondents who have been Hue comprises of the sample for this study.

## ***Measurement***

Each variable construct was measured using multiple items. The survey consisted of five parts covering the following issues: (1) tourist experience (six items were adopted from Jalilvand et.al. (2012)); (2) tourists' personal motives (eighteen items were adopted from Tezak et.al., (2012), Muntinda và Mayaka (2012), Oppewal et.al., (2015), Yoon and Uysal (2005)); (3) attitude toward destination (three items were adopted from Jalilvand et. al., 2012). Item generation began with theory development and a literature review and all items were modified by the researcher. A seven-point rating scale (from 1 strongly disagree to 7 strongly agree) was employed to measure constructs.

## ***Data analysis***

Data collected from the main survey was analysed using the Statistical Package for Social Sciences (SPSS) and Analysis of Moments Structure (AMOS) software. Specifically, we used SPSS to generate descriptive and inferential statistics, and AMOS for the structural equation modelling procedure (Anderson & Gerbing, 1988). Structural equation modelling is one of the most standard and popular methods in social sciences and has been widely applied in tourism research to test complex models with several dependent and independent variables (Nunkoo, Ramkissoon, & Gursoy, 2013).

## **4. Data analysis, findings and discussion**

### ***4.1. Respondent profile***

Participants in the study are diverse in terms of demographic characteristics. Almost of half of the survey respondents (47.5%) aged between 25 to 44 years old, while the rest was spilt between the 18-24 age group (25.7%) and the 44-65 group (26.8%). There were some respondents over 65 years old participated in the survey, however their questionnaires were not valid for the analysis, as either they could not recall the experiences, or they were not the main decision-maker of the trips. The study sample was over dominated by female (68.9%), this could be because females were more approachable for the survey. The majority of respondents are married, which may be related to their ages. Most respondents are full-time employed (over 90%), among which office-workers, businessman/ businesswoman, and researchers make up the largest segments (31.7%, 19.7%, and 19.1% respectively).

### ***4.2. Model analysis***

#### ***4.2.1. Exploratory factor analysis***

Owing to low Corrected Item-Total Correlation, HDC6 and HDC11 were eliminated; exploratory factor analysis (EFA) was checked to reduce the number of travel motivation constructs to a more manageable number of underlying factors.

Using Varimax rotation and a benchmark value for factor loading of 0.5 (Hair, 1995), we have identified a list of motivations for visiting Hue. Each of these factors has at least two significant loadings and a reliability measure of above 0.7 thus is satisfactory for the analysis. Analysis of EFA shows that tourist motivations are multidimensional concepts. The inner motives of Hue are perceived by the tourists based on three components: Exploration (EX), Relaxation and social interaction (RS) and New Things (NT). Our original hypotheses were therefore modified accordingly. Hypothesis H1 (TE $\square$ TM) were replaced by Hypotheses 1.1 (TE $\square$ EX), 1.2 (TE $\square$ RS), and 1.3 (TE $\square$ NT). Hypotheses H3 (TM $\square$ TA) were replaced by Hypotheses 3.1 (EX $\square$ TA), 3.2 (RS $\square$ TA), 3.3 (NT $\square$ TA). Hypothesis H2 continue to keep the relationship between Travel experience (TE) and tourists' attitudes (TA) towards the destination (TE $\square$ TA).

**Table 3: EFA results for Hue as a destination**

Measures	Factor loading	Mean	SD	Cronbach's $\alpha$
<b>Factor 1: Personal travel experience</b>		<b>5.040</b>		<b>.895</b>
Personal tourist experience makes me more confident in my destination choice. HKN6	.901	5.0560	1.63341	
I often base on my personal experience when making a decision to travel to a particular destination. HKN4	.896	5.2606	1.64782	
I often base on my personal experience to select an interesting destination. HKN3	.859	4.8127	1.42839	
I often based on my personal experience to ensure the destination choice is right. HKN2	.818	5.0734	1.47527	
If I did not have any travel experience, I would be very worried about my destination choice. HKN5	.790	4.9749	1.58613	
I often base on my personal experience to compare destinations. HKN1	.584	5.0618	1.53365	
<b>Factor 2: Attitude toward destination (TA)</b>		<b>5.033</b>		<b>.743</b>
Hue overall is interesting destination HTD3	.865	5.2239	1.30764	
Hue overall is valued destination HTD2	.829	4.9788	1.21783	

Measures	Factor loading	Mean	SD	Cronbach's $\alpha$
Hue overall is good destination HTD1	.742	4.8958	1.24578	
<b>Factor 3: Exploration</b>		<b>4.875</b>		<b>.771</b>
I look for new experiences and feelings. HDC4	.816	4.8069	1.31697	
I want to get to know different cultures. HDC1	.844	5.0174	1.39829	
I want to get to know the uniqueness of different sub-cultures. HDC14	.620	4.6757	1.18462	
I want to look for fun places and enjoy the luxury HDC5	.626	5.0000	1.28222	
<b>Factor 4: Relaxation and social interaction</b>		<b>4.647</b>		<b>.866</b>
I choose a destination according to current trends HDC13	.752	4.7683	1.55256	
I choose a destination to satisfy my curiosity. HDC12	.752	4.7413	1.39725	
I want to visit my friends and families. HDC9	.721	4.2490	1.73310	
I want to rest and relax. HDC10	.714	4.9595	1.54504	
I want to show my status. HDC8	.704	4.2799	1.36012	
I want to improve my health. HDC7	.728	4.1525	1.30980	
I want to escape from my daily routines. HDC15	.718	5.0347	1.48453	
I want to interactions with my family HDC16	.584	4.9903	1.49852	
<b>Factor 5: New things (NT)</b>		<b>4.265</b>		<b>.763</b>
I want to meet with people who share common interests with me HDC2	.860	4.2510	1.47012	
I want to experience some adventurous feelings HDC3	.838	4.2799	1.62215	

(\*1=totally disagree, 7= totally agree. Total variance explained = 64.08%. KMO measure = 0.80, Barlett's test of sphericity  $p < 0.000$ )

#### 4.2.2. Confirmatory factor analysis

A confirmatory factor analysis (CFA) was followed to ensure construct reliability and validity. The construct “New Things - NT” and some items were eliminated because its covariance index was too high with other constructs and each item as well. The model’s goodness-of-fit was assessed by several indices (Table 3). The model fits well to the data collected with all measures exceeding the commonly recommended threshold (Browne & Cudeck, 1993). All items had high loadings with *t*-values being significant ( $p < 0.001$ ), indicating strong relationship to their underlying construct.

**Table 3: Goodness-of-fit indices of CFA**

Model	$\chi^2$	<i>p</i>	NFI	TLI	CFI	CMIN/df	RMSEA
Hue	222.193	0.000	.932	.943	.956	2.710	.058

(\*NFI: normed fit index, TLI: Tucker Lewis Index, CFI: comparative fit index, CMIN/df: minimum discrepancy: RMSEA: root mean square error of approximation)

#### 4.2.3. Structural equation model and hypotheses tests

The overall structural model included nine latent variables. The direct effects from these variables were all significant at  $p < 0.05$ . Based on the results of path analysis, the hypothesized relationships were tested. Only significant paths were included in the overall structural model.

**Table 5: Goodness-of-fit indices of SEM**

Model	$\chi^2$	<i>p</i>	NFI	TLI	CFI	CMIN/df	RMSEA
Hue	262.802	0.000	.920	.928	.943	3.166	.065

(\*NFI: normed fit index, TLI: Tucker Lewis Index, CFI: comparative fit index, CMIN/df: minimum discrepancy: RMSEA: root mean square error of approximation)

The model’s goodness-of-fit was assessed by several indices (Table 5). The model fits well to the data collected with all measures exceeding the commonly recommended threshold (Browne & Cudeck, 1993). All items had high loadings with *t*-values being significant ( $p < 0.001$ ), indicating strong relationship to their underlying construct.

**Table 6: Path analysis results**

Hypothesis	Path	Estimate	S.E.	C.R.	P	Label
H1.1	TE $\square$ EX	-.014	.033	-.294	.769	Rejected
H1.2	TE $\square$ RS	.140	.031	2.888	.004	Supported
H2	TE $\square$ TA	-.035	.035	-.693	.488	Rejected
H3.1	EX $\square$ TA	.402	.059	7.005	***	Supported
H3.2	RS $\square$ TA	-.035	.055	-.692	.489	Rejected

Note: TE: travel experience, EX: exploration, RS: relaxation and social interaction, TA : Attitude toward destination

- Hypotheses on tourist experience (H1, H2)

Depend on the path analysis results above, past travel experience of Hanoi residents do not effect their exploration motive and attitude toward Hue destination as well owing to  $P\_value > 0.05$ . Otherwhile travel experience significantly affect their motivation for relaxing and social interaction at  $p < 0.05$  or the effect of travel experience on relaxation and social-interaction became significant. In other words, visitor has more travel experience to Hue destination, they more create their own relaxation and social interaction.

- Hypotheses on tourist attitudes (H3)

Tourist motivations especially the desire for exploration significantly affect their attitudes at  $p < 0.00$  and got the most influence with  $\beta = 0.420$ . It means, the tourist has more motivation for exploring the different cultures and sbu-culture in Hue destination, they have more positive attitude or prefer this cultural destination. This resembles findings from Yoon and Uysal (2005), Jang and Wu (2006), Bui and Jolliffe (2011), Hsu et. al. (2009), Sangpikul (2008). Meanwhile, other motivations such as relaxation and social interaction are not influential on tourist attitudes that differ with research results from Mutinda and Mayaka (2011). Our findings confirm Correia and Pimpao (2008)'s study on tourist behaviour at a cultural destination.

## **5. Solutions and conclusion**

### **5.1. Solutions**

*Solutions for quality improvement at destinations in line with demands and main motives during the travel of tourists.* It is shown from research results that Hanoians in general and local tourists in particular have demands of enjoying a tourism product which is made of many elements. Generally, tourists desire that their demands of discovery and relaxation will be satisfied when they arrive Hue. Especially, the motive of discovering unique characters of resources and regional culture has strongly affect the attitude and commitment of selection towards this destinations. Firstly, management and exploitation agencies of those destinations should preserve special characters and exploit the beauty of resources; simultaneously create new image of destinations in the eyes of tourists by adding and improving services. Secondly, travel agencies have built up many tourism programmes such as combination of beauty spots with same topics or diversified topics in order to serve different tourists; develop appropriate forms of tourism.

*Solutions for building up the brand name of destinations.* Firstly, it is suggested to raise awareness on the role of the brand name of destinations in tourism business. State management agencies on tourism at central and local levels should

strengthen the effectiveness of propaganda and consider it as a focus task of the tourism industry and the whole society. Secondly, it is suggested to choose a reasonable model of brand name and build up a brand strategy in a professional manner with detailed schedule. It is suggested to pay attention to management of brand name and regular assessment on results of brand development to offer reasonable additions and adjustments. Thirdly, it is suggested to build up the brand name of the destinations associated with the brand name of the region, area, national beauty spots to determine a general orientation for the product system. Fourthly, it is suggested to effectively promote brand communication. The effectiveness may be expressed through accurate and sufficient contents in line with targeted customers and selection of information channels/ sources which are approached and trusted by them.

## **5.2. Conclusions**

The study helps systematize basic theoretical issues on the behavior of tourists, with clarification of tourists' mechanisms and psychology on the selection behavior of destinations through models on making decisions on destination options, psychosocial model on tourists behavior, the model of factors affecting the selection of tourists. Accordingly, relevant concepts are also clarified with definition of inner meanings through specific criteria such as travel experience, inner motives and tourist attitude toward destination. Besides, research results have also helped managers of beauty spots in Hue have accurate information and deeper understanding on tourist attitude and behavior to offer measures for attracting tourists to local destinations and appropriate policies or strategies for effective exploitation of strengths of destinations. Especially, the model on groups of factors which have effects on destination in association with types of cultural tourism may be applied and expanded to local and international destinations with similar characteristics.

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**PART 4: EDUCATION AND SCOCIAL  
DEVELOPMENT**



# THE POTENTIAL OF APPLYING BLOCKCHAIN TECHNOLOGY TO SUPPORT MANAGEMENT ACTIVITIES AT UNIVERSITIES IN VIETNAM

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## **Abstract**

*Blockchain technology has been applied widely in many countries in different fields such as banking, finance, insurance, health, production, retailing... However, the application of this technology in education seems to be still limited, especially in Vietnam. This paper will introduce an overview of blockchain technology as well as propose some recommendations on the potential of applying this technology to support management activities at universities in Vietnam. Finally, the advantages and disadvantages of deploying blockchain technology at universities in Vietnam will also be mentioned.*

**Keywords:** *Blockchain technology, management activities, universities in Vietnam.*

## **1. Introduction**

Blockchain technology was first introduced in 1991 by Stuart and Stornetta (Stuart and Stornetta, 1991). The purpose of this technology is to prevent illegal data editing as well as to share data for all parties involved. Unfortunately, right after being introduced, blockchain technology almost falls into oblivion, in other words, almost nobody or organizations apply this technology until there is a person or a group of people who use the nickname Satoshi Nakamoto applied blockchain technology to introduce the concept of Bitcoin, a cryptocurrency created in January 2009 (Angela and Liana, 2014).

So, what is a blockchain? In fact, a blockchain is a distributed database of records or public ledger of all transactions or digital events that have been executed and shared among participating parties. Each transaction in the public ledger is verified by consensus of a majority of the participants in the system. Once entered, information can never be erased. The blockchain contains a certain and verifiable record of every single transaction ever made (Crosby et al., 2016). Here it is needed to discuss a little about the ledger. The ledger is the principal book or computer file for recording and totalling economic transactions measured in terms of a monetary unit of account by account type, with debits and credits in separate columns and a

beginning monetary balance and ending monetary balance for each account. It means that all daily economic transactions will be recorded in the ledger. Similar to the ledger, blockchain also can record all daily economic transactions. But, the limitations of the ledger are: Firstly, not all stakeholders can own the ledger; secondly, the content reflected the same transaction in the ledgers of all parties is not always identical because the content can be modified and the other parties cannot monitor it. In short, the same transaction but the data recorded in the ledgers of the stakeholders may be different, that is the problem. Blockchain technology has overcome these limitations since all stakeholders have right to own an identical blockchain, and the illegal modification of data is almost impossible because the blockchain records are maintained by a decentralised network, where all records are approved by consensus. Thus, it can be seen that the benefit of blockchain technology is that in addition to acting as a public ledger to record all economic transactions arising in order of time, this technology is also bringing the transparency of data as well as preventing the illegal data manipulation.

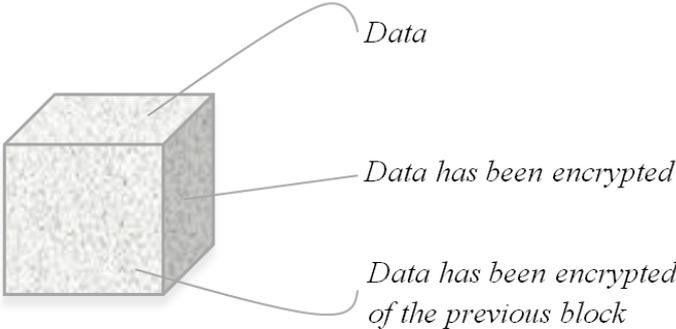
**2. Working of Blockchain Technology**



**Figure 1. Blockchain technology**

*(Source: Author's illustration)*

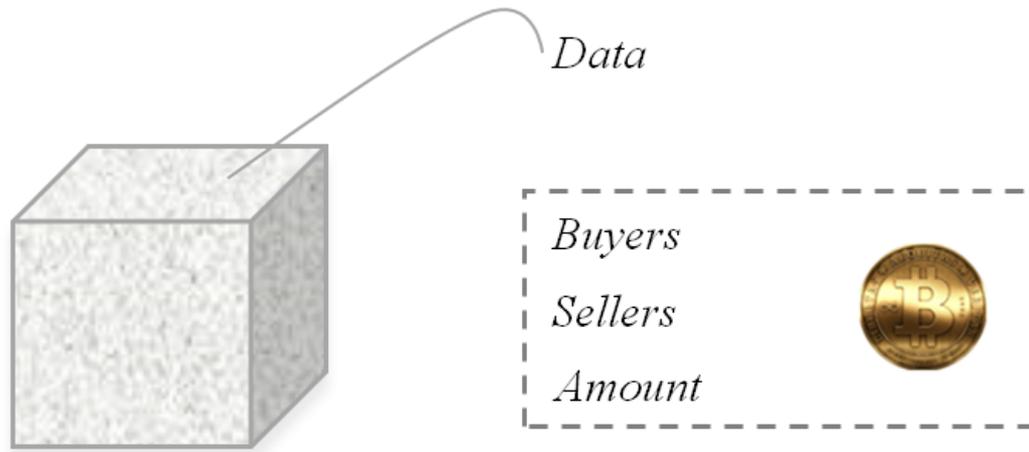
The Figure 1 shows a simple way of blockchain technology. It is a series of blocks that are closely linked. Each block will contain three components. The first is the data, the second is the data of the block that has been encrypted using the hash function, and the last is the encrypted data of the previous block (Figure 2).



**Figure 2. The components of each block**

*(Source: Author's illustration)*

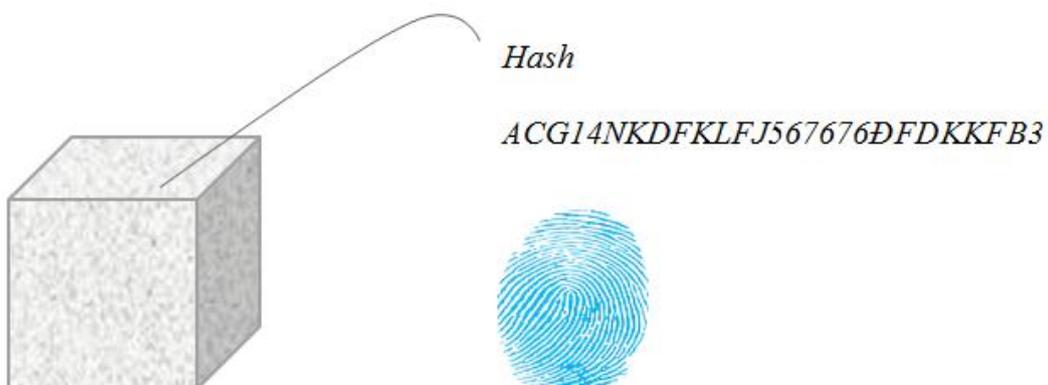
The type of data contained in each block depends on the blockchain technology applied in each field. For example, for Bitcoin blockchain, the data in each block is detailed transactions related to the buying and selling of cryptocurrency. It could be data about buyers, sellers, cryptocurrency being traded as well as the amount of digital currency newly dug. Figure 3 simply describes the data contained in a block of Bitcoin blockchain.



**Figure 3. The data contained in a block of the Bitcoin blockchain**

*(Source: Author's illustration)*

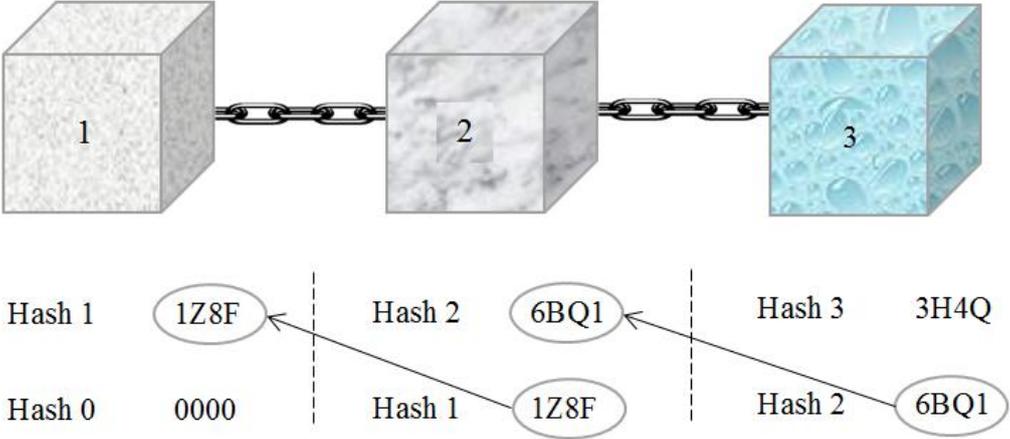
Each block also contains data encrypted by the hash function. The data after being encoded will convert into the string of characters as described in the Figure 4. It is possible to visualize the data after being encoded as a fingerprint. This shows the uniqueness of the data contained in each block, in other words the data contained in each block of the blockchain is absolutely different. If the data of a block is edited, the result of the hash function will also be changed. So it can be seen that using hash functions is very effective in checking whether the data of a block is edited or not.



**Figure 4. Data of a block after being encrypted**

*(Source: Author's illustration)*

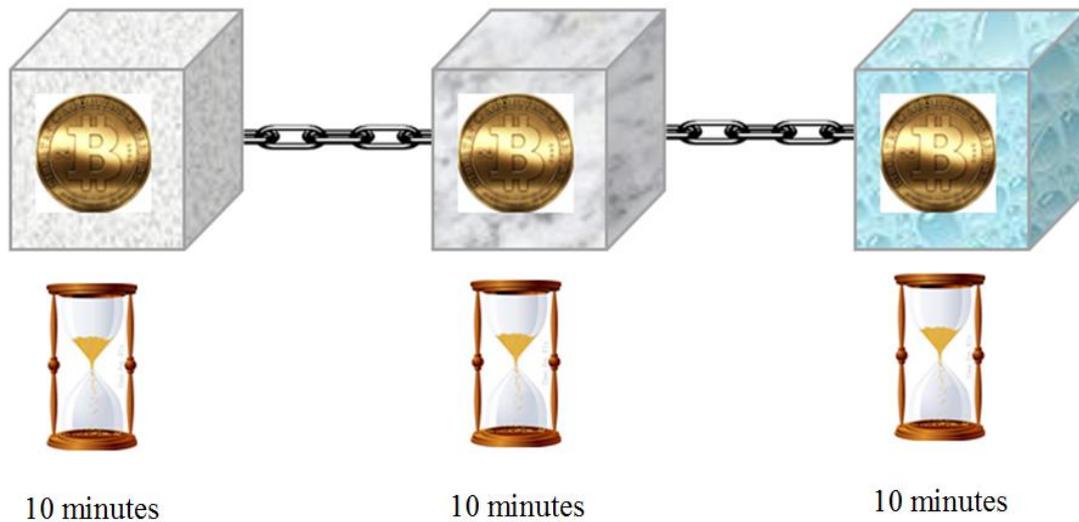
The third component in each block is the encrypted data of the previous block. This is an important factor to create a chain of links as well as to ensure the sustainability of each Blockchain. Figure 5 illustrates the coherence of the first three blocks of a block chain.



**Figure 5. The connection between blocks through encrypted data**

*(Source: Author's illustration)*

As mentioned above, each block contains its data, the encrypted data of the previous block, and the data of the block that has been encrypted. Therefore, the third block can point to the second block. Similarly, the second block can point to the first block. However, the first block cannot point to a previous block. Hence, this block is also called the root of the blockchain. Supposing someone deliberately edited the data of second block, this activity will result in the hash function of this block being changed accordingly. Because of that, the third blocks will become invalid block since it does not contain the encrypted data of the previous block. Thus, changing the data of a block will result in all subsequent blocks becoming invalid. This mechanism will help detect whether the data has been changed illegally. However, if only using this protection mechanism, it is not completely guaranteed that the data cannot be illegally edited because today the computer processing speed is very high, super computers can calculate hundreds of thousands of hash functions in a second. Therefore, hackers can completely edit the data of a block and recalculate the hash function for all subsequent blocks quickly to ensure that the entire blockchain is still valid. Consequently, to prevent data editing illegally, blockchain technology has been added a protection mechanism called proof - of - work. This mechanism allows slowing down the process of creating a new block. In the case of Bitcoin, after every 10 minutes, a new block will be created and connected to the chain (Figure 6).



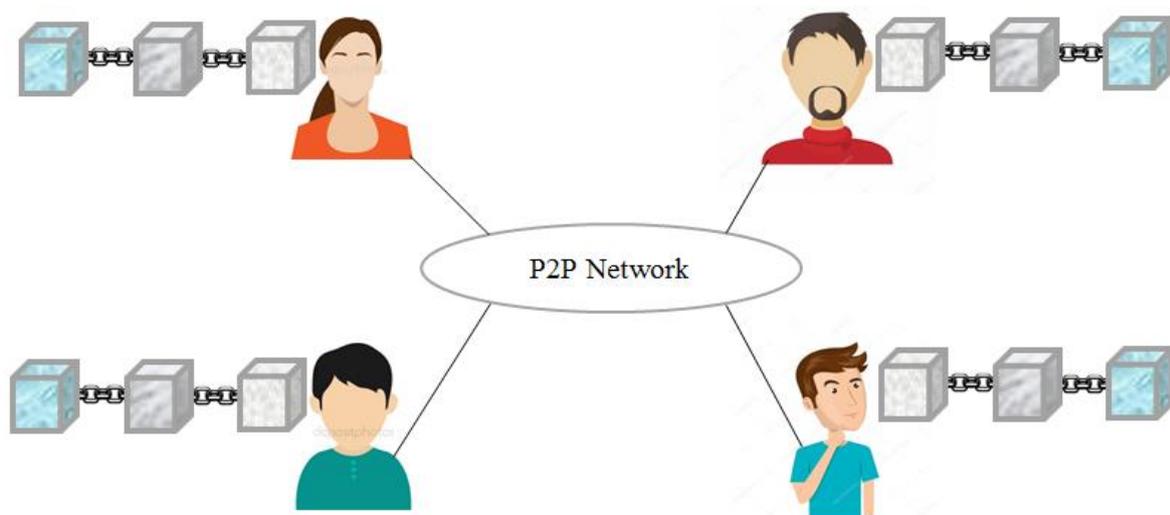
**Figure 6. The expected block time in the Bitcoin blockchain**

*(Source: Author's illustration)*

With this protection mechanism, changing the data of a Bitcoin block is extremely difficult because if someone wants to modify the data of a block, he or she must recreate all subsequent blocks. The difficulty is that, these blocks cannot be recreated immediately since only after every 10 minutes a new block is formed. Moreover, he or she has to calculate how the proof - of - work of each block must match exactly 10 minutes, and this is almost impossible.

So to prevent the illegal data modification, blockchain technology has used a combination of the two protection mechanisms: Firstly, using the result of hash function to link between two adjacent blocks so that the latter block can monitor the data integrity of the previous block; secondly, use the proof - of - work mechanism to slow down and increase the level of difficulty for the process of creating a new block. However, combining these two protection mechanisms is still not all that blockchain technology uses to inhibit data modification illegally. To ensure data cannot be arbitrarily edited, blockchain technology also uses an additional protection mechanism to make data more transparency and publicizing. It is instead of just having a blockchain management entity, blockchain technology has used peer-to-peer networks to connect all members, and each member is owned with a version of blockchain with identical content (Figure 7). It is understood that, blockchain technology works based on the consensus of all the stakeholders. All the members will agree on which block is valid and which block is invalid. If the data of a block is illegally changed, that block will be automatically rejected by the system.

So far we have understood the mechanisms against blockchain's illegal data editing, which are:



**Figure 7. The mechanism of data transparency of blockchain technology**

*(Source: Author's illustration)*

1) Use the encryption result of the hash function to link between two adjacent blocks so that the following block can monitor the data integrity of the previous block.

2) Use proof - of - work mechanism to slow down and increase the level of difficulty for the process of creating a new block.

3) Publicize and transparent blockchain's data for all parties involved. Each member of the system owns an identical blockchain, any change of data needs to get consensus from all the stakeholders.

With the simultaneous combination of all above three protection mechanisms, it is almost impossible for someone to change the blockchain data illegally. Because of the above outstanding features, blockchain has become one of the most interested technologies today.

### **3. The Potential of Applying Blockchain Technology to Support Management Activities at Universities in Vietnam**

In recently, blockchain technology has been mentioned frequently in official media in Vietnam. The potential of applying this technology is very promising, especially in areas, such as banking, finance, manufacturing, supply chain management, public services, health, education... In the field of education, particularly in higher education, blockchain technology should be experimentally applied to support the following management activities:

*Supporting the activities related to entrance examination:* The entrance exam of universities plays a very important role. It can be said that this is one of the prerequisite factors directly affecting the quality of training as well as the brand name

of each school. Therefore, ensuring quality of freshmen is one of the concerns of university managers. Currently, the enrolment of schools is mainly based on the results of the National High School Examination. However, in addition to the advantages that have been recognized by society, the reliability and fairness of this exam is still a question mark when still existing the fact that the test scores of the contestants can be illegally manipulated. To overcome this unexpected situation, blockchain technology should be deployed at scoring process to confirm the reliability of the National High School Exam. Based on the operation mechanism of blockchain technology, all stages of the scoring process of the National High School Exam will be public, shared and supervised by all stakeholders. Therefore, the ability of illegal data editing is almost impossible. This will bring the fairness to all candidates as well as the confidence in the quality of entrance admissions for universities.

*Supporting the student data management:* It is very convenient if all student data, including diplomas, certificates, transcripts,... are managed based on blockchain technology. This brings openness and transparency to all stakeholders including students, faculty as well as other departments of the training institution. Moreover, due to the data protection mechanism of blockchain technology, the illegal editing of student data is almost impossible. Finally, this management approach will bring more convenience to students when applying for their jobs. Specially, students do not need to submit notarized copies of diplomas, certificates, and transcripts to employers but simply just providing links, public key, then employers can access to the university database to see all student data. This will also contribute to reducing problems using fake diplomas and certificates which are considered quite popular today.

*Supporting the activities related to reward and punishment on student performance:* Reward and punishment play an important role to motivate the students towards learning. These activities contribute to educate students to promote the self-discipline in learning as well as strictly comply with the regulations in the school. Therefore, it would be better if the reward and punishment system work to ensure accuracy, fairness, publicity, democracy, not sensible prejudice, and timely. However, in fact, reward and punishment activities in most schools currently do not meet the above criteria. The reason is that almost rewarding and punishing processes of schools are done manually. To solve this problem, blockchain technology should be applied. Specifically, from the first days of enrolment, between schools and students need to deploy a smart contract based on blockchain technology applied to

the entire learning process. This contract includes all the terms that has been programmed and fully automated. At any time, schools and students can monitor the work performed as well as the progress of the contract, ensuring everything is clear and transparent. Moreover, in order to implement the rewarding and punishing activities well, students will be provided an electronic wallet functioning like a bank account. Whenever students achieve high scores in doing scientific researches or other activities launched by schools, a number of corresponding reward points will be automatically transferred to the students' electronic wallet. Conversely, if students violate the university regulations, immediately a certain number of points will be deducted from the existing point fund in the students' e-wallet. At the end of the school year, based on the total number of points in the e-wallet, students may know whether they will be granted scholarships, tuition exemptions, or get a temporary suspension decision. In short, if applying blockchain technology to support student rewarding and punishing activities in the form of implementing the smart contracts, the accuracy, fairness, publicity, and timeliness will be ensuring and then contributing to improving the effectiveness of student management in particular as well as the quality of university performance in general.

*Supporting the evaluation of faculty performance:* Comprehensive and accurate assessment of faculty performance is one of the important factors to encourage the striving of teachers, contributing to improving the quality of teaching and learning in higher education institutions (Nguyen Thi Tuyet, 2008). However, in reality, the evaluation of faculty performance at universities in Vietnam is still more subjective and sometimes inaccurate (Nguyen Duc Chinh and Nguyen Phuong Nga, 2006). Therefore, in order to have more information channels to improve the accuracy when evaluating faculty performance, it is advisable to sign a smart contract between schools and the lecturers. Specifically, before the start of the new school year, between the faculty and the schools need to sign a smart contract including terms describing in detail all expected teaching and scientific research activities. As soon as the new school year begins, all the lecturers' activities will be recognized, digitized and recorded based on blockchain technology. At any time, schools can monitor and supervise the work that teachers have been doing. Along with that, schools and lecturers can also adjust and supplement some terms of the contract if necessary. Whenever a job is done successfully, a number of corresponding reward points will be automatically transferred to the teacher's e-wallet. On the contrary, every time lecturers violate the contract, a certain amount of points will be deducted

immediately at their personal e-wallet. At the end of the school year, based on the total points in the e-wallet of each lecturer as well as their entire operation process recorded and stored in the blockchain, schools can assess the level of completion of the lecturer's work objectively, fairly and more accurately.

#### **4. Discussion and Conclusion**

In the context of many countries are focusing on building and developing the digital economy, applying blockchain technology seems to be an inevitable trend since this technology converges outstanding features such as preventing illegal data editing, publicizing data based on the consensus of all stakeholders, and eliminating unnecessary intermediaries through the implementation of smart contracts. Besides, Vietnam is considered to have high quality human resources in information technology. Therefore, the potential of applying blockchain technology in Vietnam is very promising. Moreover, this technology currently is also very interested in Vietnam. Evidence is that, in recently, the term blockchain technology is mentioned more often in the official media. Along with that, many seminars on blockchain technology were also organized, gathering a large number of participants from the government members, heads of ministries, as well as the leaders of start-up companies.

With the above favourable factors, the investment in research and application of blockchain technology will promise to open a breakthrough in the quality of teaching, learning, and management of higher education institutions in Vietnam. In the initial stages, blockchain technology should be experimentally applied to support the management activities, such as the activities related to entrance examination; student data management; reward and punishment on student performance; and the assessment of faculty performance. However, in order for these proposals to be realized, it is needed to have a clear and specific legal framework for the development of blockchain technology in Vietnam.

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# THE RELATIONSHIPS AMONG OVERALL E-LEARNING SERVICE QUALITY, E-LEARNING STUDENT TRUST, AND E-LEARNING STUDENT LOYALTY: EVIDENCE IN VIETNAM

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## **Abstract**

*E-learning is emerging as the new paradigm of modern education. This study examines the relationships among overall e-learning service quality, e-learning student trust, and e-learning student loyalty in the context of Vietnam. Survey data collected from 690 students in 12 universities in Hanoi were analyzed by regression analysis. The results indicated that the overall e-learning service quality was positively related to e-learning student trust, which in turn positively influences e-learning student loyalty. Also, overall e-learning service quality has a direct effect on e-learning student loyalty.*

**Keywords:** *E-learning service quality, E-learning student satisfaction, E-learning student loyalty, Vietnam*

## **1. Introduction**

### **The rationale of the study**

E-learning is the use of telecommunication technology to deliver information for education and training. With the progress of information and communication technology development, e-learning is emerging as the paradigm of modern education. The great advantages of e-learning include liberating interactions between

learners and instructors, or learners and learners, from limitations of time and space through the asynchronous and synchronous learning network model (Katz, 2000; Katz, 2002; Trentin, 1997). E-learning's characteristics fulfill the requirements for learning in a modern society and have created great demand for e-Learning from businesses and institutes of higher education (Wu et al., 2006).

In Vietnam, the number of Internet users has been increasing in the past decade, accounting for more than 50% of the total population (CIEM, 2018). Besides, the use of mobile phones (e.g., smart phones) connected to the Internet is increasingly becoming popular. Vietnam has about 129 million mobile phone subscribers (CIEM, 2018). The ubiquity of the Internet, technology-savvy young people, and a series of economic reforms implemented by the Vietnamese government after joining the World Trade Organization in 2007 create favorable conditions for e-business in general and e-commerce in particular in Vietnam to grow rapidly (Pham & Doan, 2014). The rapid growth of e-business/e-commerce also motivates the Vietnamese government and Ministry of Education and Training to invest in information technology and Internet infrastructures for Vietnam's higher education system to quickly integrate into the global higher education system, including e-learning (VDIC, 2012). Currently there are about 20 universities out of 278 higher education institutions (with 2,061,641 students) providing online education programs in Vietnam, and this number is expected to increase in the future (Vietnam's Ministry of Education and Training, 2015). This shows that e-learning is still at the beginning stage of its development and has a great potential in Vietnam, requiring universities to constantly improve learning quality in general and e-learning quality in particular to bring about student satisfaction and loyalty. However, there has so far been no systematic and comprehensive research on this topic in Vietnam.

Therefore, this study aims to (1) explore the relationship between overall e-learning service quality and e-student loyalty; (2) the relationship between overall e-learning service quality and the belief of e-learning students; (3) the relationship between students' e-learning trust and e-student loyalty.

### **Literature review**

According to Deghan (2006) the relationship between customers and sellers after the first transaction is defined as customer loyalty. It can be seen that loyalty is approached in two ways. According to the behavioral approach, customer loyalty is brand selection behavior. According to the attitude approach, attitude loyalty is understood as the attitude of the customer to a certain member, this represents psychological constraints, intentions to buy or use the service of the supplier, communicate consciously with others about the products and services they have used.

Loyalty is represented by three aspects: commitment, trust and positive word of mouth. In college, education is considered a service, students are customers of this service, so the E-learning student loyalty will be regarded as loyalty of customers using educational services. Thus, it can be understood, E-learning student loyalty is the ability to continue buying other courses or referring others to online courses after first taking an online course. They will buy back, buy more, and can accept higher prices without switching to other suppliers.

Researchers have long examined the factors that lead to student loyalty in the traditional learning environment (Parves & Ho Yin, 2013). Some researches are focused on how key elements of overall e-learning service quality affect e-learning student loyalty. The existence of a relationship between overall quality of service and higher retention of customers indicates that service quality has an impact on individual consumer behavior (Zeithaml et al., 1996). Wolfinbarger & Gilly (2002) argue that service quality is the important predictor of loyalty and intention to repeat purchases. Besides, Long Pham (2018) argues that there is a positive impact between overall service quality and loyalty, and research results have also shown the existence of this relationship. Therefore, this study hypothesizes:

**H1. Overall e-learning service quality has a positive effect on e-learning student loyalty**

The current studies show that, in the higher and higher competitive online environment, customers can change the service suppliers, in order to improve the situation, the suppliers need to keep the overall service quality stably for the purpose making the customer trust well Eisingerich & Bell (2008). In addition, The result of Akter and D'Ambra (2012) argue that service quality has a positive effect on trust in the online environment. Therefore, this study hypothesizes:

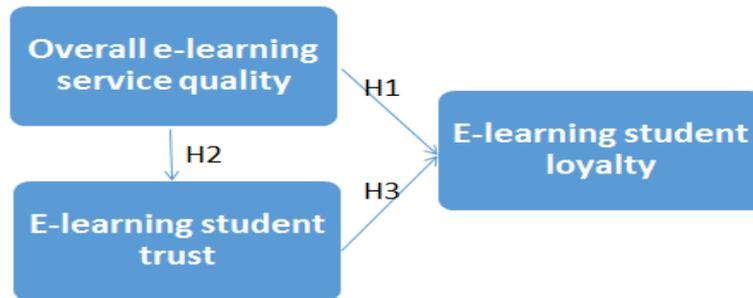
**H2. Overall e-learning service quality has a positive effect on e-learning student trust**

Parasuraman et al. (1985, 1988) used trust (with assurance) as a factor affecting service quality. Gremler and Brown (1996) propose trust as a premise of customer loyalty. Gwinner et al. (1998) proposed trust as a reliable benefit appreciated by customers in long-term exchange relations with the services of companies. These findings suggest that when customers maintain long-term contractual relationships with their online service providers, trust may be a strong incentive for commitment or loyalty of customer relationship.

Thereby, analyzing this factor contributes to the hypotheses:

**H3. E-learning student trust has a positive effect on e-learning student loyalty.**

**Conceptual framework and hypothesis development**



*Fig. 1 Conceptual model*

Sources: According to Long Pham (2018) and Kim, J., Jin, B., & Swinney, J. L. (2009)

Trust is as significant a factor for successful online interactions as it is in offline communities.

Trust is as significant a factor for successful online interactions as it is in offline communities

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**2. Method**

**Sample, data collection procedure**

The following parameters guided our sample selection. First we wanted students who had attended e-learning, since we were interested in the entire e-learning experience, not just interaction with the website. Secondly, we wanted our respondents from both social science and engineering science. Respondents were

selected using convenience sampling method - quota sampling at 12 different universities in Hanoi. At the universities, we randomly approached the students in the library, student lounge or cafeteria, and visited classes with the professor's permission and asked the students to fill out the survey during the class period. Before official data collection, we interviewed 25 students by explaining the purpose and content of the survey, after change suitably, we begin the research lasting two months February and March in 2019. After the official data collection, 880 questionnaires were initially distributed and 690 usable data were obtained after discarding 190 questionnaires due to incompleteness of the responses.

**Table 1: Sample research**

		<b>Frequency</b>	<b>%</b>
<b>Gender</b>	Male	294	42.61%
	Female	396	57.39%
<b>University Year</b>	Freshman	200	28.99%
	Sophomore	181	26.23%
	Junior	226	32.75%
	Senior	83	12.03%
<b>Job</b>	Full -time	29	4.20%
	Part- time	272	39.42%
	Unemployed	389	56.38%
<b>Payer</b>	Pay themselves	216	31.30%
	Pay a part	64	9.28%
	Family	367	53.19%
	Organisations	30	4.35%
	More	11	1.59%
<b>Number</b>	<5h/ week	398	57.68%
	5-<10h/ week	225	32.61%
	10-<15h/ week	45	6.52%
	> = 15h / week	22	3.19%
<b>The number courses attended</b>	1-3	582	84.35%
	4-6	75	10.87%
	>6	33	4.78%
<b>Total</b>		<b>690</b>	<b>100%</b>

*Sources: Calculation of authors*

### Data analysis

Based on the support of SPSS and AMOS version 20 software with the following steps: (1) Statistics describe the observed variables of the scale; (2) Evaluate reliability; (3) Test the value of the scale by exploratory factor analysis (EFA); (4) Correlation statistics; (5) Regression analysis.

### 3. Results

#### Statistics describe the observed variables

The overall quality of service with an average value of 3,552, shows that students in schools are having a positive assessment of the overall service quality in which the quality of documents, instructors and service providers is highly evaluated with mean values of 3.64, 3.61 and 3.54 respectively. Trust with a mean of 2,918 with a variance of 0.87, shows that students are having a positive assessment of trust. Loyalty with a mean value of 3.55 and a variance of 0.454. This shows that student loyalty to the online training system is at a good level and the volatility is very small. Measures of the impact of fidelity variable have an average greater than 3 and a variance smaller1. Eliminate LTT6 due to the LTT6 and LTT5 scale because of the same mean and variance

**Table 2: Mean and Variance of factors**

Factor		Mean	Variance
<b>CLC</b>	<b>Overall e-learning student quality</b>	<b>3.5526</b>	<b>.64970</b>
CLC1	In general, the e-learning program meets the expectations of learners.	3.54	.865
CLC2	In general, the e-learning program is a quality program.	3.51	.812
CLC3	In general, the quality of support and administration services is well implemented	3.56	.809
CLC4	In general, the quality of online instructors is good	3.61	.822
CLC5	In general, the e-learning company has good reputation	3.57	.822
CLC6	In general, the document system is well prepared	3.64	.796
CLC7	In general, the service provider performs good security and privacy	3.45	.891
<b>NT</b>	<b>Trust</b>	<b>2.9181</b>	<b>.87509</b>
NT1	I am willing to provide personal information to online service providers.	3.09	.946
NT2	I am willing to provide my credit card number to most online service providers.	2.75	.994

Factor		Mean	Variance
NT3	I am willing to pay in advance for buying e-learning courses.	3.26	.915
NT4	Online providers have a high level of expertise in their industry.	3.47	.771
NT5	The online service provider provides full commitment	3.51	.842
<b>LTT</b>	<b>Loyalty</b>	<b>3.5513</b>	<b>.64953</b>
LTT1	I am committed to join the program to the end	3.49	.808
LTT2	I am ready to recommend the program to my friends	3.45	.789
LTT3	I will continue to participate in other online course	3.52	.805
LTT4	I will recommend online courses that have joined for friend	3.75	.827
LTT5	I am willing to comment if I find the online course have problems	3.55	.837
LTT6	I believe that choosing the e-learning program is a right and suitable choice for me	3.55	.837

*Sources: Calculation of authors*

### Evaluate reliability

Table 3 shows that all factors have internal consistency, Cronbach's Alpha coefficients are higher than 0.7 (the minimum is 0.759 reliability), the observed variances of each factor have Item-Total correlation are interconnected and a good measurement scale.

**Table 3: Reliability Statistics**

Factor	Cronbach's Alpha (N of items)	Corrected Item-Total Correlation	Cronbach's Alpha (Minimum - maximum)
Loyalty	0,892 (6)	0,705(LTT1)	0,858-0,892
Overall e-learning quality	0,894 (7)	0,713(CLC3)	0,873 -0,884
E-learning student trust	0,806( 5)	0,620 (NT1)	0,759-0,776

*Sources: Calculation of authors*

### Exploratory Factor Analysis

Cronbach's Alpha is a method of assessing the reliability of scales. The EFA exploratory factor analysis method is used to evaluate the convergence of each factor scale. In this analysis step, the observed variables that do not meet the factor load factor greater than 0.5 will be removed to keep the scales with high adhesion. EFA analysis does not rely on the relationship between dependent variables and

independent variables but only on the correlation between variables, so we decided to analyze EFA all variables at the same time.

After removing NT3, NT4 and NT5 variables, the final results are obtained as follows: KMO coefficient = 0,925 > 0,5 and Bartlett's testing with sig = 0,000 < 0.05 proving that the observed variables are Overall correlation and relevant for EFA implementation. The number of factors drawn is 7 in accordance with the original expected number, all observed variables have factor loading factors that meet conditions greater than 0.5.

**Table 4: Results of Exploratory Factor Analysis**

Variable	Factor Loading		
	Factor 1	Factor 2	Factor 3
CLC6	.874		
CLC4	.779		
CLC3	.705		
CLC1	.679		
CLC7	.642		
CLC5	.640		
CLC2	.625		
LTT3		.882	
LTT1		.748	
LTT5		.683	
LTT2		.678	
LTT4		.572	
NT2			.863
NT1			.711

KMO = 0,925 and Bartlett's test has statistical significance (p < 0.001)

*Sources: Calculation of authors*

**Correlation statistics**

The research team used the Pearson correlation coefficient method to evaluate the relationship between the variables in the model. The results show that the correlation coefficients (r) have values greater than 0, representing variables with a positive relationship. The correlation coefficient between variables is almost greater than 0.4, so they have a rather close relationship.

**Table 5: Correlation**

	LTT	CLC	NT
LTT	1		
CLC	0,653**	1	
NT	0,379**	0,439**	1

*Correlation is significant at the 0.01 level*

*Sources: Calculation of authors*

### Regression analysis

To test the hypothesis of our research, we use two regression analysis models (with two dependent variables NT and LTT). Estimated results from survey data can write regression equations as follows:

- For model with dependent variable is trust :

$$NT = 0.439 CLC \quad (R^2 = 0.193) \quad (1)$$

- For the model with dependent variable is loyalty:

$$LTT = 0.603CLC + 0.084 NT \quad (R^2 = 0.437) \quad (2)$$

**Table 6: Coefficients<sup>a</sup>**

*Sources: Calculation of authors*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.163	.105		11.062	.000
CLC	.603	.032	.603	18.925	.000
NT	.084	.024	.113	3.560	.000

a. Dependent Variable: LTT

For the model (1) The results of the analysis show that the overall quality variables explain 19.3% of the variation of the trust variable, the overall service quality variable has  $p\_value = 0.00 < 0.05$ , so it's accepted the hypothesis H2: the overall quality of service affects belief.

For the model (2) turn the overall service quality and belief explain 43.7% of the variation of loyalty. Theory H1 and H3 are accepted because p-value of the general quality variable in the model is less than 0.05. Both models have  $p\_value = 0.000 < 0.05$  so both models are suitable

**Table 7: Coefficients<sup>b</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.815	.167		4.894	.000
CLC	.592	.046	.439	12.832	.000

b. Dependent Variable: NT

*Sources: Calculation of authors*

#### **4. Discussion and Conclusion**

The purpose of this study was to examine the relationships among overall e-learning service quality, e-learning student trust, and e-learning student loyalty in the context of e-learning in Vietnam, an emerging country.

This study shows that overall e-learning service quality affects e-learning student trust and, which in turn positively affects e-learning student loyalty. It should be noted that overall e-learning service quality also has a direct effect on e-learning student loyalty. These results are consistent with that of previous studies in both traditional and online educational environments (Al-Rahmi et al., 2018; Eom & Ashill, 2018; Goh et al., 2017; Kilburn et al., 2016; Shahsavar & Sudzina, 2017; Yilmaz, 2017). This may indicate that there is no difference between students in developed countries and emerging countries in the sense if service quality is good, students are trusted, then students are loyal to the university. As e-learning students become more loyal to the university, they will register for more e-learning courses; after their graduation, they are very likely to return to study graduate programs online or on campus; they can be messengers to freely advertise about the university in general and e-learning programs in particular to their friends and relatives.

This study provides several valuable implications. From a theoretical perspective, the contribution of this study is the investigation of the integrative model of e-loyalty development process by incorporating the antecedents of overall quality and e-trust.

From a managerial perspective, it is noteworthy that e-loyalty is based on both overall quality and e-trust, and the antecedents of those two constructs are distinct. In addition, the results indicate that overall quality not only has a direct impact on e-

loyalty but also has an indirect influence through e-trust, confirming the previous notion of the fundamental role of e-trust in the e-loyalty development model. Since an online transaction is perceived to be associated with higher risk, trust has been considered as a critical component in online environment (Urban et al., 2000). Therefore, e-learning company should realize that to build e-loyalty, there has to be a prior development of e-trust and overall quality.

In order to alleviate consumers' concerns in terms of how personal information will be managed, sellers might post their information privacy practises on their website. This information signals to customers how their personal information will be collected, stored, and used in the future and if there will be any secondary use of their private information. Further, online retailers will need to disclose their information security practises to show that buyer payment information will be protected.

Universities in Vietnam must continually enhance the performance of overall e-learning quality and trust to build loyalty and develop better their e-learning program as real modern model university in the future.

### **Limitations and future research**

The research has a significant contribution to thee-learning literature, however, it has some limitations.

Firstly, data was collected from 12 universities in Vietnam. Although these sample size is rather suitable, some universities have not experienced e-learning system, the generalization of this study's findings to other universities in Vietnam or universities in an emerging country should be made with caution.

This study focuses only on the relationship between overall e-learning service quality and e-learning student trust, and the e-learning student loyalty. There might be other factors influencing e-learning student loyalty. For example, another factor that might affect e-learning student loyalty is cultural difference among countries that should be added to the research model in order to provide more meaningful insights. Comparing relative importance of the attributes constituting overall e-learning service quality between a developing or emerging country and a developed country is also an interesting topic for future research.

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# THE IMPACT OF SOCIAL INFLUENCE ON UNIVERSITY CHOICE

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## **Abstract**

*This study explores the relationship between social influence and students' university choice. We will statistically examine relationships between herding, informational social influence, normative social influence and the decision to choose a university. We borrowed the scale adjustments of Baddeley (2010), Burnkrant and Cousineau (1975), and Ajzen (1991). Our sample of 502 students was collected from seven universities in Hanoi, Vietnam. After running regression, the results of our study indicate that there is an effect between social influence and university choice. Our findings also suggest high levels of herding, informational social influence, and a low level of normative social influence will positively impact students' university choice.*

**Keywords:** *Social Influence, University Choice, Herding, Informational Social Influence, Normative Social Influence*

## **1. Introduction**

Nowadays, the competition among universities has been increasing, that creates both opportunities and difficulties for students' university selection. According to statistics of the Ministry of Education and Training, in 2016, Vietnam has 223 universities, of which 163 public universities and 60 non-public universities, especially the formation of private sector in education creates competition among universities. In addition, the method of enrollment as well as the number of major are very diverse, the total number of enrollment quotas in universities over the total number of candidates is increasing year by year. That means candidates have more

university choice. The decision to choose a university is not only an unimaginable decision but also a complex process which is affected by many different factors. There are many reasons for students to make wrong university decisions, because they do not know what they are capable of and what they like. In fact, specifically, lots of high school students choose majors because of their family, their friends, the studying trend. That's why many freshman and sophomore leave their universities to follow another one.

There have been a few studies about factors affecting university choice but the number of studies is still quite limited. That shows university choice is a relatively new topic, has not much exploited yet. Most of the previous suggest influences from other people have an impact on the student's choice of university (Briggs and Wilson, 2007; Semela, 2010; Johnston, 2010; Joseph, Mullen, and Spake, 2012). However, the researches about influences from other people on university selection have only been mentioned, there is no in-depth study. Therefore, the research of the impact of social influence on the decision to choose a university is extremely necessary and makes sense.

This research aims to explore how social influence affects students' university choice as well as which the strongest factor of social influence affects students' university selection is. We sought to answer the following questions: How does social influence affect students' decision to choose a university? Among the components of social influence, which factor has the strongest impact on the student's choice of university? From the research results, the authors will propose some solutions to make better university selection as well as to improve the quality of outputs for current universities.

## **2. Literature review**

### **Social influence**

Social influence is an important topic in experimental social psychology (Kelman, 1958). Kelman's theory of social influence (1958) proposes the attitudes, beliefs and behaviors of a person are affected by the attitudes, views and behaviors of others. Social influence occurs when a person's awareness and actions are affected by others. This effect is intentional through mechanisms such as persuasion, obsession, imitation, psychological spread, and homogenization. Social influence occurs when a person's emotions, opinions or behaviors are affected by others intentionally or unintentionally. Social influence brings changes in attitudes and actions and those changes can be at different levels (Kelman, 1958). Social influence refers to the process of an individual adapting to their behavior, emotions or opinions as a result of interaction with others (Raven 1965; Abrams & Hogg, 2011). Cialdini

and Goldstein (2003) propose that in human effort on accuracy, alignment and maintaining a positive concept, people extend the influence of society and their surroundings. Social influence has many forms, each of which can affect psychological change in a particular way (Dishion, Piehler, and Myers, 2008). Social influence can be seen in relevance, socialization, peer pressure, obedience, leadership, persuasion, sales and marketing (Gudjonsson & Sigurdsson, 2003). When finding a university to enroll or making a decision to attend a university, students are easily affected by people around them. This social phenomenon prevails in many different forms and is the center of social interaction, personal identity and in identifying individual actions.

### **Informational social influence**

Informational social influence is an influence to accept information from others as evidence of reality (Deutsch and Gerard, 1955). The influence of information is the acceptance and use of information from others to serve as evidence in a vague situation with the expectation that the decisions to be accepted are correct. The impact of informational social influence is effective when people are uncertain, vague or have a social disagreement. The impact of informational social influence is to accept information from others as evidence of reality, because the nature of the information given is ambiguous or due to social disagreement, the effect of information is effective when people are not sure. With regard to their decision, they are afraid of the decision to make the groundless and unacceptable by the people around them, and they assume that the people around have more knowledge about the implementation situation than they are. Kelman (1958) points out that informational social influence leads to privacy acceptance. Cialdini (1984) suggests that informational social influence describes the psychological and social phenomenon in which people copy the actions of others in an effort to perform behavior in one certain situations. When a person is in a situation where they are not sure about proper behavior, they will often look to others to find clues related to correct behavior.

### **Normative social influence**

The normative social influence is an influence to meet other people's positive expectations (Deutsch and Gerard, 1955). The normative social influence occurs when the behavior of a person tries to be suitable, and loved or accepted by others. The demand of being approved and socially accepted is a part of our human life. The normative social influence often leads to public compliance, doing or saying something without believing in it (Kelman, 1958). Kelman (1958) shows that normative social influence is a behavior to match other people's positive expectations.

Individuals often make decisions according to existing standards or a similar situation that has happened and are accepted by that other people. In terms of choosing a university, when a student like vocational training because of his/her strength, but studying in a vocational college is not popular in society, so instead of deciding to choose the university a student likes, he/ she will choose a university which is in a current trend or are highly appreciated.

### **Herdning**

According to Keynes's theory (1930), herding can be defined as the phenomenon of individuals deciding to follow others and imitate group behaviors instead of making decisions by themselves on the basis of information. Keynes (1930) conceived that the decision to follow the crowd as a response to the uncertainty and personal awareness of their own ignorance: people could follow the crowd because they thought following crowd would be the best decision. The crowds are always unconsciously affected, they behave like primitive people, cruel people, unable to think, but only feel by image, by linking ideas, they are not steadfast and capricious. Besides, due to their physical condition, a crowd needs a leader who can give them instructions and teach them how to act.

### **The impact of social influence on making a decision**

There are many studies which use social influence theory in their research model and the results show there is a positive or negative effect of social influences on decisions (Hui and Buchegger, 2009). Correll, Park, Judd, and Wittenbrink (2007) suggest the assessment of students' sisters or brothers who study in the university is very important for students to make a decision about choosing a university because students believe in his/ her brother/sister's experience.

Chapman's (1981) model has divided two groups of major factors that influence a student's decision to choose a university. These are (1) individual student characteristics including: the student's educational level, desire to attend; and (2) external influences such as the advice of meaningful people to students (influential individuals, college costs, efforts to communicate with students of universities). Chapman (1981) with his research model has shown that factors in these two areas are available before students choose universities and apply for admission to the University. Chapman (1981) in his research model, based on the results of descriptive statistics he showed that individuals influence the decision to choose a student's university, the author thinks that students are strongly affected by persuasion, advice from their own friends and family. The influence of these individuals can be done in three ways: (1) Friends and family expect students to attend a specific school, (2) Friends and family will Directly recommend students to study for that reason, (3) In

the case of a close friend, it is the place where the best friend decides to take the exam will affect the decision of the individual student.

In addition, a number of other studies have used the results of Chapman (1981) and developed on other research models on factors affecting students' university choice. The research of Cabera and La Nasa (2000) based on the school choice model of Chapman (1981) suggest the desire of others are also important factors affecting students' choice of university choice. Stage and Hossler (1989) show in addition to strong influence from parents, friends also have a significant influence on the students' decision to choose a university. Besides, not only parents, siblings, friends but also individuals in the university have a strong influence on the decision to choose a student's university (Stage and Hossler, 1989). In the context of Vietnamese education, the opinion of high school teachers may also affect the students' decision to choose a university. The greater the orientation of the important people (who have a big impact on the students' decisions such as parents, friends, teachers, etc ...) is, the higher the tendency to choose that university is (Stage and Hossler, 1989).

### **Hypotheses**

Hypothesis 1: Herding has a positive impact on students' university choice.

Hypothesis 2: Informational social influence has a positive impact on students' university choice.

Hypothesis 3: Normative social influence has a positive impact on students' university choice.

### **3. Method**

#### **Instrumentation**

Our study used the Likert scale of 5 points from 1 - "absolutely not agree" to point 5 - "absolutely agree" for both dependent and independent variables based on the scale listed in Table 1. Table 1 below gives a summary of the variable list and the derived scale of variables used:

**Table 1: Variable**

<b>Factor</b>	<b>Variable</b>	<b>Content</b>	<b>References</b>
Herding	UT1	I chose my university because it is a learning trend today.	Applied scale adjustments of Baddeley (2010)
	UT2	I choose my university because of its reputation.	
	UT3	I feel more confident and dignified when I am a student of my university.	

<b>Factor</b>	<b>Variable</b>	<b>Content</b>	<b>References</b>
	BC1	I chose my university because most of the successful people I know were my university's students.	
	BC2	I chose my university because most of my friends also chose this university.	
	BC3	I chose my university because most of my relatives also attended this university.	
Informational social influence	LK1	The advice of my parents influenced my decision to choose a university.	Applied scale adjustments of Burnkrant and Cousineau (1975)
	LK2	The advice of family members (not parents) influenced my decision to choose a university.	
	LK3	The advice of my friends influenced my decision to choose a university.	
	LK4	The advice of my teachers influenced my decision to choose a university.	
	LK5	The advice of my brothers/ sisters influenced my decision to choose a university.	
	LK6	The advice of university counselor influenced my decision to choose a university.	
	MM1	My parents' wishes influenced my decision to choose a university.	
	MM2	My family members (not parents)' wishes influenced my decision to choose a university.	
	MM3	My friends' wishes influenced my decision to choose a university.	
	MM4	My teachers' wishes influenced my decision to choose a university.	
	NX1	The comments of individuals on books, newspapers, paper magazines influenced my decision to choose my university.	
NX2	The comments of individuals on the Internet or the university's website influenced my decision to choose a university.		

<b>Factor</b>	<b>Variable</b>	<b>Content</b>	<b>References</b>
	NX3	The comments of individuals on radio and television influenced my decision to choose a university.	
Normative social influence	QC1	I chose my university because if I did not choose this university, my parents would scold/ blame/ laugh at me.	Applied scale adjustments of Burnkrant and Cousineau (1975)
	QC2	I chose my university because if I did not choose this university, my relatives (not parents) would scold/ blame/ laugh at me.	
	QC3	I chose my university because if I did not choose this university, my friends would scold/ blame/ laugh at me.	
	QC4	I chose my university because if I did not choose this university, my teachers would scold/ blame/ laugh at me.	
	QC5	I chose my university because if I did not choose this university, my older generation would scold/ blame/ laugh at me.	
	QC6	I chose my university because if I did not choose this university I am afraid I will not have a job after graduation.	
	QC7	I chose my university because if I did not choose this university I am afraid I will have low income after graduation.	
	QC8	I chose my university to study because if I did not choose this school, I could miss university.	
University choice	QD1	The decision to choose this university to study is absolutely right.	Applied scale adjustments of Ajzen (1991)
	QD2	I am ready to recommend my university for younger generation.	
	QD3	I would still decide to choose my university if I had another chance to decide.	

## Sampling and data collection

We obtained our sample from freshmen in some Hanoi universities in Vietnam. This is the group of students who are most qualified for the survey about the decision to choose a university because freshmen are who have just passed the university entrance exam and have just decided to which university they choose. Therefore, a freshman can reminisce and recall his/ her university chose behavior more quickly and accurately. The surveys are taken at seven universities, they are National Economics University, Hanoi University of Technology, University of Construction, University of Commerce, University of Transport, Thuyloi University and University of Economics - Engineering Arts - Industry. We employed Hair, Anderson, Tatham, and William's method (1998) in determining the target sample size. Hence our target sample size was 150. In the end, we collected 502 completed surveys. With primary data (collected through surveys), we analyzed the data by using SPSS software version 25.0.

## 4. Data analysis

**Table 2: Regression**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.340 <sup>a</sup>	.116	.110	.77524	1.802
a. Predictors: (Constant), TT, QC, ĐĐ					
b. Dependent Variable: QĐ					

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.310	.216		10.694	.000		
	QC	-.253	.048	-.240	-5.224	.000	.843	1.186
	ĐĐ	.242	.058	.200	4.149	.000	.763	1.310
	TT	.314	.067	.211	4.672	.000	.874	1.145
a. Dependent Variable: QĐ								

The adjusted R square value of 0.11 indicates that the independent variable affects 11% of the variation of the dependent variable, the rest is 89% due to the out-

of-model variables and random errors. Durbin-Watson coefficient = 1,802, is in the range of 1.5 to 2.5, so there is no first-sequence autocorrelation phenomenon. Sig test F equals 0.00 < 0.05, thus, multiple linear regression models are suitable for data sets and can be used.

Table 2 illustrates the relationship between herding, informational social influence, normative social influence and university choice was found to be significant at (sig < 0.05, R-square = 11.60%), thus university choice is dependent on social influence and 11.60 % of the variance university choice can be explained by the changes in social influence. High herding is a predictor of higher university choice. For every incremental increase in herding index, we expect 0.242 of university choice index. High informational social influence is a predictor of higher university choice. For every incremental increase in informational social influence index, we expect 0.314 of university choice index. Low normative social influence is a predictor of higher university choice. For every incremental decrease in normative social influence index, we expect 0.253 of university choice index. Among the components of social influence, informational social influence has the strongest impact on the student's choice of university.

## **5. Discussion and conclusion**

The aim of our study was to explore how social influence affects students' university choice. After testing 502 students, we found that social influence takes an impact on students' university choice. There is a positive significant between herding and the decision to choose a university. Informational social influence affects university selection positively. In contrast, normative social influence have a negative effect on university selection. Our findings are the same to the results of many researchers (Gardner & Steinberg, 2005; Paez & Scott, 2007; Orth and Kahle, 2008; Scott-Parker, Watson, King, & Hyde, 2012). The number of universities has been increasing which makes student difficult to choose a good university. Because of social influence, students sometimes make wrong decisions. Therefore, students should think carefully about a university or a major they want to follow, believe in themselves, study hard and choose their suitable university regardless of opinions from people around.

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# ECOLOGICAL ETHICAL EDUCATION FOR STUDENTS IN VIETNAM TODAY

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## **Abstract:**

*Students are a unique, quintessential social force in the youth class and a major force to complement the intellectuals. Students are also the main force contributing to the sustainable development of the country in the future. Ecological ethics for students have both immediate and long-term benefits, so it is considered to be the most effective, profound and lasting. In addition to professional qualifications and ethical qualities in general, ecological ethics in particular is one of the criteria to assess the capacity of students when they graduate and join the human resources for national development. Although the ecological ethics of students today has had positive results, there are still many limitations that need to be overcome. In order to improve ecological ethics for students, we must implement a series of complex measures, in which ecological ethical education is an important measure.*

**Keywords:** *ecological ethics, ecological ethical education, students Vietnam.*

## **1. Introduction**

### ***What is ecological ethical education?***

First of all, it must be affirmed *that ecological ethics is a special form of social ethics*, which is the ethics expressed in the relationship between people and nature (with the surrounding environment)... As a special form of social ethics, *ecological ethics includes the views, conceptions, thoughts, feelings, principles, norms, regulating human behavior in the process of natural change and renovation to serve human life, for the continuous existence and development of society in certain natural and social conditions.*

In social life, education is an important activity. Education is the "*activity to impact a systematic way to the development of mental, physical, of a certain object, causing that object gradually acquire the qualities and capabilities as requirements*

*set out*" (Institute of Linguistics, 2000). In essence, education is a process of forming cognitive, emotional right attitude, forming habits, civilized behavior in life, consistent with social norms in education subjects. Ecological ethical education is a content in ethics education in general.

Ecological ethical education is a purposeful activity, in which the educational subject influences on the educational object, in order to formulate an ecological ethics standards, from which they have the proper behavior, attitude in dealing with nature. In essence, ecological ethical education is to regulate voluntarily human behavior towards nature; providing them with educational standards and principles in dealing with the natural environment, making them aware of the interests of nature and the social community.

For students, ecological ethical education is an important step to transform the principles, rules, ecological ethics standards of society into intrinsic qualities and self-discipline of each student. Ecological ethical education is a process of general education, the unity between education and self-education.

### ***The importance of ecological ethical education for students***

It can be said that ecological ethical education is one of the important measures to raise the awareness of protecting the ecological environment and mobilizing all forces in society to participate in improving the ecological environment, *to overcome the consequences of pollution in the past, making the ecological environment cleaner, better, more strictly managed, to make the ecological environment better and more useful to people, making people and the natural world in harmony with each other rather than "hostile" each other as today* (Hai, Luong Viet & Lixiev,I.K, 2008).

Students are a large force and play a big role in society, being the owners of the future. Therefore, along with the transmission, formation and improvement of creative thinking capacity, professional qualifications, ethics education, including ecological ethical education for students, is an special important activity. Because:

Firstly, ecological ethics is an integral part of the ethics and social ethical education.

Secondly, ecological ethical education for students contributes to building the student personality - the subject of the industrialization and modernization process of Vietnam

Thirdly, ecological ethical education for students for the sustainable development of human and natural world.

Today, environment and environmental protection are one of the pressing issues, a global problem. The action target of the human community is to voluntarily adjust human impact on nature, protect the environment for sustainable development

for both humans and the natural world. One of the more long term solution is to improve the ecological ethics for every citizen.

Students at the future owners of the country are the main human resources for the future. These will be the people who create the future of the country and mankind. Therefore, equipping students with the knowledge and raising environmental awareness through ecological ethical education is an issue of practical value.

### ***Literature reviews***

There are many papers on ecological ethics. Some typical papers such as *"Ecological ethics from theory to practice"*; *"The problem building ecological ethics in condition of the market economic"* by Pham Thi Ngoc Tram; *"Ecological ethics - issue that need attention"* by Tran Sy Phan; *"Some theoretical issues about environmental ethics"* by Vu Dung. Directly related to ecological ethics is the article *"On environmental ethics"* by Ho Si Quy. The Japanese researcher Tomnobu Imamichi has the article *"The concept of ecological ethics and the development of ethics ideology"*, the translator Nguyen Thi Lan Huong.

The research paper has focused on clarifying the concept of ecological ethics, the constituent elements of ecological ethics, the factors affecting the ecological ethics in general. Although there are still different notions about the concept of ecological ethics, these works are generally united in the assumption that ecological ethics is formed in the process of human impact on nature, it is a system of views, concepts, thoughts, feelings, principles, rules, norms ... regulating and adjusting human behavior in the process of natural gender transformation to serve the human life, ensuring the development of both human beings and the natural world.

Ecological ethics is formed and developed mainly by two paths: spontaneity and self-awareness through education. In recent years, the study of ecological ethical education has attracted by many researchers. Among the works related to this issue, there are some typical projects such as: *"Ecological ethics and ecological ethical education for key officials at district level in the northern provinces in our country today"*, Ministry-level scientific project in 2003-2004, Ho Chi Minh National Political Academy; *"Ecological ethicaleducation for key officials"* by Le Binh (Journal of Party Construction, No.7, 2005); *"Educating ecological ethics and building a cultural environment in the twenty-first century schedule"* by author Do Huy (Political Theory Journal, No.2, 2007) ...

The above works all affirmed the goal of ecological ethical education, the need to educate ecological ethics in the present conditions, to show what is the content of ecological ethical education, the status of ecological ethical education and how to educate ecological ethics most effectively.

Recently, researching on ecological ethics in students has attracted more attention of researchers, including the National Conference on *"Environmental Education in Schools"*, Research Center Natural Resources and Environment with Hanoi National University to coordinate implementation; In particular, in 2009, the National Political Publishing House published a monograph *"Ecological Ethics and Ecological Ethical Education"* by Vu Trong Dung. More concretely, some works focused on studying the ethical education in specific scope and subjects such as: master's thesis in Philosophy *"Environmental ethical education for students of Resource and Environment College of Central in current"* (2014) by Mai Thi Thu Hang; Master's thesis in Philosophy *"The issue of ecological ethical education for students in colleges and universities in Hung Yen in the current period"* (2013) by Nguyen Cong Cuong, University of Social Sciences and Humanities, Hanoi National University.

In the above works, the authors also assessed the situation, analyzed achievements, limitations in ecological ethics of students in Vietnam today. With evidence of serious environmental degradation in many urban areas, cities, craft villages, rivers, and coastal areas, the authors have shown weaknesses in ecological ethics and ecological ethical education in schools. The solutions to improve ecological ethics proposed by the authors are quite comprehensive and feasible; based on relatively focused theoretical research, based on fairly comprehensive assessments and international experience references ... The above mentioned ecological ethical researches achievements have the scope of research at the social level, national level. Only in certain specific cases, ecological ethics in schools were mentioned as an example.

In the current situation, facing climate change is increasingly unfavorable for humans, ecological ethical education becomes inevitable, is the educational objects of many ages, including students. However, the issue of ethical education for students in current has not been specifically studied.

## **2. Method**

The authors use some basic methods in research such as analysis, synthesis to clarify the theoretical and practical basis of ecological ethical education for Vietnamese students today. Thereby, we emphasize the educational contents and methods to improve ecological ethics for students.

## **3. Results**

Ecological ethical education for students is to shape ecological ethics needs for students, so that they have voluntary self-discipline behaviors with nature.

The content of ecological ethical education for students is very rich, related to ecological ethical structure. When analyzing the structure of ecological ethics, they

consider it from many angles. At each different angle allows us to look at a defined structural layer. Therefore, in the framework of research, we only mention some of the following main contents:

### ***Educating ecological ethical consciousness***

In social ecosystems, the natural, human and social factors are closely related. In which, the human and social factors show their superiority. Human through practical activities to renovate the natural world as well as transform the relationship between human and nature. Therefore, the actual activity results of human depend not only on objective conditions, social production modes but also on the appropriateness of human consciousness with reality. So to human self-consciousness get in the way of dealing with nature, you must first educate ecological ethical sense.

Education of ecological ethical consciousness is *"the self-awareness of human about the relationship between the human, society, nature and conscious ways of controlling those relationships to create the true harmony between the society and the nature, to create long-term development conditions for the society"* (Tram, Pham Thi Ngoc, 1997).

Firstly, education of ecological ethical consciousness is the education of *ecological ethical knowledge*. Ecological ethical knowledge is an understanding of the good and the evil; the beauty, the ugliness; the right, the wrong of the human behavior towards the nature. Education of ecological ethical knowledge to help students understand the elements of the natural environment, the relationship between those factors together and with the human and the society. Students need to be aware of their position and role in their relationship with the nature. It is necessary to change their attitude to the natural world, raise their ethics responsibility in protecting the natural world, using natural resources in a rational way, combining with the construction, protection, regeneration and respect for the natural world. Because *"If we do not quickly change completely the concept of the human position and everything related to human beings in the universe, could not avoid the collapse of natural systems"* (Aurelio Peccei, Daisaku Ikeda, 1993), *"The Earth provides enough to satisfy everyone's needs, but not enough for everyone's greed"* (Schumacher.E.F, 1995). In order to do this, it is necessary to educate students the correct conceptions and understanding about the relationship between human - nature; about human adaptation to the changing limits of the natural environment, to ensure the unity of human - nature, towards sustainable development. Only when students understand the value of the natural environment for their life, then they will not use resources arbitrarily, wastefully, practically but follow the rules of nature...

Secondly, ecological ethical education is *education of ecological ethical affection*. This is an important content of ecological ethical education. Ecological affection is the emotional attitude of students towards their own behavior and other people's behavior in relation to nature, expressing their feelings, vibrations with the beauty, with the value of nature. Facing the nature, students aim to care for the nature, or indifferent, cold before nature, which depends greatly on the attitude and actions of individual students, in other words, it depends on the eco-cultural lifestyle of students. Therefore, ecological ethical affection is not only the feeling of students before nature, but also the capacity of consciousness and reason in exploiting, using and protecting natural world for human life.

Ecological ethical sentiment will deepen the relationship between students and the nature, arouse ecological ethical needs, motivate students to act in a ethical way of dealing with natural world.

Thirdly, educating *ecological ethical beliefs* for students. Ecological ethical belief is one of the factors that determine the ecological ethical behavior of students, is the basis for revealing ecological ethical qualities such as: resolute action against bad habits with nature in their behavior and others.

Students have true love for the nature, when and only when they are aware of the important role of the ecological environment in their lives, and they have a passion love with the nature. "*The faith and knowledge are only considered true when it has entered into the human, mixed with human emotions and wills*" (Hong, Le Van, Lan, Nguyen Ngoc, Thang, Nguyen Van, 2007). Therefore, educating ecological ethical beliefs for students is contributing to creating motivation to study, research and invent clean technologies applied to the exploitation and protection of the natural environment.

Fourth, educating *ecological ethical willpower*. Ecological ethical emotions and ecological ethical willpower have a relationship closely. If the ecological ethical willpower is right, it will pave the true way for the ecological ethical emotions, the deep ecological ethical emotions is a manifestation of the sharp ecological ethical willpower. When there is the ecological ethical willpower, students will be determined not to carry out acts that harm the natural environment, and will resolutely struggle to prevent forest, minerals, land, animals and plants exploitation caused the environmental crisis and pollution.

### ***Education of ecological ethical standards***

Ecological ethical standards are standards of ecological ethical values that are in line with the requirements of social development, creating good personalities of human

and humanity. Therefore, they have been evaluated, acknowledged, and generalized by human beings as a model for human to rely on, they self-assess, self-regulate their behaviors in order to meet the general requirements of social ecological ethics.

As well as the ethical standards in general, the ecological ethical standards have various manifestations and expression levels. Some basic ecological ethical standards can be drawn for students as follows:

Firstly, saving in consumption, voluntarily complying with environmental protection requirements in consumer activities. This is an important ecological ethical standard. Because of the relationship between students and the environment is clearly manifested through the way of consumption, using their natural resources. Through eco-ethical education helps students understand that the natural resources on the earth are not infinite, each student needs to follow natural protection methods, through their own consumption habits to protect the ecological environment, ensure the regeneration and self-recovery of the natural environment

Secondly, respecting, protecting the life and the biodiversity. This is an essential eco-ethical standard for students. Because of biodiversity has a great role to be irreplaceable for the existence and development of living beings and humans. Biodiversity not only provides direct benefits to society such as food, construction materials, medicines but also has special value in the field of biotechnology, in agricultural production, industry, health, tourism... Scientists have estimated the "value of global biodiversity" for human species is \$ 33,000 billion per year (Khoa, Le Van, 2009). Therefore, it is necessary to educate students to realize the importance of biodiversity so that they can take concrete and practical actions to protect the structure, functions and diversity of the natural environment.

Thirdly, practicing the ecological cultural lifestyle in dealing with nature. This is a basic ecological ethical standard for students. Ecological cultural lifestyle is understood as *"love for nature, living in harmony with nature, always embellishing and protecting the beauty and purity of nature expressed from awareness, thinking to behavior of human"* (Bao, Le Tran, 2005). Therefore, when students implement the eco-cultural lifestyle, they will respect and love nature and self-protect the natural environment.

### ***Education of ecological ethical values***

From time to time, the ecological ethical values can be divided into the value of traditional ecological ethics and the value of modern ecological ethics. Each ethnic

group has its traditional ecological ethical values due to its history. The traditional ecological ethics of Vietnam is formed on the basis of folk concepts and philosophies and influenced by Confucian, Buddhism, and Taoist ideas. The traditional values of Vietnamese ecological ethics are expressed as follows:

Firstly, the concept of "God - Land - Human unity". From this concept, people lived in harmony with nature, sticking with nature, following nature. Human knows to live "rely on", blend with nature, "consent" according to nature, those things have entered the subconscious, ethics sentiments of human very early, accepted by human, it has become the habit, lifestyle of human.

Secondly, the concept of "the purpose of Human, the success by God". If we remove the idealism in the concept of "The success by God", we can find the value of ecological ethics in traditional Vietnamese conception. Humans always have the ideal of living in harmony with nature. Humans love nature, because they understand that nature is a place to protect and provide a source of material wealth to feed people.

Thirdly, the concept of "Man wins God". Unlike the above concepts, the concept of "Man wins God" has created for human the dynamism and creativity in relation to nature. From certain victories before nature, people have always believed in their strength and know how to win naturally. However, the victory here is to adapt and live in harmony with nature and not be far away and contrast with nature.

These good values in the traditional ecological ethics mentioned above have contributed to creating valuable traditional values of the Vietnamese people. However, in the current period, it is necessary to inherit and develop traditional ethical values to suit the country's reality. Today, living in harmony with nature must adhere to the principle of sustainable development - a principle of modern lifestyles of all humanity's interest.

### ***Education of ecological ethical behavior***

Consciousness, norms, and values of ecological ethics, though playing a crucial role in determining the boundaries of human ecological ethical action, making the motive of ecological ethical action but it will be limited or less effective if human only stop there.

Consciousness, norms, and values of ecological ethics must be expressed by specific action (behavior) to bring benefits to society and prevent evil. Human ecological behavior is born on the basis of ethical consciousness.

Ecological ethical behavior of students is adjusted, defined by certain norms and rules of ecological ethics, reflected in students' voluntary and positive

activities on rationally consumption, using natural resources and protecting the ecological environment..

Ecological ethical behavior requires ethical subjects to voluntarily adjust their behaviors on the basis of ecological ethical standards of society. When considering whether an act is an ecological ethical behavior, the most important thing is to consider the self-discipline of the subject of behavior. To evaluate an ecological ethical behavior, often based on the criteria: self-discipline, usefulness, non-profit of ecological ethical behavior. The self-discipline of students only occurs when they are fully aware of the purpose and meaning of their ecological ethical behavior.

Ecological ethical education for students according to the human nature should be concerned with the practice of ecological ethics in the daily activities of students. Behavior and gesture of ecological ethics are always derived from pure emotions, not because of the personal, selfish, small, and mediocre calculations of individual students.

#### **4. Discussion and Conclusion**

##### ***Solutions to improve the effectiveness of ecological ethical education for students in Vietnam***

##### *Continuing to build and supplement, improve the law on environment and ecological environment protection*

The law is a system of rules that are generally enforced by the state, implemented and aimed at achieving socio-economic and sustainable development goals of the country. The Constitution and the Law on Environmental Protection are our state's highest environmental management tools. The Law on Environmental Protection plays an important role in controlling human behavior in relation to the natural environment. Therefore, it is necessary to continue to build, supplement and improve the law on environment and environmental protection.

To improve the efficiency of environmental protection, ecological ethical education plays an important role. However, in order to achieve this, it is necessary to continue building a system of legal documents on environmental protection, linking ecological ethical education with environmental protection law education. Because ethics and law are socially conscious forms to regulate human behavior. Law and ethics have a dialectical relationship with each other, "*the law is a ethics law, an important means for the state to manage society*" (Giap, Đàng Thai, 2000). Therefore, if ethics is educated well, it will set the step for good legal education.

Currently, Vietnam has not yet developed its own legal documents to protect specific environmental factors. The specificization of the law stipulating the liability

for compensation of individuals, units and enterprises when causing losses to the environment and prescribing the responsibility for financial contribution to environmental protection ... has not yet been properly focused. Moreover, criminal and civil liability issues for violations of the law on environmental protection have not been specified and fully in the current legal documents. In particular, the law enforcement is not serious and law enforcement departments are ineffective. *"The system of legal documents on environmental protection is incomplete and synchronous and both lacking and overlapping. There is no strict sanctions system that can be used to deter violations, so the effectiveness of the struggle for prevention, fight crime and violate the law on low environmental protection. The organization, functions and tasks of the forces directly involved in the fight against environmental crime are not specific, clear and unified, so the operation is facing some difficulties and embarrassment, not yet distributed effective and effective in preventing, detecting and handling violations of the law on environmental protection"* (Vietnam Prime Minister, 2008).

*Developing contents, programs and methods of ecological ethical education for students to integrate into other subjects to suit the current conditions of Vietnam.*

*Regarding the contents and programs of ecological ethical education*

In Vietnam today, ecological ethical subjects in colleges and universities do not yet exist. Ecological ethics education is integrated into other subjects. However, in order to educate ecological ethics for students through those courses effectively, as well as to meet the systematic educational development strategy, contents and curriculums of ecological ethical education must be developed suitable for students.

The contents and programs of eco-ethical education for students need to meet some of the following requirements:

Firstly, building contents, programs of ecological ethics education for students consistent with the goal of education, scientific and ensuring comprehensive education

Secondly, building contents and programs of ecological ethical education must be suitable for educational subjects. This is an important requirement in education. For each educational object, a suitable educational content and program is required.

Thirdly, building contents and programs of ecological ethical education must be linked feasible, closely to the requirements of national development, must create awareness, thinking, increase understanding and change learner's behavior.

*Regarding ecological ethical education methods*

When there are appropriate contents, educational programs and ecological ethics curriculum, but there is no proper method of ecological ethical education, students' learning will not achieve high results.

The requirement of innovating educational methods is to promote the positive, proactive, creative thinking of students, helping students to be highly adaptable to the transformation of practice, from which pictures become self-motivated students, let them improve themselves.

Currently, in Vietnam, ecological ethics is not a separate subject, ecological ethical education is done through other scientific disciplines. Therefore, ecological ethical education uses many teaching methods of the subjects. Therefore, in addition to general methods such as presentations, discussions, games... ecological ethical education can also use other methods such as: field visits, practical operation methods, close access life ...

*Fostering teaching staff to teach ecological ethics from different subjects.*

Students are the "center" of the educational process, but deciding on the quality of education is the teacher. The qualifications and pedagogical methods of teachers are important for the learning quality of students. In the process of education reform in Vietnam today, implementing the reform of educational methods to improve the education quality is one of the seven major solutions stated in the 2001-2010 Education Development Strategy. However, any method, whether traditional or modern, is indispensable to the role of the teacher.

In order to educate ecological ethics for students, it is necessary to train teachers of the subjects that integrate the contents of environmental education, supplement them with knowledge of ecological ethics. Creating a change in the awareness of teaching staffs on ecological ethics, on ecological ethical education for students is considered the first decision.

Training and retraining should focus on the basic contents for students such as: improving knowledge, innovating teaching methods, practicing professional ethics and improving social responsibility; should focus on indoctrinate how to approach new knowledge, propose methods and solve practical problems, pass on to students the desire to create and rise in learning.

*Diversifying forms of ecological ethical education for students.*

Ecological ethics of students manifest through their lifestyle, actions and must be based on the self-discipline of each student. This self-awareness is started, constantly evolving and reinforced through the forms of ecological ethical education, from family education to education in schools and in society. Therefore, in order to improve the effectiveness of ecological ethical education for students, it is necessary to pay attention to some of the following basic forms of education:

Firstly, ecological ethical education through different subjects in the school. Through the subjects such as: The basic principles of Marxism - Leninism,

Aesthetics, Mathematics, Physics, Chemistry, Literature, Geography... to help students realize the characteristics of the natural environment, its role in human social life, human impacts make the natural environment change, its consequences. On that basis, educating students to love and respect nature, and to maintain and protect a healthy and clean living environment..

Secondly, ecological ethical education for students through scientific research forms, exercises, essays, scientific research topics related to environmental fields. Through research to understand the environmental issues, related to the environment, the environmental pollution, students are directly approached to the reality, draw comments, assess, and then form at each individual student standards and behaviors positively dealing with environmental issues.

Thirdly, ecological ethical education for students through extracurricular activities, sightseeing. Extracurricular activities have a position and meaning that is especially important for students' self-education activities. Extracurricular activities overcome the limitations of confined space, time, communication activities, rigidity of the ecological ethical education program through teaching. It contributes to satisfying the diverse needs of students, creating excitement in learning.

Fourth, combining family, school and society in ecological ethical education for students.

Fifth, ecological ethical education through organizations of Youth Union, Student Association.

Sixth, ecological ethical education through mass media. This is a form of ability to disseminate widely and timely information about the environmental situation and consequences of climate change.

*Promoting the active, positive and creative role of students in learning, to enhance the sense and behavior of ecological ethics*

In order to have a transformation from ecological ethical knowledge, ecological ethical affection, ecological ethical willpower into ecological ethical behavior, it is necessary to go through the process of self-study by students.

The self-study quality of students depends on many objective and subjective factors. However, the objective factors of the educational process such as educational contents, programs, goals, methods ... will not be effective if students do not turn the educational process into self-education process.

In order to promote the activeness, self-awareness, creativity in self-education activities, training ecological ethics of students, it is necessary to focus on the following issues:

Firstly, raising awareness of the inevitable role of self-study, self-training of ecological ethics of students.

Secondly, developing a study plan and seriously implement self-study and self-training on ecological ethics.

Thirdly, attaching self-study, self-training ecological ethics to implementation and solving problems posed by practice.

### **Conclusion**

In Vietnam today, ecological ethical education for students is considered one of the long-term, fundamental measures for sustainable development. In order to improve the effectiveness of ecological ethical education for students, it is necessary to synchronously implement ecological ethical education solutions, requiring the coordination of all education forces in the school with family and society education.

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# OBSTACLES FROM INTERNAL FACTORS TO THE TRANSITION TO UNIVERSITY AUTONOMY IN VIETNAM

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## **Abstract**

*University autonomy is a global trend. Vietnam is not an exception. Although it was launched two decades ago, university autonomy in Vietnam is still at an experimental stage. The most of public universities are still hesitant, not ready for the transition to university autonomy. There are many factors both outside and inside that slow this process. In addition to the factors that motivate the transition to university autonomy, obstacles from internal factors cause many issues to be addressed both on the macro and micro levels. The internal factors that are identified to have a negative impact on the transition to autonomy include: improper awareness of university autonomy, restrictions on higher resources, weakness in financial resources and incompleteness of university organizational structure to operate a university autonomy. That requires the application of systematic and comprehensive solutions to accelerate the transition to university autonomy. The main solutions proposed include: Classifying and evaluating public universities that are not autonomous, setting up a roadmap and timetable for conversion; converting financial allocation methods to training and bidding methods of training from the state budget; completing the system of legal documents on university autonomy; perfecting the organizational structure of the university, especially establishing the real power of the university council; strengthen internal university communication activities.*

**Keywords:** *internal factors, obstacles, university autonomy*

## **1. Introduction**

In the context of competition and increasing international integration, autonomous universities are evaluated as an advanced university management method to help universities improve the quality and effectiveness of training and affirm their position (A. Sursock and H. Smidt, 2010). University autonomy is a global trend. Vietnam universities cannot be outside or ignore that trend. From the beginning of the 2000s, the transition to autonomy of state-owned universities was started. This is reflected in the Charter of the university, issued in the Decision No. 153/2003/QĐ -TTg of the Prime Minister, whereby the university is autonomous and

responsible for such aspects as planning, development planning, training, science, technology, finance, international relations, personnel and organization. Next, in 2005, the Education Law mentioned the decentralization of education management, strengthening the autonomy and self-responsibility of educational institutions. The Law on Higher Education, No. 08/2012/QH13, once again allowed higher education institutions to socialize higher education. Article 32 on the autonomy of higher education institutions has identified that higher education institutions will be autonomous in major activities of organization, personnel, finance, property, training, science and public technology, international cooperation, quality assurance of higher education.

Resolution 77/NQ-CP on Piloting the renewal of operational mechanisms for public higher education institutions established in the period 2014-2017 was issued on October 24, 2014 to concretize the contents. about university autonomy and self-responsibility and promoting university autonomy in Vietnam. Most recently, the Law on amendments and supplements to some articles of the Higher Education Law, No. 34/2018 / QH14 has been issued, of which Article 32 of the Law on Education has been amended with the title " Autonomy and accountability of higher education institutions "have clearly defined autonomy and accountability and conditions for implementing autonomy of higher education institutions. At this law, the university's autonomy and accountability is understood as follows: "Autonomy is the right of higher education institutions to determine their own objectives and to choose ways of implementing goals; self-determination and accountability for professional, academic, organizational, human resource, financial, property and other activities based on the provisions of law and the capacity of higher education institutions study. Accountability is the responsibility of higher education institutions to report and transparent information to learners, society, competent authorities, owners and stakeholders on compliance with the provisions of law and strictly comply with regulations and commitments of higher education institutions." Article 32 of the amended Higher Education Law concretizes academic and financial autonomy, accountability of higher education institutions for owners, learners, societies and agencies authorized management (Law on amendments and supplements to some articles of the Higher Education Law, 2018).

According to the Ministry of Education and Training, by 2017, there are 235 higher education institutions (hereinafter referred to as universities) of which 170 public universities and 65 non-public universities. In implementing Resolution

77/NQ-CP, the Prime Minister issued a decision approving the pilot scheme to renovate the operational mechanism for the period of 2015-2017 for 23 public universities in which the universities have time to self-study. Thus, after more than 10 years of promulgating the Education Law and more than 5 years of promulgating the Higher education Law, most public universities have still operated under the traditional mechanism, are not willing to transfer to university autonomy and operate under autonomous university mechanism. The question is *why public universities are not excited to switch to more advanced operating models?*

In the report assessing the implementation of the Resolution No. 77/NQ-CP dated October 24, 2014 of the Government, on piloting the renewal of operating mechanism for public higher education institutions (Ministry of Education and Training created, 2017), the Ministry of Education and Training has pointed out three main groups of factors affecting university autonomy of public universities in Vietnam, including: policies, governance and internal communication. Based on research results at 19 public universities that have taken autonomy, in addition to the results and successes assessed, the report shows specific limitations in the above aspects (Ministry Education and Training, 2017).

(1) Regarding policies: (i) lack of specific regulations and definitions of autonomy and rights of universities in determining autonomy and self-responsibility, (ii) many legal documents has not changed timely, (iii) universities do not receive specific guidance from the state management agency, (iv) lack of uniformity, consistency and feasibility in the legal document system rules and policies on the implementation of university autonomy, (v) university autonomy has not become an urgent requirement for universities, (vi) university autonomy has not been associated with university management innovation.

(2) Regarding the governance organization: (i) the legal framework for the establishment and operation of the University Council is incomplete and unclear, (ii) lack of sufficiently strong sanctions for pilot universities but not establishment of the university Council, (iii) the lack of effective university council models, (iv) universities are not easy to find personnel as chairman of the university council, (v) real power of the university council is not strong enough.

(3) Internal communication: (i) The awareness of autonomy is not accurate.

It can be recognized that external factors are the main factors that negatively affect the implementation of university autonomy at the pilot universities. The only internal

element mentioned is the university's awareness of university autonomy. The question is, *are there any other internal factors that negatively affect university autonomy?*

There could be many causes of the delay of Vietnamese public universities in the transition to autonomous universities including both external and internal elements. This paper examines the impact of internal factors on transition to university autonomy. Based on the results of the study on the transition to university autonomy in Vietnamese public universities, this article will analyze some internal factors that negatively affect this transition in university, and to propose some solutions to promote public universities to transform into autonomous universities, implementing autonomy and accountability of universities in the context of increasing international integration and competition in the higher education market.

## **2. Research Method**

To collect the data needed for assessing barriers from internal factors to the transition to public autonomy of public universities, a qualitative study was conducted on a sample with 8 universities that have not yet implemented autonomy have been selected (see table 1). In-depth interviews and focus group interviews were conducted at each selected university. The in-depth interview was conducted with a representative of the university board and a representative as a member of the Communist party executive committee. At each university, four focus group discussions were conducted. Each group of 5 members includes the following specific groups: Group 1 includes representatives of leaders of faculties and divisions; Group 2 includes representatives of leaders of departments; Group 3 includes representatives of lecturers; Group 4 includes representatives from staff

In-depth interviews are focused on two main topics: awareness of university autonomy and university governance organization. Open questions are designed for in-depth interviews. Specifically, the subject of awareness of university autonomy is detailed in the following aspects: (i) Assessing the necessity of transition to university autonomy; (ii) Understanding the content of university autonomy; (iii) Conditions to ensure university autonomy; (iv) Advantages and disadvantages of the university if implementing university autonomy; (v) Things to do from the university to implement university autonomy.

Regarding the establishment and operation of university councils, the main issues exchanged include: (1) The necessity to set up university councils; (2) The role of the university board in the organizational structure of the university; (3) The

relationship between university council, university board and party executive committee; (4) Conditions for establishment and operation of university council.

Conversation in group focus interviews was aimed at the aspects of university autonomy and governance. These aspects are presented as suggestions for each topic as following: awareness of university autonomy and university council; conditions for university autonomy and establishment and operation of university councils; advantages and disadvantages of the university if implementing autonomy and establishing and operating the university council. At the end of the study, there were 18 in-depth interview records for the subjects of the university leadership and the party committee executive committee members and 36 copies of the record of opinions of the members have been completed. After editing, the data is analyzed with using 10 NVivo software.

**Table 1. List of universities that have not been autonomously selected for research**

<b>Name of the university</b>	<b>Address</b>	<b>Region of Vietnam</b>
University of Transportation	No. 3, Cau Giay street, Dong Da district, Hanoi	North
University of Kien Giang	320A Highway 61, Minh Luong town, Chau Thanh district, Kien Giang province	South
Open Hanoi University	B101 Building, Nguyen Hien street, Hai Ba Trung district, Hanoi	North
Hochiminh city University of Agriculture and Forestry	Linh Trung ward, Thu Duc district, Ho Chi Minh city	South
Banking Academy	12, Chua Boc street, Dong Da district, Hanoi	North
Quy Nhon University	170, An Duong Vuong, Quy Nhon city, Binh Dinh province	Central
Northwestern University	Quyet Tam ward, Son La city, Son La province	North
Tay Nguyen University	567 Le Duan, Buon Ma Thuot city, Dak Lak province	Central

In addition to the primary data collected through qualitative research, the article uses secondary data from the "Summary Report of Piloting Renewal of Operational Mechanisms for Public Higher Education Institutions under Resolution

No. 77/NQ-CP dated October 24, 2014 of the Government in the period of 2014-2017" of the Ministry of Education and Training. The author also collected reports from 8 selected universities for study purpose.

Currently, most public universities have been operating under the old mechanism that means universities are covered by the government with majority of operating and investment costs. They are not responsible for the quality of training products and are not accountable to learners and society. In such a context and conditions, universities do not fully want to transition to autonomous universities. This shows that there are many barriers, obstacles and bottlenecks for the transition process. From the results of analyzing data obtained through qualitative research, desk research with secondary data, this article has discovered some internal factors of universities that prevent the transition to autonomous model. The following section presents the main research results from considering the impact of internal factors on this process.

### ***3.1. Awareness of university autonomy is not right***

Awareness of university autonomy is not right and not comprehensive, which is considered a major factor affecting the transition to autonomy. From the viewpoint of some interviewed leaders the concept of university autonomy is only partial autonomy. Autonomy is not seen as an operational mechanism to enhance the efficiency and quality of training, but only as a measure to reduce the burden on the state budget. There is one thing in the discussion. All of interviewers affirmed the need to grant autonomy to universities, but they did not agree to immediately implement and fully exercise autonomy. Universities want to give partial autonomy firstly and then fully autonomy following to a route in a certain time. The research results also show an understanding of university autonomy in leadership groups (including representatives of the board of directors, party committee representatives and leaders of departments) and a group of lecturers and staff.

There are many different opinions when answering the question: "Do you see the need to grant autonomy to universities? If giving autonomy, how should it be given? To what extent?" Although arguing that university autonomy is necessary and an inevitable trend, but many university leaders suggest that university autonomy is primarily financial autonomy, followed by organizational autonomy and human resources and academic autonomy. From that awareness, the university's leadership representative said that at present, the university cannot be financially autonomous due to the limitation of training in the fields of engineering and agriculture and forestry only, majority of students come from rural areas. The university has many difficulties in enrollment and it is difficult to increase tuition. In this respect, there may be some ideas of the university leadership representative.

(1) Representative of Hochiminh city University of Agriculture and Forestry said that: *"In term of financial source, students mostly come from rural areas, so autonomy is completely difficult, still need the support of the government on funding. Tuition is currently low but increasing tuition fees will be difficult in enrollment. The university has a lot of practical works, spending on practical training, while most students come from rural area, so it is difficult to raise tuition."*

(2) Representative of Northwestern University: *"The biggest difficulty facing the university is the limited financial condition. Beside funding from state budget, university's revenues come from mainly tuition. Meanwhile, the number of minority students is relatively high, the university located in an extremely difficult area. It is impossible to increase tuition fees and even the university could not charge fees close to the tuition ceiling as stipulated by the Ministry of Finance."*

Based on that perception, most of university leadership representatives proposed that universities have not currently implemented autonomy yet. The university just only implement partial autonomy, primarily financial autonomy. Most university leaders said that if they switched to university autonomy, the university could only be partially autonomous, still want to receive funding from the state budget and public investment for the university. In addition, some university representatives (for example, representatives of Kien Giang University) want the university to be autonomous in training and scientific research, human resources and organization.

The comments obtained from the faculty and staff showed that the perception of university autonomy was more unilateral. There are even employees who do not define what university autonomy and the content of university autonomy means. Some respondents seem to be uninterested in university autonomy, considering it as a job of university leaders. Meanwhile, others worry about the risk of losing jobs or increasing workload when the university moves to autonomy. There is even an opinion that university autonomy is a process of socialization, increasing tuition fees, taking away the opportunity for university students in disadvantaged areas. For example, there is an opinion of a lecturer from Quy Nhon University: *"Autonomy is essentially socializing education but private investors will only invest in the area expected potential high profits. Area such as basic science and pedagogy (such as Quy Nhon University) with low interest from investors should still have the attention and investment of the government."* Research results in the university autonomy assessment project chaired by the Ministry of Education and Training (2017) also showed that there is a certain difference in the autonomy viewpoint between the self-control and non-autonomous schools.

**Table 1. Compare the views of the areas that are or can be autonomous between two groups**

		Group of university		Total of observation
		Autonomy universities	Not yet autonomous universities	
Financial Autonomy	Number of Selection	1076	222	1298
	% by group of university	89.6%	46.8%	
	% compared to total observations	64.2%	13.3%	77.5%
Organisational and personnel autonomy	Number of Selection	660	306	966
	% by group of university	55.0%	64.6%	
	% compared to total observations	39.4%	18.3%	57.7%
Tuition autonomy	Number of Selection	729	206	935
	% by group of university	60.7%	43.5%	
	% compared to total observations	43.5%	12.3%	55.8%
Investment and purchase autonomy	Number of Selection	550	193	743
	% by group of university	45.8%	40.7%	
	% compared to total observations	32.8%	11.5%	44.4%
Training and scientific research autonomy	Number of Selection	773	312	1085
	% by group of university	64.4%	65.8%	
	% compared to total observations	46.1%	18.6%	64.8%
Other autonomy	Number of Selection	55	14	69
	% by group of university	4.6%	3.0%	
	% compared to total observations	3.3%	0.8%	4.1%
Total of observation	Number of Selection	1201	474	1675
	% compared to total observations	71.7%	28.3%	100.0%

Source: Ministry of Education and Training, 2017, *The summary report on piloting of renovating the operational mechanism for public higher education institutions under Resolution No. 77 / NQ-CP dated October 24, 2014 of Government period 2014-2017.*

### **3.2. Human resources: lack of high professional personnel and difficult to attract high-quality human resources**

Human resources in public universities are one of the key factors to ensure the transition to university autonomy. The comments received from the university leadership team at in-depth interview show that most universities are in shortage of high-level personnel (for example, professors, associate professors, doctors) and difficult to recruit high-level personnel due to salary policy is not attractive and working conditions at the university are not happy. Here are some comments:

(1) Opinions of the representative of Kien Giang University: "Full-time lecturers are still not good enough. They come from many different units (from the branch of Nha Trang University, recruited from the provincial agencies, new recruitment) mainly master's level."

(2) Opinions of representatives of Northwestern University leaders: "High-level academic and academic lecturers have a low proportion; it is difficult for university to attract lecturers from elsewhere, but it is also difficult to develop internal resources due to limitations in level of foreign languages of lecturers and financial resources of the university."

In fact, most public universities are unable to hire highly qualified lecturers while training to improve the capacity of current lecturers is not easy. On the one hand, universities with limited financial resources cannot invest long-term for teachers. On the other hand, faculty members also have financial constraints that cannot afford to spend a small amount of income on learning at higher education. Current salary policy does not attract talent to the university and it is difficult to retain good people for teaching and scientific research activities. Moreover, many universities are limited to enrollment quotas because they do not meet the requirements for the proportion of lecturers who are doctors, associate professors and professors. This leads to the lack of works in the university, and the income continues to decrease. Some lecturers increase their income with jobs outside of teaching and researching at universities. Most universities lack of highly qualified and experienced staff. The well-trained young teachers are not comfortable with their work at university due to low income.

The data obtained from researched universities shows that the proportion of highly qualified lecturers accounts for a very low rate compared to universities that have been autonomous (see Table 3). In the group of selected schools, the rate of professors is less than 1%, even without professors, and the proportion of professors is similar except for some schools with over 1%. The proportion of lecturers who are PhDs is also quite low, even below 1% (Northwestern University) or less than 5% (Kien Giang University).

**Table 3. Human resource structure by the function, degree of lecturers, 2017**

*Unit: %*

	Kien Giang University	Tay Nguyen University	Northwestern University	University of Transportation	HCM city University of Agriculture and Forestry	Banking Academy	Quy Nhon University	The group of autonomy universities
Proportion of professors	0.04	0	0	0	0.02	0.01	0.01	1.12
Proportion of Ass. professors	0.12	1.86	0.05	0.04	3.17	0.21	0.02	7.25
Proportion of doctor	4.47	9.85	0.88	17.56	14.64	14.47	20.14	20.6
Proportion of master	65.85	38.48	61.73	48.22	42.11	59.12	52.23	46.0

a. Data quoted from "The summary report on piloting of renovating the operational mechanism for public higher education institutions under Resolution No. 77 / NQ-CP dated October 24, 2014 of Government period 2014-2017".

Source: author calculated from the data reported by the university, 2018

### ***3.3. Revenue of university depends on the funding by government while other income is quite small and not diversified***

Limited financial resources are one of the biggest barriers. All groups in the selected schools have also mentioned this factor in terms of the university's revenue heavily depending on tuition while the school could not increase the tuition fees for minority students, or student of pedagogy is exempt from tuition fees, or students come from rural areas. The comments from leaders, lecturers and staff have mentioned common causes of weak financial resources as following:

First, students of the university come mainly from rural areas, so it is difficult to increase tuition fees. Secondly, students of pedagogical disciplines account for a large proportion while the government exempts this sector from paying tuition fees. Third, total of students is small because of not attracting learners. Fourthly, the university is not possible to conduct research projects on technology transfer or consultancy due to limitations in high-level human resources and infrastructure for research. For example, Northwest University is in the region with the lowest socio-economic development indicators in the country. Students are mostly local people. The representative of Northwestern University said: *“The biggest difficulty facing the university is the limited financial condition. Beside funding from government, revenue of the university is mainly tuition.”*

Another university located in the Southwest region, Kien Giang university was established in 2014, is in the basic construction stage currently. Comments of Kien Giang University: *“The current revenues are not enough to train and foster lecturers and to attract good teachers and scientists to work with the university.”*

Another opinion from Quy Nhon University: *“Tuition fees still have to be framed and because public schools should not be fully autonomous in collecting fees due to there are many students who receive subsidies from the government. Increasing tuition fees will make the university harder to enroll students because students studying at local universities find it hard to accept high tuition fees.”*

Or the opinion of the representative of HCM city University of Agriculture and Forestry: *“Students mostly come from rural areas so it is difficult to be fully autonomous. The university still needs the support of government. The tuition fee is still low, but the increase in tuition fees will make more difficult in enrollment.”*

In terms of revenue structure of the selected universities, revenues from the government account for a high proportion and are particularly high (except Hanoi Open University) (see table 4). Revenues from the state budget accounted for 20% and more than 20%, even accounting for up to 2/3 of the university's total income, such as Northwest University, 68.54%. In terms of revenue per capita, the revenue of

non-autonomous universities is also low compared to the universities that have been autonomous.

**Table 4. Revenue per capita and the proportion of revenue from the state budget in the total income of the university, 2017**

	Name of university	Revenue per capita (mil VND/person/year)	Revenue from state budget (% compared to total revenue)
<b>Universities that have been autonomous (24 months and more than)</b>			
	Hochiminh city Economics University	890.724	10.28
	Hanoi University	357.117	14.87
	National Economics University	541.270	6.18
	Finance and Marketing University, HCM city	619.357	7.75
	Industrial University, HCM city	440.014	1.92
	Food Industrial University, HCM city	398.433	0.35
	Open University HCM city	102.005	3.14
	Electric Power University	544.037*	2.04*
<b>Universities that have not been autonomous yet</b>			
	Hanoi Open University	-	0.1
	Kien Giang University	142.882	41.25
	University of Transportation	260.847	21.7
	HCM city Uni. of Agriculture and Forestry	317.964	23.98
	Banking Academy	491.755	27.73
	Quy Nhon University	228.774	36.25
	Tay Nguyen University	259.406	29.5
	Northwestern University	185.166	68.54

\* Date in 2016

Source: author calculated from the data reported by the university, 2018

***3.4. The real power of the university council in the organisational structure of an autonomous university has not yet been institutionalized and guaranteed in practice (with universities that have established a university council) and have not been properly recognized (with universities have not yet established)***

First, in universities that have not been autonomous yet but have established the university Council, in general, the opinions of the university representatives all believe that the university council has not really existed as a part of the university organisational structure. The university council has no real power, not be ensured operating conditions such as finance and personnel. Activities of the university council are not effective. University council members have no obligation to bind. The university council has not yet played a supervisory role, there is no regulation on the relationship between the university council - the Party executive committee - the university board. As commented by a representative from Quy Nhon University:

*“The activities of the University Council so far are not many, not clearly showing the results to the outside. University councils are not granted their own annual funding. The members of the university have not seen the supervising role of the university council in the activities of the university ... The relationship between the university council and the party committee is currently unclear ... The role of the Party in the university is now decisive determined in all aspects ... the role of the university council is not yet promoted and is like a second union, there is no real power.”*

Comments of representatives of Kien Giang University:

*“The chairman of the university council has no real power. The current university council is only formal and inefficient because it has not clearly defined the role of the chairman of the university council, party committee, board of directors, the functions and duties of the university council are not clear, no specific rights and responsibilities of the chairman and members of the majority are involved in management at the units in the university. The chairman of the university council is currently a manager under the Principal's authority so the administration is also difficult.”*

Comments of representatives of HCM city University of Agriculture and Forestry:

*“The university council has organized several meetings since its establishment, not focusing on the details of the university. Activities so far are not strong enough, have not played a monitoring role. No regulations have been established regarding the relationship between the university council and the Party Committee, even with the university board.”*

Secondly, for the universities that have not yet established the university council, the awareness of the role and power of the university council is not correct, leading to hesitation and embarrassment in preparing the conditions for establishing

the university council. The main obstacles are: determining the role of the university council and the council members, seeking qualified candidates under the provisions of the higher education Law and the operation mechanism of the university council.

As a representative of Northwestern University commented: "There is no regulation on who will pay for the activities of the university council. If the permanent members operate inefficiently, it will cause waste. Although prepared from 2015 and recommended many times from the governing body, the establishment of the university council still stumbles on the spot because it cannot find human resources to meet the requirements for university council members. There has not been specific guidance on the establishment of the university council. There is no experience in setting up university councils while reference to experiences from other universities in the country has not been conducted properly and in sufficient detail."

Remark from the representative of the Banking Academy: "The establishment of university council was proposed in 2003, but the number of universities with university councils is very small. This practice shows that the organization and effectiveness of university council are not really good and entangled, leading to irrational in operation of university council; Selecting members who are willing to participate in the school council is not easy, will create conflict between 3 powerful apparatuses: the school council - the party committee - the board of directors."

#### **4. Discussion, Conclusion and Recommendation**

From the research results mentioned above, some comments can be drawn about the impact of internal factors on the transition to university autonomy of the public universities as following.

(1) Due to being nurtured in a subsidized mechanism that lasts for decades, public universities seem to be aware that university autonomy means that universities must "self-swim", be alone and have not any help from the government. With the awareness of university autonomy are quite unilateral and inaccurate, public universities recognize that the autonomy process will make the university difficult in term of financial due to the loss of " budget milk" and must do by themselves to take care of the input while the system of policy institutions on autonomy has not been completely established. Misperceptions about university autonomy are not without cause. Firstly, university autonomy is only piloted in a small number of public universities while lacking the conditions to ensure true autonomy. Secondly, the results achieved in the autonomous pilot universities have not really persuaded the universities to be autonomous and not yet practiced as good evidence of autonomy. Thirdly, communication about university autonomy has not been given adequate attention both on the general level and in the universities. In autonomous universities,

learners seem to be worried about the increase in tuition due to autonomy, the workers are worried about rearranging the organization leading to job loss or being converted to non-preferred jobs. In un-autonomous universities, the communication about autonomy is even more limited or made unprofessional, unplanned and ineffective.

(2) Public universities located in disadvantaged regions are even more reluctant to transition to university autonomy because they can not see any advantages in terms of resources. The biggest problem here is that universities themselves do not want to do autonomy so they do not actively create conditions for transition to autonomy. According the rule of law, universities need to develop and issue a system of documents to serve as a basis for the autonomy of the university, to set up and operate the university council and reorganize the personnel apparatus before transferring to operate under the autonomy mechanism. Although instructed and directed very early on establishing university councils, majority of universities are nor ready to establish university councils, do not ensure the conditions for the university council to have real power.

(3) The lack of tuition revenues due to reduced enrollment scale when schools do not attract learners, with limitations in research and advice capacity and technology application transfer making the financial situation of most universities to be worse. If switching to full autonomy, universities will face more severe financial shortcomings. The paradox is that to improve the financial situation, the school needs to recruit more learners but lacking the resources to build new programs, recruit high professional lecturers and implementing communication. On the one hand, public universities must cut costs when the government cuts down funding and needs additional investment to improve resources.

(4) In this context, the pressure from the government is not strong enough. As a result, universities have more reason to delay the transition of university autonomy. In addition, the general environmental conditions of university autonomy still have many shortcomings, which makes universities not ready to be autonomous. The education market in general and higher education have not been formed properly. Along with it, the state management for the system of public universities is currently not renewed to motivate universities to shift to autonomy.

To promote the transition to university autonomy of Vietnamese public universities, there is a need for synchronous solutions from both the government (macro-level) and solutions from the universities themselves (inside university). Some solutions are proposed as follows:

(i) To classify and evaluate public universities that are un-autonomous, set up a roadmap and transition schedule for all universities, considering it a mandatory deadline. This must be chaired by the Ministry of Education and Training in

coordination with relevant ministries. Sanctioning measures should be issued in conjunction with universities that do not undertake university autonomy without rational reasons. At the same time, consider applying financial measures such as cutting funding from the government and issuing financial and investment policies associated with the performance of universities.

(ii) Converting financial allocation methods to ordering and bidding methods on training funded by the state budget for all universities. The government places orders on the number of students as planned and applies only to specific industries.

(iii) Develop and complete a system of legal documents on implementing autonomy of universities related to finance, organisational, human resources and academic autonomy

(iv) Completing the organizational structure of the university, ensuring that the university council has real power; establishing the relationship between the university council, the party committee and the board of directors, which should ensure the independent role of the university council in making important decisions such as university development strategies and early strategies. private, human resources, ...

(v) Internal communication activities should be strengthened and focused on university autonomy and the need to transition to autonomy; Diversifying communication activities such as organizing seminars, discussions and so on.

In conclusion, the transition to university autonomy of public universities in Vietnam still faces many obstacles both inside and outside the university. Internal factors are emerging as the main barriers to this process. The paper has identified and evaluated the impact of factors including: awareness of leaders, lecturers and university staff on autonomy, restrictions on high-level personnel, limited resources financial resources and organizational structure are incomplete. Incorrect perception of autonomy and weakness of financial resources are two important factors that slow the transition to university autonomy. However, in conjunction with the above internal factors, there are other internal factors that the article has not mentioned and external factors. Therefore, further research can and should assess the impact of other factors in a more comprehensive and detailed way. In addition, the research sample should also be scaled up and supplemented with other representatives from non-autonomous public universities.

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# USING PROBLEM-BASED LEARNING IN THE THAI LANGUAGE CLASSROOM, PRINCE OF SONGKLA UNIVERSITY

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## **Abstract**

*The results of this study are aimed at analyzing the outcomes of using problem-based learning in managing teaching and learning for university students who registered to study for Term 1/2561, Subject 896-439 “Words and Meanings” 3(3-0-6), Faculty of Liberal Arts, Prince of Songkla University, Hat Yai Campus, including 51 students altogether. The findings show that in management of teaching and learning the teacher should adapt her role as teacher to become more of a coach and facilitator, providing guidance to learners as they conduct research and independent study in the form of social problem posing, as in PBL (Problem-Based Learning). PBL has 5 stages of implementation, 1) Planning, 2) Teaching, 3) Execution, 4) Concluding Lessons Learned, and 5) Evaluation. Management of teaching and learning using the PBL structure can help learners to develop the type of thinking process that underlies studying and working in group contexts. Additionally, it creates a context for learning from doing practical work.*

**Keywords:** *Learning, Problem-Based Learning, Thai Language Classroom*

## **1. Introduction**

Srichairattanakul, J. and Saleekul, S (2018: 133) has stated that the current trend in education management has been focusing on learners because it allowed for continuous self-learning, creativity, situational problem solving, and teamwork working capability.

Problem-based learning was one form of learning that helped learners to solve specific situations. Lekhakula, A (2013) said that it was learning from experience by starting with the problems that arose in society through thought process and reflection, leading to knowledge and concept which will be used in other situations. Therefore, the problem would be used as a learning context. At the end of the process, the learners would be able to assess themselves about the learning process and what they have already learned.

In addition, Ploysaeng, K (2018: 137) said that the learning was to allow learners to mutually analyze the problems, brainstorm to find the cause of the problem, compose sense-making assumptions, exchange information obtained, know how to set self-learning objectives and help the group process to move effectively.

For this reason, the researcher was interested in organizing the problem-based learning activities in 896-439 classes, words and meanings 3 (3-0-6) as well as issues of spelling mistakes in various media tubes with the hope that students would possess the ability to learn how to work and solve problems as a team. The knowledge gained would, furthermore, enable the learners to have more qualities and develop their potentials they have already possessed according to the age range and in accordance with the goals of education development and Thai educational reformation in the current era.

## 2. Objectives

2.1 To analyze the results of using problem-based learning in teaching and learning management

## 3. Method

This research used the following research methods:

*3.1 The sample group included students who had registered to study for Term 1/2561, Subject 896-439 “Words and Meanings” 3(3-0-6), Faculty of Liberal Arts, Prince of Songkla University, Hat Yai Campus, 51 students altogether.*

*3.2. Participant observation was used for collecting data.*

*3.3 A test on PBL (Problem-Based Learning) activities was implemented as a research tool in the study.*

**Table 1: A test on PBL (Problem-Based Learning) activities**

<b>Ordinal</b>	<b>Causes of problems</b>	<b>Assumptions</b>	<b>Solutions</b>	<b>Information research</b>

3.4 Descriptive analysis was used to analyze the data and present the research results, as well as present conclusions and discussion of research results.

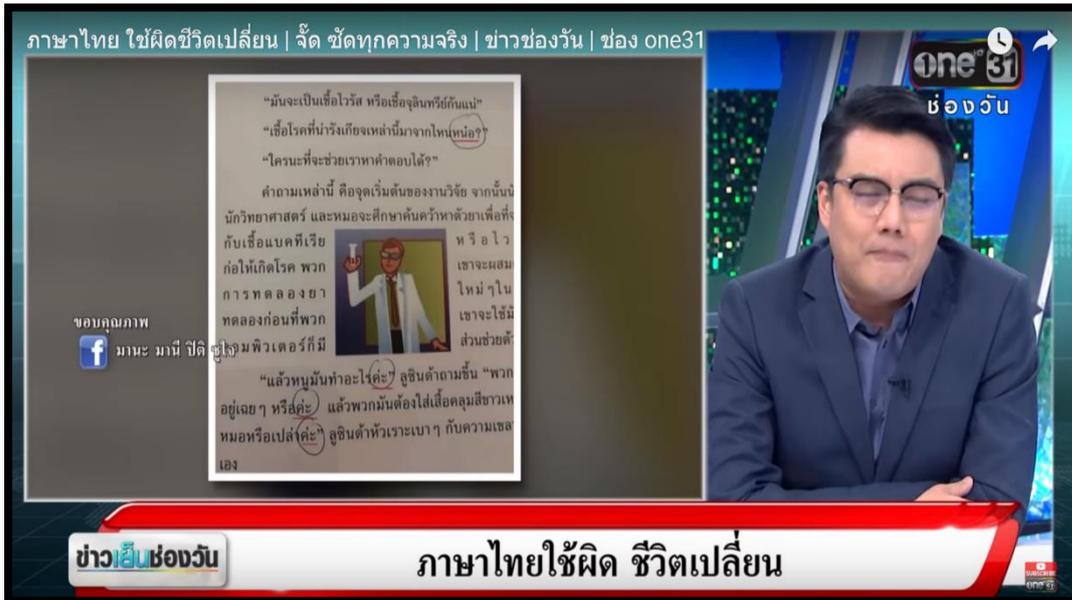
## 4. Results

This research was divided into seven subgroups: five groups with seven people each, two groups with eight people each, including one instructor in each group.

The process of analyzing problems were presented as follows.

1. The instructor assigned the problem of "Thai language. If you live your life wrong, you

will be changed. Judge, and swash all the facts with us, news on channel One 31 from <https://www.youtube.com/watch?v=bOL0Mapm8bM&t=14s>



*Source:* <https://www.youtube.com/watch?v=bOL0Mapm8bM&t=14s>

2. Students received some time to understand the underlying problems.

3. Encouraging group problem analysis to brainstorm what causes and assumptions were.

4. Assessing whether the current assumptions were consistent with the existing knowledge and what they were. Then linking knowledge and assumptions altogether in order to find solutions and information on the unknown issues.

The results of the research were summarized into 4 general principles as follows:

#### **4.1. Causes of problems**

The causes of the problem that the group samples have analyzed included 4.1.1 instructors, 4.1.2 accuracy checking, 4.1.3 media, and 4.1.4 others.

##### **4.1.1. Instructors:**

- 1) Lacking knowledge of language grammars
- 2) Teaching unfamiliar subjects.
- 3) Familiarity

##### **4.1.2. Accuracy checking:**

- 1) No content revisions/ fixes

- 2) Lacking responsibility
- 3) Lacking expert's examination

*4.1.3. Media: An influence from online media.*

*4.1.4. Others:*

- 1) Not seeing the value of using Thai language correctly.
- 2) Insufficient awareness
- 3) Environment
- 4) Using certain language groups.
- 5) Wrong memorizing process

#### **4.2. Assumptions**

Assumptions on the problem causes included 4.2.1 instructors, 4.2.2 behaviors, 4.2.3 knowledge, and 4.2.4 others.

*4.2.1. Instructors:*

- 1) Transferring knowledge incorrectly.
- 2) Focusing more on memorization than comprehension.

*4.2.2. Behaviors:*

- 1) Familiarity
- 2) Indecorous behaviors
- 3) Imprudence
- 4) Verbal and written language complication
- 5) Wrong context language use

*4.2.3. Knowledge: Tonal modulation errors*

*4.2.4. Others:*

- 1) Not paying attention to Thai language
- 2) Language change

#### **4.3. Solutions**

Solutions included 4.3.1 teaching styles, 4.3.2 media, 4.3.3 instructors, and 4.3.4 others.

*4.3.1. Teaching styles:*

- 1) Adjusting teaching based on age.

*4.3.2. Media:*

- 1) Reexamining contents before being published.
- 2) Using teaching materials.
- 3) Having papers reviewed by the Ministry of education before being published.

*4.3.3. Instructor:*

- 1) Being required to be graduated from Thai language major.
- 2) Being required to understand grammatical concepts.
- 3) Being received trainings.
- 4) Being quick to fix where mistakes are found.

*4.3.4. Others:*

- 1) Promoting Thai language use.
- 2) Searching for knowledge when being unsure.
- 3) Experimenting the system before a practical use.

**4.4. Information researched**

Information which would be researched included 4.4.1 instructors, 4.4.2 contents, 4.4.3 media, and 4.4.4 others.

*4.4.1. Instructors:* whether they taught in accordance with their qualifications or not.

*4.4.2. Media ethics:*

1) Has the Ministry of Education reviewed papers before publishing them or not and what were the processes?

2) Why did Thais make spelling mistakes?

3) Did the responsible authorities check for content accuracy before it was labeled?

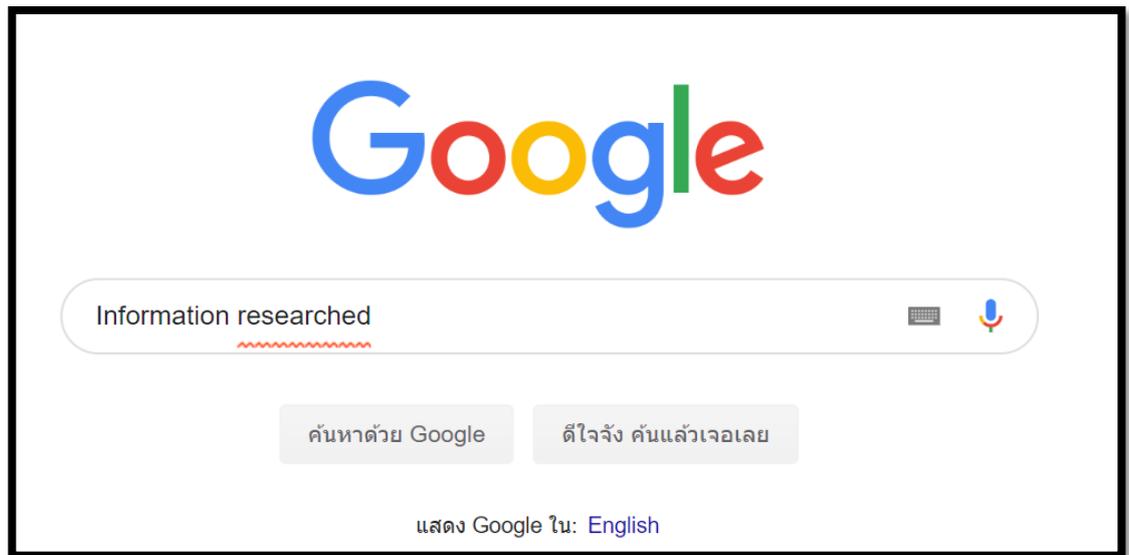
*4.4.3. Media:*

- 1) Dictionary



**Source:** <http://www.royin.go.th/?p=12161>

2) Library

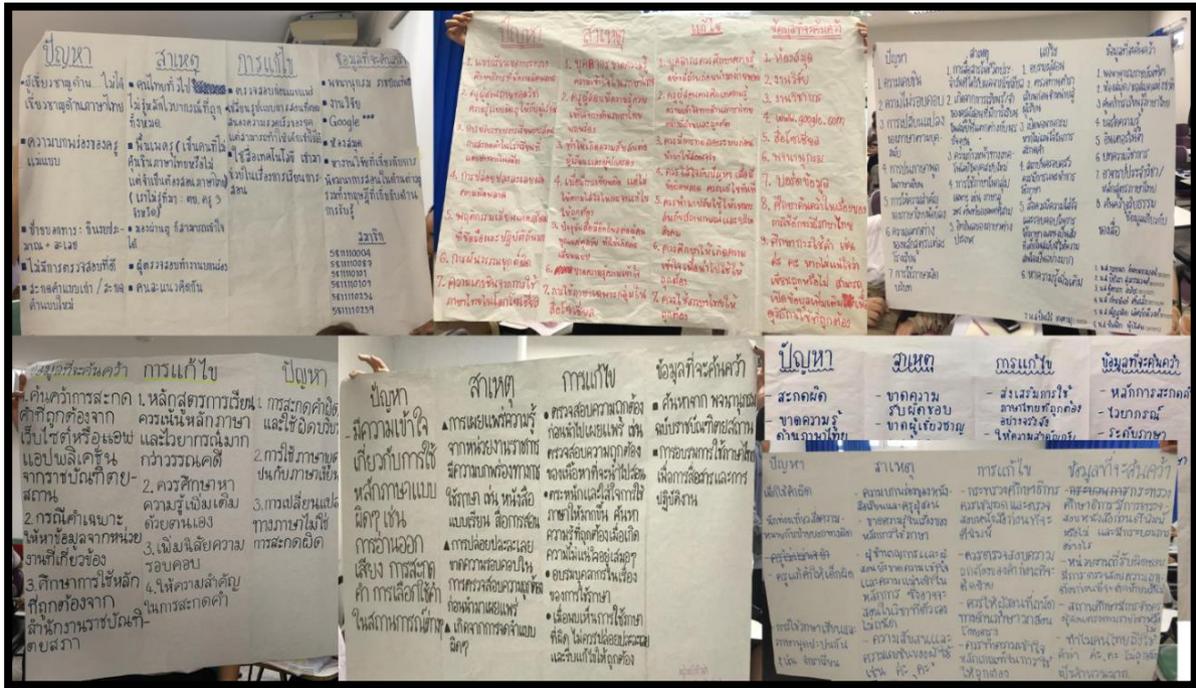


3) [www.google.com](http://www.google.com)

**Source :** <https://www.google.com/>

4.4.4. Content:

- 1) Grammar
- 2) Language Levels
- 3) Spelling



Picture 1 Using Problem-Based Learning in the Thai Language Classroom, Prince of Songkla University

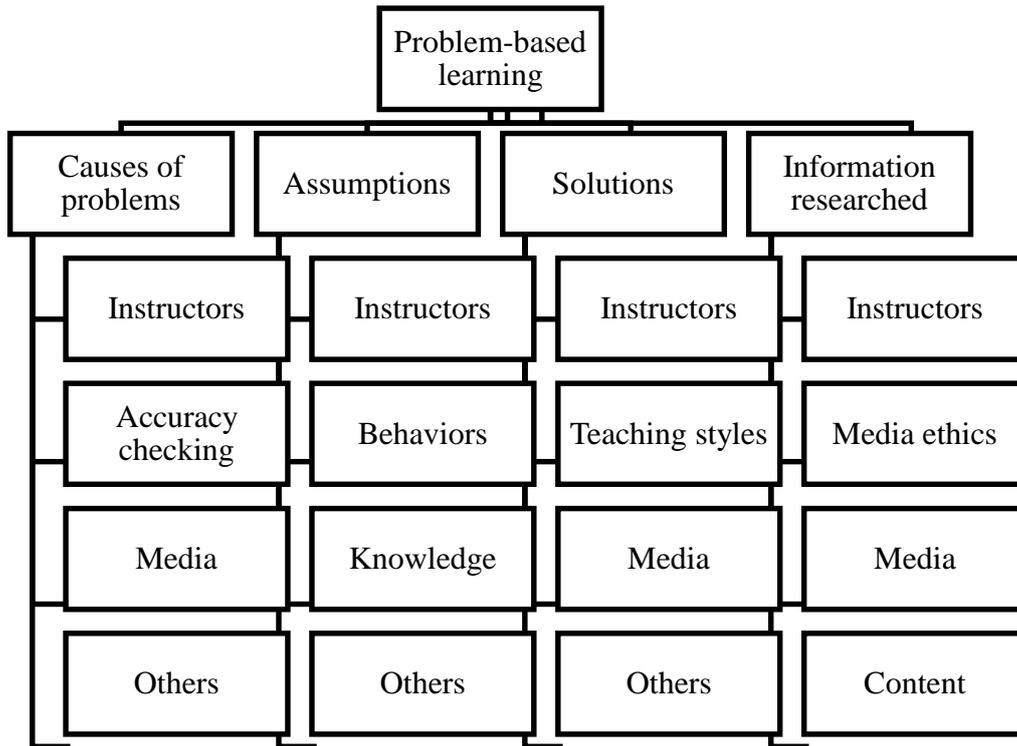


Figure 1 Using Problem-Based Learning in the Thai Language Classroom, Prince of Songkla University

### 5. Discussion and Conclusion

The results showed that the subjects analysed problems into 4 parts. They were the causes of problems, assumptions, solutions, and further information.

Then, learners researched additional information from various learning resources. This process enabled learners to be more on sustainable learning process due to the fact that they had to synthesize data until new knowledge acquired.

Hence, the problem-based learning began from the problem analysis occurring in society and being reflected by learners to figure out solutions. This process helped create an interaction amongst students in the group. Furthermore, it was a brainstorming method for the answers or a creation of new knowledge based on prior knowledge that the students have possessed earlier.

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# THE NEW CHARACTER OF THE LITTLE RED CAP ON THAI ONLINE LITERATURE

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## **Abstract**

*This article aims to compare the story of The Little Red cap from the original literature and online literary, based on the concept of Interpretation of the story with psychoanalysis approach to apply to study of the original by Charles Sparrow, from the 3 modified versions of Grimm's story books, online literature of Kao Than Fai, and Ceylon. The findings indicated that the three modifications of the works still have a similar points in the original story. There are, however, different points that is some contents and characters having been changed by the online authors. The Little Red cap who had a gentle heart good personality and beautiful appearance has become a psychotic child ruthless. That content is new character being interested by the online readers. Therefore, content modifying is the popular strategy of online authors that it lead to interesting reader who have understood the original version.*

**Keywords:** *The little red cap, online literature, psychoanalysis approach*

## **1. Introduction**

If we have to talk about a children story "The Little Red cap", which is considered to be known in the field of storytelling and the people know in the name of 'Le Petit Chaperon Rouge'. That storytelling about sex between people and animal. It was later published in early 16<sup>th</sup> century in a book which is a collection of tales and narratives, along with the teachings by 'Charles Sparrow', until the early 19<sup>th</sup> century was published. The story of The Little Red cap in the book "Grimm's fairy tales", also known as Grimm fairy tale. The content of The Little Red cap story was improved to some scenes with less violence.

The story of The Little Red cap, which has been updated to a new style that has become increasingly popular, online society from the story of a red hat girl that is cute, cheerful and full of clarity. But must be tainted with red blood and a young girl with a lot of psychological disorders, blood and a love of modernity that is active

in life many hunters are victims of The Little Red Riding Hood instead. According to Piriyaadith (2018) stated about the psychology analysis is able to analyze the actors in myth to understand why the actor behave and what is the reason influence. In the present that the readers change their behavior to search and read the myth, short stories, by online literature showing the change of Thai readers' behavior (Ruen-RuThai, 2018).

This study focuses on The Little Red cab in a more brutal form than in the past. From the comparison of The Little Red cab from the original with The Little Red cab that has modified the following 3 stories.

- The Little Red cab : Jacob and Wilhelm Grimm
- Little Bloody riding hood : Kao Tan Fai
- The Little Red Cap from the modified version : Ceylon

### **The Little Red Cap: Jacob and Wilhelm Grimm**

The story of The Little Red cab of the Grimm family is similar to the original Charles Sprailer, but there may be some scenes that have been cut. Is the scene of intercourse between humans and animals which is content that is not suitable for children but the story sequence has still been the same the original version. The Little Red cab is still the victim of the wolf. The hunter is the savior. And still have a few serious scenes, such as the scene in which the hunter took the scissors to scoop the stomach of the forest to save The Little Red cab and grandmother.

*“He used the scissors to cut the belly of the wolf. Passed for a while he also saw a red hat inside, so he cut the belly of the wolf wide open then The Little Red cab jumped out.”*

( )

### **The Little Bloody riding hood: Kao Than Fai**

This version of The Little Red cab has been posted on the Dek-D website. That was an adaptation of an old story which has a lot of completely changed from the original version especially the Little Red cab which comes in a new form. It is the little in a white robe that has a cruel mind hunt for wolves to sacrifice your grandmother. Her white veil was tainted with the blood that she had obtained from killing wolves and hurt the hunter. In addition, there is a mentally distorted mind from human beings, like the taste of blood and love of eating as if she was a wolf, but hidden in the body of a pure red hat.

### **The Little Red Cap from the modified version: Ceylon**

This version of The Little Red cab, the author stated that it was a modification. Therefore, the story may not be as realistic as it should be. The Little Red cab be called

"Hana", a young girl who loves hunting and not gentle. She found a wolf on the way and wanted a skins wolf for make a coat. The wolf became a little dog who had to escape to survive until the arrival of Grandma's house. Grandma eats wolf, Hana is angry and hates her grandmother who is snatch for her wolf.

From these 3 versions, will be able to clearly see the common points and differences of the story. As well as seeing the influence of online literary users as to why the story of The Little Red cab in the new form has to be adjusted for the story to become more violent from the original version. There will be issues raised in the following reviews.

### **New character of The Little Red Cab (Blood)**

The story that has been modified from the original version showing the common point of the story that is the sequence of events, beginning with the mother of The Little Red cab telling her to visit her grandmother who is sick at the forest by ordering that they do not talk to strangers. The Little Red cab met a cunning wolf who was planning to catch her. When The Little walked to the house then her found that Grandma looked stranger and had many doubts about Grandma's body. In the end, there will be a hunter to help her and grandmother. Therefore the story even has still ordered the same original but the characters were changed. The examples of characters changes as follow;

#### **Example 1 The Little Bloody riding hood**

*"The little turned her Bloodstained duty and fragments of birds in the mouth . The big blue eyes are fixed on the Rangers' bodies to swallow."*

*(Little Bloody riding hood: เกรทท์พีพี Dek-d.com 2014 : online)*

#### **Example 2 The Little Red Cap from the modified version**

*Hana ran into her grandmother and then slit her grandmother. Gut the grandmother to eat wolves and kill wolves, leaving them to make sweaters. "*

*)The Little Red Cap from the modified version: Ceylon Dek-d.com, 2013 :  
online (*

Such story showing clearly the behavior of the The Little Red cab Aggressive speaking, using a knife to cut the stomach gutting out the grandmother's gut to eat the wolf

The story depicts the horror of The Little Red cab character who is harassing the hunter, who is the character in the original story. In addition to changing the character of The Little Red cab, also changed the role of Little Red Riding Hood from being a naive little boy as a hunter And let the wolf become a victim instead so that the story has more angles.

In addition, when the character is modified, it was show the story being changed especially at the end or the ending which lead to most modified part

### **The end of the cunning wolf**

From the original literature, Little Red Riding Hood and Grandma get helpfulness from the hunts man. The wolf was killed by the hunter for punishment but in modified online literature the wolf became the victim of The Little Red cab.

### **Example 3 Little Bloody riding hood**

*"Grandma, why is your grandmother's mouth so scary !!!" The little girl caught the mouth of the wolf, opened more ... more ... until broken into two Little grin Lick their sharp teeth Before gouging the wolf's heart Come to eat deliciously ... "*

(Little Bloody riding hood: เกาทัณฑ์ไฟ Dek-d.com, 2014 : online(

From the examples and comparisons of the 3 adaptations of the story, when used to connect with the needs of literary users in modern times Will lead to an understanding of the influence of literary users that have resulted in changes in the story of The Little Red cab from the story teachings of children and youth To novels, short stories, fantasy or horror genres Which has been published, read on the famous website, such as Dek-d.com Which can be read every gender and every age Without restrictions on the subject of intense expression People therefore read a lot of online novels today.

## **2. Summery and Discussion**

### **Influences on literary work**

At present, the story-telling style of The Little Red cab has received less attention or popularity. Because it is a written work with a normal story as well as the era in which the behavior of the people in the society began to change direction which is the result of a more open world, especially on social networks thus allowing people to choose to use literature as they like Literature is more diverse, but with most writers on the online world that are children. Picking up the plot from old literature is still a technique that can create a new storyline.

The influence mentioned above Literature about The Little Red cab is considered a good option that can be adapted to the needs of today's readers. Because it is a story with interesting plot the operation is not very long. It was not very complicated and can easily remember the story. But because it is a story that people know most, therefore, the adaptation of the story must be unique from the original. Must be able to make the reader feel broken, excited and unexpected that will happen like this in story (Climax Point). Which makes the role of The Little Red cab that is

the main character in the story changed from the original, which is the point that makes people feel more interested in this story. Because if The Little Red cap was changed to be a psychotic child. There is a brutal mind that contradicts or contrasts with the personality of the general girl that others see. And wolves have to be many people who have been hunted by themselves. The story will have a mix of fantasy and horror. Which is the type that the online literary enthusiast now likes and can access most easily. But if looking at the value that should be hidden in the story of these literature. Found that there was only a purpose that would give the reader the enjoyment or edification only. But did not give moral values according to the purpose of the story. Little Red Riding Hood. That has been used as a tale to teach children the heart like in the past.

However, even though The Little Red cap is currently being altered, the story goes a lot or has more intense content that has become a horror writing by default but it's strange that people don't feel like a little red hat in the past. To pay attention and love the little boy with a bloody hat is more cruel, so when there is violence that is passed on through the characters. Literary users must know and reflect on the value of these works by themselves. In order to maintain the value of literature which is a national heritage. Even in the form of a book or online.

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# THE MAIN PROTAGONIST CHARACTERS IN THAI ONLINE LITERATURE: UGLY DUCKLING SERIES

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## **Abstract**

*This article focuses on the strategies of the main protagonist character in Thai online literature and the values of characters. The data is the Ugly Duckling novel being online literature which was analyzed the background and personality both outside and inside to lead the study of main protagonist character how is the strategy built and linked to the reflection of the value protagonist. The result indicated that all 4 female protagonists have similar background which most of the characters come from high level of their families and having a similar external personality likes the distinctive look and appearance but there are differences in the aspects of internal personality. This is caused by different social conditions affecting the character of the character, both positive and negative behaviors such as weakness, self-confidence, fear, courage, expression, determination and attention. These are the strengths created through tactics by allowing the character to be the subject of the story and their behavior are created in both complicated and uncomplicated ways including creating problems for the characters. This lead to have the conflict in their mind and social values. These things that make the characters blend between the original and the new imagination which will lead to the reflection of the value of the characters in these 4 novels in terms of conveying values within the minds of women that are above the external appearance from ugly person became beautiful person.*

**Keywords:** *literature online, Ugly Duckling, Thai literature online, Protagonist*

## **1. Introduction**

The character is an important element that can make the story or storyline to be fun. Which may be caused by the character that caused the crux of love or conflict in the story. the character is the person who assumed the role of the story to continue or as the cause of events in the story In many literature, readers will remember the personality, character, and role of prominent characters in that story very well or

sometimes remember the character of the character better than other elements of the story, but with the world of literary writing in the present day is open. It is making most of the writing work to be published on the website. This online social openness has resulted in the creation of characters in online literature that are different from those in general literature, which may reflect the image of strange characters. Modern and is a young, good-looking, wealthy person in response to cyber-readers.

Therefore, this article aims to study and analyze the strategies of creating female protagonists in all 4 Ugly Duckling online books, including the Perfect Match by May12 writer, Boy's Paradise by Stamberry writer, Pretty (Pity) Girl by Milkplus writer and Don't look If you don't want to fall in love by Jaoplanoi writer. The four novels, which have been published on the www.Dek-D.com website and have been very popular, and then the publisher publish as a series of fiction books and has been used to create a series on GMM25 channel at a later time.

## **2. Research objectives**

1. To study strategies for creating female protagonists in “Ugly Duckling” online novels

2. To study the values that reflects through female protagonists in “Ugly Duckling” online novels

## **3. The Finding**

Online fiction “Ugly Duckling” series are a collection of 4 famous online fiction writers. The creation of a female character to be the subject of the story, through telling the story of his unattractive life. In this article focus on the presentation of character creation strategies. This is different in personal personality and inferiority that the author created. Researcher will choose to analyze the female protagonist from all 4 topics, include:

1) Mami from Boy’s Paradise by Stamberry

2) Junior from Perfect Macth by May12

3) Maewnam from Don’t by Jaoplanoi

4) Alice from Pretty )Pity( Girl by Milkplus

### ***3.1. Analyze the characters***

#### ***3.1.1. Backgrounds***

##### **1) Mami from Boy’s Paradise by Stamberry**

Mami is a beautiful girl studying in university, she is the love of friends, but it is commonly known that she is often only with girl-friends. Mami was born into a

wealthy family and had only one stepmother. Causing her to feel that she was cared for by her mother and mother as the woman who knew her best Including she attending school for girls all from childhood. She has a close friend who knows that is “Namsom” which has lived together since childhood. Namsom is a part of Mami's life and the love that Mami has for Namsom is more special than friends. But then one day Namsom disappeared and 3 strange young men are appear who had to come to live with Mami. Mami's mother thought to bend the habit of turning his daughter back to like men. Mami has no choice, therefore having to comply with her mother, provided that if she has a boyfriend, Namsom will come back home with her as before.

## **2) Junior from Perfect Macth by May112**

Junior is a young woman that is full of wealth, education and family. Her live a luxurious life association with friends at the same social level. And there is a young man who loves that she thinks he loves her with heart and not her face and position Also, her parents influence in society. In addition Junior is also 18 years old woman who looks very beautiful. But then the fate turns back. When one day, her friend said that her face looks fatter, not beautiful as before. So she decided to go over on the advice of friends. But this change herself caused an infection and made her become "Miss Ugly" that both those around her lover or even her own family could not accept with her ugly face. This great misfortune caused her to flee to live in the countryside which without people in the high society to heal the face. She disguise herself as an ordinary girl without money and beautiful faces anymore.

## **3) Maewnam from Don't by Jaoplanoi**

Maewnam is a girl with inferiority. She told love the boy in the same room on Valentine's Day but she rejected by the boy. And then she did not dare to face the outside. She did not go to school, did not meet people, locked herself in the house, and always put a bucket on her head. The clues in her heart make her become a feared person. And the heart is very weak. Her parents tried in every way to allow her to come to outside but many times it is not effective until finally when Maewnam were 17 years old, her father and mother forced her to go to school again. Even if she had to wear a bucket to go to school.

## **4) Alice from Pretty )Pity( Girl by Milkplus**

Alice is a young girl who was raised in a warm family. Her parents have a resort business in Chiang Rai. Then Alice stay apart with her parents and she had to live alone. Originally, Alice was a high school student who was full of brilliance. She loves photography, she like smiling and laughing like a typical girl in a teenager but with some accidents that caused her to become a messy person. She has a close friend

named “Alice” as well as her and has a boyfriend named “Tom”. Both of them help her in all matters. Everything seems to be going well but then one day, the best friend, Alice, who always helped her, had to travel to study abroad. Causing her forgetfulness to become a big problem in an irreversible life because even her boyfriend could not tolerate her forgetfulness until he had to break up. Alice feels lonely and weak. She saw that she was an unfortunate person and often expressed by crying out.

### ***3.2. Personality***

#### **1) Mami from Boy’s Paradise by Stamberry**

- External personality

Good looks, charming, big eyes, curly hair, long blonde, white skin, good dress

- Internal personality

Mami is a very confident woman but hiding the confusion within the mind That she really likes women or likes men and even though she acted like she didn't think of anything, but having to live with a man she had never known before became her biggest concern. But with the care of those around you and her friends, Mami looked at Skip her own uneasiness and do as the mother ordered.

#### **2) Junior from Perfect Macth by May112**

- External personality

Junior is a white person, beautiful, slim and long hair

- Internal personality

With the fact that Junior was born in a rich family. Causing her to have a rather narcissistic character. Before her faced an unfortunate appearance of ugliness. Junior has more habits and attitudes that give more importance to external appearance than anything else. This can be seen from her mention of education that is not as important as the face but at the same time, although she often has a habit of admiring herself but inside her mind, she reflects on her self-confidence as a person who thinks very much that others don’t like hers. Therefore she made every effort to be accepted in the society in which she lived. After which she became “Miss Ugly” and went to live in Phitsanulok province among the people who have a kind and do not look at her at the position or face. It made Junior attitude changed.

#### **3) Maewnam from Don’t by Jaoplanoi**

- External personality

She is a woman with a sharp face, black hair, big eyes, a prominent nose, a cute little body.

- Internal personality

Maewnam has an embarrassing character, fearing and fearing the eyes of others at all times. Therefore when in a situation that must reveal her face. She was so angry and embarrassed. In addition, she is a stubborn person, she always struggles with her parents because her father likes to force her to socialize with good hope

#### **4) Alice from Pretty )Pity( Girl by Milkplus**

- External personality

A tall girl, white skin, full eyes, cute face and beautiful smile.

- Internal personality

Alice is a person who does not have self-confidence and therefore she does not dare to express her inner thoughts and feelings to cause the people around to bully her. She often cried out when she felt weak.

### ***3.3. Character creation strategies***

#### ***3.3.1. The role of female characters as the subject***

According to the analysis of the female protagonist from 4 stories of the Ugly Duckling novel, both in terms of The background and character of each character that is different. It can be seen that these four novels are consistent in the creation of female characters to play an important role in the story. Through the narrative in the corner of the heroine who has experienced bad luck in life. Made her feel like an ugly duckling and not being accepted by people in society. Until she met a male protagonist. The events of the story were described through the perspective of the heroine both talking about the character of the male protagonist, their own feelings or even admiring themselves. Until making the stories go smoothly through the creation of female characters. This as mentioned in the definition of the protagonists above that the crux may be a conflict that arises within the mind of the character itself or caused by others but creating a knot for the character is the focus of the story. Especially in fiction writing that requires characters to create attraction for readers.

#### ***3.3.2. Creating the character of the protagonist***

Creating a character or a distinctive character for the character is another important aspect that makes the story even more interesting because if the character does not stand out in terms of character or behavior, it may make the story less interesting because there are no clues from the characters. Therefore, the main character creation can be divided into 2 types:

- Flat characters are characters that have unpredictable behavior, often with only one special feature. Characters are difficult to characterize or summarize, such

as arrogance, weakness, and will continue to look like this throughout the story. Which makes it easy for the audience to understand the characters and remember the characteristics of the characters like this.

- Round characters are complex characters that was created instead of a human being that is truly flesh-blooded, an individual that is complex and ambiguous at some level. It can not be easily classified as a character with a variety of characteristics but the appearance may be conflicting and difficult to predict. Characters can develop or change habits, attitudes according to events or situations in the story.

On the side of the round character will be a character with complex behavior. They have been changes in habits according to events such as "Junior" characters from the Perfect Match story that have changed her attitude from the importance of the appearance evaluate others from social status, although Junior often expresses others to see her own perfection but in fact the heart is full of loneliness, but after she went surgery until she made her face ugly. All the events have turned her into a society that is different from what she had been. Junior became more open to new things. She began to overlook the position of appearance and see the value of others from greater inner goodness.

And another character is "Mami" from Boy's Paradise. This character is complex in the sense that the author has paved the story at first for the Mami characters. She is a woman with a taste for same sex. Especially with Namsom, a special girl-friend that she has good feelings for and even though Mami will be with 3 men in the same house but she still has feelings of nostalgia and hope for Namsom to come back together with her. But when having the opportunity to be close to the male protagonist, she secretly has a surprisingly good feeling.

So these two characters reflecting the image of the character that does not have just one dimensional behavior but can change behaviors or feelings according to the situation that they have to meet.

### ***3.4. Creating character problems***

Saithip Nukulkit (2000) discusses the creation of conflict characters that may cause conflicts within the character of the character itself, conflict with other characters or conflict with things that do not exist, such as natural power or social systems. The author created for the character will make the story even more interesting. In these 4 novels, the author creates a problem from the unattractive feeling of the woman but may be different in various areas.

Based on the analysis of the problems of the characters in the concept of Saithip Nukulkit (2000), it was found that the female protagonists in these 4 novels

have problems from the ugly feelings of the characters as a starting point. And linking to other aspects of the story. Therefore, the crux of the characters is important to make the story exciting and interesting and interesting.

#### **4. Conclusion and Discussion**

##### **Ugly Duckling: The reflection of an unattractive duckling**

It can be seen that the author of all 4 Ugly Duckling novels uses strategies to create female characters with individualities, roles and behaviors expressed through online literary forms. Reflecting the image of a woman that is different from the original, that is, the strategy of creating women in novels was originally an ideal society. Women must have a beautiful look, is a good mother of children, is the wife who service her husband and also under the mandate of men or called patriarchal society. At present technological advances have played a role and open areas for women to be more liberal. To see the image of women that was changed according to the modern social context. Whether it is the attitude, values and lifestyle of women which leads to the intrinsic understanding of the female protagonist that reflects the combination of the feminine aura and the new imagination in harmony. And clearly show the value of the character as such it will expand on the following issues:

##### **1) Social attitudes and values**

From the study of analyzing all 4 stories, found that there is a consensus in the creation of external personality that even though the creation of female protagonists in online literature will change many things to the modern era but still creating a beautiful external personality based on the original style, reflecting that the Thai society also gives importance to the appearance and appearance. Such values therefore result in women having to try to change themselves so that society is always accepted. As can be seen from the junior character in Perfect Match, who decided to do surgery. Just because being criticized by society and just to want the society to accept or the seal character from Don't, who became unconvinced because she was a woman who likes to look down on her face. In addition to the criticism of the social face. Disclosing sexual tastes is something that affects the attitude of people in society as well as can be seen from Mami characters from Boy's Paradise, which is revealed to like same sex. But was excluded from his own mother Therefore, it can be seen that the society still has values in appearance. And restrictions on sex Therefore, these values result in the creation of characters in online literature as well.

##### **2) Characteristics of modern women**

In all 4 novels, the image of women is presented in a new dimension. With more variety from the past as can be seen from the creation of a female character for

sexual openness, such as 'Mami' from 'Boy's Paradise' which has the same taste for sex and reveals his own feelings towards women. Even knowing that society will not accept or 'Junior' from 'Perfect Match', which is a representative of women who dare to reject feelings for the opposite sex in order to maintain the relationship in the right frame and dare to express her true feelings honestly. And the characters of 'Maewnam' from the story 'Don't' which has the courage to respond to men for accuracy. Which is a behavior that rarely appears in female characters in the past. In addition, 'Alice' from 'Pretty (Pity) Girl' also shows that women can choose the best thing for themselves. Where men are just options.

Therefore, these characters can reflect the behavior of modern women in the field of courage, showing both sex. Feeling Placing power over males and the courage to be chosen rather than being chosen which is considered to be the unique point of the modern female character that has been created to be unique and responsive to the needs of the online literary world.

### **3) Values that reflect through the characters**

It can be seen that female protagonists in that online literature. There are strategies for creating character combinations based on the original attitudes and values. Combined with the characteristics of women in the modern era can be tactfully and interestingly. This combination will make the reader see the characters in the corner that still maintains some ideals of Thai women, such as beauty, both in appearance and mind, etc. But readers will get a novelty in terms of appearance. The habits of women who are smart, intelligent, have high self-expression, bold expression and clear ideology.

If analyzed from the title Ugly Duckling which means ugly duckling. May be significant to the feelings of women who are unattractive or inferiority within the mind and often think that they are not worthy or not suitable for things that are true, if we see ourselves in value. And think that we have the advantages that are worthy to receive that we will not be a duck anymore. But as a swan with grace as well as being a valuable woman. Even in any age still maintaining the value within the mind as before. This may be what the author tried to reflect through the characters in these 4 novels.

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# THE LEXICAL LOSS OF LOCAL FRUITS IN THE NORTHEASTERN LANGUAGE: THAILAND

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## **Abstract**

*The objective of this article is to investigate the status of using the local vocabulary in the fruit category of the northeastern language in Thailand. Using the concept of Language Change and language loss. This research has collected data from 20 vocabulary words obtained from the Isan dictionary and obtained from an interview with the speaker who is in Isan and using the vocabulary information to inquire with the northeastern people in the region of 60 people, both male and female, aged between 15 to 20 years, using the data obtained to analyze simple statistics with percentage ratios and presenting the results of descriptive analysis together with statistics tables and pictures.*

*The study indicated that vocabulary of the fruit category in Isan language that is not classified as a lexical loss there is one of words that is 'บักนัด' which is the term used to call pineapple fruits that are commonly known and often use the same word in many areas of the Northeastern to make this word not less. As for the other 19 words, it is classified as a lexical loss, respectively, and the words that are in the most lexical loss state there is one word, that is 'บักเหม็ด'. From the interview found that Is a rare and unknown fruit in adolescents Therefore causing this word to be lost in the future. In addition, there are 18 vocabulary terms that are arranged according to the order of loss from low level, medium to high. By factors that cause these terminologies to occur in the lexical loss due to the use of Thai standard language instead of Isan language and some fruits are rare fruits, causing people who have never seen or never eaten do not know these terms. The most people who are target groups when seeing fruit pictures They will know through the experience they have eaten, but often do not know the name of the fruit or some people know the name of this fruit in the standard Thai language only, causing these terms to be less and may be replaced by new words at the end.*

**Keywords:** *language loss, language change, northeastern dialect, cultural lexicals*

## 1. Introduction

The lexical loss is a process of language change. In general, the vocabulary of every language in the world may increase, decrease or lose from that language which may occur when speaker changing the mindset, or it can be said that humans use language to communicate for other people understand their needs. Language is an important medium used in communication. Therefore, the change of language depends on the speaker. The lexical loss in the language is caused by people understanding that the original vocabulary used to convey ideas or meanings cannot be clearly conveyed. Therefore need to search the new words for communication to make the listener understand and receive the message more easily, which may have borrowed those words from another language or a newly created vocabulary to replace the old vocabulary. In addition, lexical loss may occur when using modern technology, Or using new innovations to replace old items, that making people's lives change, language speaker, rarely using vocabulary about these things, or these items are not popular in general society, so the vocabulary that used to call these items has disappeared over time.

In Thailand, besides the four Thai dialects, there are also languages from other ethnicities in all regions, and these languages may be lost by the migration of people. Being surrounded by other indigenous peoples is an important factor that makes the original language to be swallowed up with its own traditional culture because it has to adapt to changing environments. As Supakit Buakhao (2018:9) said in the Thai dialects book that "When people who speak the same language have to disperse and settle in different places, each of the separate groups will adopt a culture and have a racial mix with the people near. Therefore the language may be mixed in. There is a new word to be used to call objects in the area of residence or to use words from that dialect to substitute" The loss of the original vocabulary in language is very easy, especially in languages that are not used in formal teaching. Which is often evident in Isan language, because Isan language is the regional language of northeastern Thailand, which has a number of about 95 percent of the entire population of the region. Although there are a large number of Isan speakers, but with many factors, such as the migration of the Isan people to work in the capital, forgetting the Isan culture of modern-day teenagers, receiving foreign or foreign words to use, causing a lot of words in Isan language lost. The standard Thai language has an influence on the Isan people and causes the loss of traditional Isan expressions. In addition, parents also have the value of speaking as Wachira Boonkeua (2007, cited from Rattana, 2016) the standard Thai language with their children, at the same time they communicate with Isan as their mother tongue". or in the case that the language speaker can communicate more than one language, that make them confusion or use one language rather than Isan language, so may not be familiar with their native language.

## **2. Literature review**

The lost vocabulary article: Assumptions about vocabulary changes in Thai dialects spoken in Nan by Phinarat Akarawattanakun (Entering the year) which analyzes and compares the morphology and sound changes that occur. In five dialects, namely Kham Muang, Lue language, Kho language, Phuan language and Lao spoken by the speaker. 3 models, age is the age of 60 years and older, age 35 - 50 years old and 15 - 25 years old, using 2 sets of words: 1) List of vocabulary used by all dialects of the same language, and 2) List of words that use different languages from Tai dialects, other languages, results The study of morphological changes in the five dialects of the dialect, partly found that there are a few words that the speaker rarely uses. And some words are used only for speakers of the age of 60 years and over. The speaker of the age range 35 - 50 years old and the speaker of the age range 15 - 25 years, rarely used or never used Or never heard Therefore, it may be assumed that there may be a loss of a number of vocabulary in the local dialect of the future. It can be said that in this article, collecting information and grouping shows the number of vocabulary that is likely to be lost from the future dialect language. Which one of the main reasons for the influence of vocabulary is the use of standard Thai language or official language.

The lexical loss of Isan food terms by Rattana Chanthao (2016), which studies and analyzes the level of vocabulary loss in cultural vocabulary groups about Isan food. By including vocabulary, calling for food preparation methods and cooking Brought to inquire about Isan teenagers aged between 15 - 20 years. Found the vocabulary in the food preparation group is in a state of loss rather than vocabulary in the cooking group. Which can be analyzed in the current urban society The preparation of the food is concise. Or some families use the method of buying cooked food instead Makes teenagers or new generations in the present rarely hear Or never use that term in food preparation And in the future these words are likely to be permanently lost

## **3. Methodology**

The objective of this article is to investigate the status of using the local vocabulary in the fruit category of the northeastern language in Thailand by selecting names of fruits that are available in all regions in Thailand And fruits that are only local in Isan, number 20, research area is Khon Kaen University, Nai Mueang Subdistrict, Mueang District, Khon Kaen Province.

The researcher, as a native of Isan, has examined the names of all 20 kinds of fruits in the Isan language. After that, bring 20 kinds of fruits to interview the target group. Which is a student student located in Khon Kaen University and speak Isan

language as a mother tongue, aged between 15 - 20 years, 60 people, 30 males and 30 females. To allow the target group to tell the name of the fruit in Isan language according to the picture with their own knowledge Therefore, if the target group cannot call the name of all 20 kinds of fruits in Isan language. It is considered that the target group does not call these names in the Isan language, And when bringing all the vocabulary from the target group interview Will use the results to find the statistical mean, percentage of the use of the term that is called the fruit in the Isan language In order to group terminology that is at the level of loss And factors that affect the use or not use of Isan vocabulary The researcher divided the level of loss into 6 levels according to the average percentage. The use of words that are called fruit names in the Isan language, all 20 words of the target group as follows.

81 - 100 percent Level [5] occurs at the highest level of vocabulary loss.

61 - 80 percent level [4] caused a lot of vocabulary loss.

41 - 60 percent Level [3] with moderate level of vocabulary loss.

21 - 50 percent Level [2], low level of vocabulary loss.

1 - 20 percent level [1] has the lowest level of vocabulary loss.

The level [0] does not occur.

#### 4. Research finding

level of loss	Male			Female		
	lexicons	number	%	lexicons	number	%
ระดับ (0)	-	0	0	บักนัด	1	5
ระดับ (1)	บักมี บักเขียบ บักสีดา บักทัน บักเฟียง บักหุ่ง บักค้อ บักกะทกลก บักนัด	9	45	บักมี บักเขียบ บักสีดา บักทัน บักเฟียง บักหุ่ง บักค้อ บักบก บักค้อ	9	45
ระดับ (2)	บักแงว บักค้อ	2	10	บักแงว บักกะทกลก	2	10
ระดับ (3)	บักเลียบแมว บักบก บักเม่า บักหว่า บักฝี่่วน	5	25	บักเลียง บักเม่า บักเลียบแมว บักหว่า	4	20
ระดับ (4)	บักค้อแล่ง บักแซว บักเลียง	3	15	บักค้อแล่ง บักแซว บักฝี่่วน	3	15
ระดับ (5)	บักเม็ก	1	5	บักเม็ก	1	5
รวม	20	20	100	20	20	100

For the study, there will be a factor of loss of fruit category in Isan language. Most of the fruit names mentioned above are local fruits. In the Isan language, there are different calls from the central language Which may be called according to the shape of the fruit Or called according to the environment in which these fruits were born which is mostly a concise word And the older Isan people will know But with the changing environment Making these fruits difficult to find In addition, teenagers nowadays need to use standard Thai language or intermediate language to communicate primarily. Causing the unknown name of the fruit mentioned above to be in Isan language Or some people may not know these fruits at all Because he had never eaten before, causing some names of fruits in Isan language to be called instead by Central Thai And some names are not in the memory of the people and gradually disappear and there is a risk of future loss of condition

## **5. Conclusion and discussion**

The study of the terminology of the name of the fruit name in the northeastern language of Thailand or Isan language. In this research, there are two trends in the results of the results: vocabulary group, fruit category in Isan language that is at a loss of vocabulary. And the terminology of the fruit category in Isan language that is not in the loss of vocabulary. The study group has hypothesized in this research that Vocabulary in the category of fruits in Isan language will have a condition of less than there is no vocabulary. Due to the fact that the local fruits are hard to find, Although the vocabulary of these fruit categories is used in many areas of the northeast, but the majority of the target groups is teenagers between the ages of 15-20 years. The researcher considers that many people who can communicate in Isan language from the local birth, but when they have to come to study in the city, it is necessary to use a common language. The core some words will use a common language to call aliases and with a basic vocabulary of the fruit of those who know. May be caused by having seen or used to eat, but did not speak or use these vocabularies frequently in everyday life Therefore may cause some forgetfulness.

Based on the above assumptions, the study was conducted by interviewing 60 target groups, male and female by using the illustrations and asking the name of the fruit with the information provider which, when collecting data, can summarize the research results that Vocabulary in the category of fruits in Isan language is in a state of loss. There are 19 words out of 20 words, which is more than words that are not in the condition of loss, which has only 1 word, only the word 'บักนัด' or 'Pineapple', which is a set of information from female target groups Because this term is often used in all areas of the northeast and the general people still use this word in everyday life because pineapple is a fruit that is easy to find Not local fruits directly Make most people know As for the vocabulary of the fruit category in Isan language that is in a

state of loss. Although the loss of the word is in the level 1 (9 words) or 45 percent, but it is considered to be at the lexical loss in the future. And the terminology that has the most leeway. There are 1 word, namely ‘ไม้เห็ด’ due to factors related to local fruits that are hard to find at present. And not the fruit that is commercially available including these fruits. There are different names by local names. Or some people know these fruits in the middle language only thus resulting in the loss of terms with these words. Therefore, this research result is considered consistent with the research hypothesis. As mentioned above And in accordance with the words of Supakit Buakhao (2561: 9) mentioned in the local Thai book "When the speakers of the same language have to separate to settle in different places, each group separating will adopt a culture and have a racial mix with the people near. Similarity, Rattana Chanthao (2016) was found that the lexical food of Isan have slightly lost in the teenagers as they did not see how the parent cook and home. Therefore may be able to blend in the language There are words to be used to call objects in the living area or take words from that dialect instead may be difficult because there is no official use of Isan language for teaching and learning in official institutions causing no form of vocabulary, and fixed grammar mostly depends on the speaker which the speaker may have to borrow words or have to mix words from other languages to join as well until the loss of the original vocabulary in the end. Therefore, the study of the loss of vocabulary in the fruit category in Isan language is considered a study in terms of language change That may cause loss of words that are not used But with the vocabulary of that fruit is also a term used in everyday life and used in general in various locales, thus making no clear loss of words as much as the terms in other categories

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# LEXICAL LOSS OF LOCAL VEGETABLE IN THE NORTHEASTERN LANGUAGE, THAILAND

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## **Abstract**

The article aims to explore the status of the use of local vocabulary in the vegetable section of the northeastern region in Thailand. Use the concept of language change and language loss. This research collects data from 20 words derived from the northeastern dictionary and obtained from an interviewer who tells the language of Isan people. By using the vocabulary data to inquire with the northeastern people in the northeastern region of 60 people, divided into male and female groups of 30 people, aged between 16-20 years. Living in Khon Kaen province, using the data obtained to analyze statistics with a simple percentage ratio and presenting research results in the descriptive analysis together with statistics tables and pictures. The research found that these terms are divided into 2 main categories. The first group that is still used in many daily lives and the second group is groups that are vulnerable to lose in the future. The first group of words is vegetables that are popular in every region and are sold by stalls and the second group of terminology is vegetables that are popularly eaten only in the northeastern region and do not find general trading. Including some rare species, so it is not found to be used as a side dish with the current Isan food. In addition, there is also found that there is a complete loss of 1 word, which is the word 'Pak Lin Phee' which is a rare vegetable and is not commonly seen in the Northeast and other regions.

**Keywords:** language change, language loss, northeastern dialect, culture lexicons

## **1. Introduction**

Loss of vocabulary or Lexical Loss is a type of change in the language that occurs when changing the mindset of language speakers. That is, when the speaker says that the original vocabulary is used to convey the idea or meaning that is not clear to the media, it will bring new words that may be borrowed from other languages or newly created words instead of words. The existing terminology has gradually disappeared from the language. In addition, loss of vocabulary may also occur when modern technology occurs. New objects have been used to replace the original objects

that the speaker rarely uses. The words that the speaker used to call the original object gradually disappeared, and there was a new term for the object to replace. Dusadeeporn (1983: 36) said "The words or words are lost from that language because the idea about that story is lost The words that convey that idea will also be lost. There are many words that we do not use in daily life, but may be mentioned when wanting to talk about the past or use it in literature.

In addition, the vocabulary may be lost from the language because the meaning of the word is not very different or has the same meaning. When the meaning is the same or very similar, one word that is more popular will continue to exist, while unpopular words will often be lost from use. And on this same issue, Crawford (1998) has shown that only 40 percent of the languages currently have been preserved and received Transmitted through teaching to the next generation of children because language is a culture that expresses the identity of the group. The death of a particular language is linked to the loss or death of cultural identity.

As Crystal (Crystal, 2000: 69 referred to in Ratana (2016:12) says that language is linked to the loss of culture or death of any culture that is related to many factors and factors. Is the phenomenon of language loss as a common example of the influence of the official language as a medium of language that is rapidly increasing in general in every language according to the growth of each nation. There is also the influence of English as an international language. (International language) that has a distinctly increased role in the 20th century, which clearly results in some local languages or minor languages of each locality that has a reduced role. Language loss phenomenon this has different levels and contexts according to each country. Because each country is dedicated to the preservation of the national language Or primary language Like Thailand, where the local language and secondary languages spoken in different countries of the country have a reduced use context, including Isan dialect as well as Wachira Bunge (2010) shows that speakers who use the language Thai standards are accepted by society as being a high class, while those who use the local language are not accepted by society until it seems that they are low-class, thus resulting in the local language having an unblemished image. Sri higher standards in Thailand

As most of the research related to the loss of Isan language, it is agreed that If a user of Isan dialect or a language speaker appreciates and giving priority to other languages rather than dialects, in the future there may be a loss of language and may change the language more than ever Which, if such phenomenon occurs in the Isan dialect Would result in missing language identity And Northeastern Thai may eventually lose or die.

## 2. Literature Review

Sirichai and Supakit (2016) studied "Variation of consonant sounds in Phuan Thai language". It was found that language variants were related to social factors such as gender, age or language usage situation. Age is one factor that breaks people in Society is divided into several subgroups which have different roles. People of different ages have Behavior of using different languages. In accordance with Pinarat suggested that age is the important social variable of the speaker because it affects language variation. Rattana Chanthao (2016) studied "the loss of the Isan food call" by using the concept of the lexicon in the analysis of meaning categories about "Food preparation" and "cooking" of Isan people, which is a cultural vocabulary that shows the identity of the Isan local area. But due to the way of life of the Isan people in the urban society, such as KhonKaen, which is the center of the Isan region Becoming a city Make lifestyle having meal Cooking of the Isan people changed from the past that had eaten together in the family with women in the house playing an important role in cooking, becoming food bags or finished food to eat, Therefore, the vocabulary about Isan food may be lost in the Isan language user group. In particular, teenagers in urban society, economy, becoming a society with this prosperity make immigrants come to live and work in the cities of KhonKaen Province. The loss of the word for Isan food which can be seen from The expansion of the residential business sector in the city is increasing. In the past 10 years, Central Thai language has played an important role as a common language in the communication of people in KhonKaen city. Therefore, the research area in the city of KhonKaen Therefore should represent the main urban area of the Northeast and reflect Showing the food loss of the Isan people more clearly than most rural areas still have a way of life that is not as different from the past as much as the big city society

Natthaphon Chanter and Rattana Chanthao (2017) studied "Synthesis of Phutai language study in Thailand". In conclusion, most research shows the loss of vocabulary in Isan dialect by saying that nowadays Isan language has changed from the original or can be said to have lost a lot of vocabulary from the original. With many reasons and factors such as educational values factor, social factors and technology, progress, etc. reflect that the local language is being reduced to the daily life of local people. Which all these things cause loss of

vocabulary from the original or it can be said that all of these factors result in Isan language idioms that may be lost or die from the Northeastern dialectic library in the future.

### **3. Methodology**

The article aims to study the loss of vocabulary in vegetables in Isan local area. The researcher as a native speaker of Isan brought all the words to interview the target group, Isan teenagers who use Isan language as their mother tongue, aged between 16 - 20 years, 60 people, 30 males, and 30 females. The researcher used pictures of vegetables in Isan local area and interviewing the target groups to allow the target group to answer the names of vegetables in the picture in the Isan language. If the target group responded correctly the name of the Isan language vegetable shows that the vocabulary of vegetables in the Isan region and if the target group responds incorrectly to the name of Isan vegetable. When the vocabulary from the target group has been used to find the mean of knowing the vocabulary of vegetables in Isan local area. The researcher has divided the level of loss into 6 levels according to the average percentage of knowing the 20 words of the target group as follows.

Level 5 the highest level of vocabulary loss means the target group of 0-6 people know this vocabulary.

Level 4 high level of vocabulary loss means the target group of 7-12 people know this vocabulary.

Level 3 occurs at a moderate level of vocabulary meaning the target group of 13-18 people knows this vocabulary.

Level 2 low-level of vocabulary loss means the target group of 19-24 people know this vocabulary.

Level 1 the lowest level of vocabulary loss means 25-30 target groups. People know this vocabulary.

Level 0 does not occur.

The term refers to the target group of 31 people or more. Know this vocabulary by dividing the level of loss above, level 1-5 is the level of loss. level 0 is a terminology that does not occur. Using statistics to analyze the loss of vocabulary in Isan language. This vegetable category therefore is research that uses both qualitative data. The research hypothesis That the vocabulary of vegetables in the Isan local area that is expected to be in the most loss state is Glossary of vegetable categories in the Isan local area that the researcher uses to ask the target group.

### **4. Research Finding**

The research found that Vocabulary in the region of vegetables in the northeastern region of 20 words, resulting in the loss of a total of 19 words, including ผักหอมเป ผักขา บักเขือเครือ หมากแข้ง ไข่ผ่า ผักอีตู๋ ผักแป้น ผักกะเดา ผักอีสุ่ม ผักอีเลิศ ผักหอม ผักแพว ผักตำนิน ผักอีฮีน

ผักหนอก ส้มโอมง ผักขม ผักลิ้นปี่ หอมบั่ว. And the vocabulary of vegetables in the local northeast do not have a loss of vocabulary. There are 1 word is บักอี Isan vegetables or in the level (0), there are 1 word, representing 5 percent, and the vocabulary of Isan vegetables that are in various levels of loss are 19 words, which are in the level (1) or the lowest level, 1 word accounted for 5 percent (2) or 4 low levels, representing 20 percent (3) or moderate levels, 4 words, equivalent to 20 percent (4) or more 3 words, representing 15 percent And the level (5) or the highest level, 7 words As a percentage, as detailed in Table 1 as follow table 1 vocabulary of various levels of vocabulary loss

**Table 1. lexical loss in Isan vegetable**

level of loss	Isan vocabulary	number	%
<b>0</b>	บักอี	1	5
<b>1</b>	ผักหอมเป	1	5
<b>2</b>	ผักขา บักเขือเคื่อ หมากแข้ง ไช้คำ	4	20
<b>3</b>	ผักอีตู๋ ผักแป้น ผักกะเดา ผักอีฮุม	4	20
<b>4</b>	ผักอีเลิศ ผักหอม ผักแพว	3	15
<b>5</b>	ผักตำนิน ผักอีฮีน ผักหนอก ส้มโอมง ผักขม ผักลิ้นปี่ หอมบั่ว	7	35
<b>totally</b>	20	20	100

Table 1 shows the loss of vocabulary and the persistence of Isan language vocabulary in the vegetable category. It is found that the number of vocabulary that is in the level (0) is the terminology that is not in the terminology. Total 1 word, equivalent to 5 percent. All vocabulary. And the terminology that is in the condition of loss of vocabulary at various levels has 19 words, accounting for 95 percent of the total vocabulary. The terminology in the vocabulary found that the highest number was in the level of vocabulary loss (5), with a total of 7 words or equivalent to 35 percent of the total vocabulary. The number of such statistics can be described as the phenomenon of loss in the vegetable section of the Isan dialect that most vocabulary is in the lexical situation. And being in the "most" level of vocabulary loss, therefore, the terminology that is in the "most" level of these 7 words in the future may be completely lost. That is no one uses these words in their daily lives and the vocabulary will be lost in no time.

4.1 Glossary of Unusual Isan Vegetables or at the level (0) From interviewing the target group find a word that is not loss 1 word that is บักอี [bak<sup>2</sup>ʔu:5]

1.2 Vocabulary of Isan vegetables in different levels (1-5) From interviewing the target group finds the vocabulary that is in the loss of 19 words, divided into 5 levels as follows.

Level (1) or the terminology that is in the minimum level of vocabulary found 1 word is หอมเป(parsley) [hɔ:m5pe:1]

Level (2) or terminology that is in a low level of vocabulary found in 4 words is ผักขา [phak2kha:5] บักเขียเคีย [bak2khia5kia1] (Tomato) บักแข็ง [bak2khɛ:ŋ3] ไข่ผ่า [khaj1pham5]

Level (3) or vocabulary that is in a moderate level of vocabulary found in 4 words including ผักอีตุ๋ [phak2ʔi:1tu:1] ผักแป้น [phak2pɛ:n3] ผักกะเดา [phak2ka2daw1] ผักอีฮุม [phak2ʔi:1hum1]

Level (4) or terminology that is in a high level of loss found in 3 words Including ผักอีเลศ [phak2ʔi:1lɛ:d1] ผักหอม [phak2hom5] (Spinach) ผักแพว [phak2phɛ:w1]

Level (5) or the terminology that is in the most lexical level found in 7 words including ผักดำนิน [phak2tam1nin1] ผักอีฮิน [phak2ʔi:1hi:n1] ผักหนอก [phak2nɔ:k2] (Centella Asiatica) ผักส้มโอมง [phak2som2mo:ŋ1] ผักขม [phak2khom5] ผักลิ้นปี่ [phak2lin3pi:2] ผักหอมบั่ว [phak2hɔ:m5] (shallot)

### **Loss of vocabulary in vegetables in Isan language**

Glossary of vegetables in the Isan locality that is not in a state of loss or at the level of [0], 1 word, equivalent to 5 percent of the total vocabulary. บักอี [bak2ʔu:5] means pumpkins because this vocabulary is used in everyday life. Can be found online It is also a vegetable that most people plant and eat in every region of Thailand. Thus making the words " บักอี [bak2ʔu:5] or pumpkin" not loss vocabulary that is in a state of loss [1], "minimum" found 1 word, equivalent to 5 percent of the whole vocabulary fragrant vegetables, meaning parsley or saw blade vegetables. In central Thai Due to this type of vegetables, Isan people prefer to grow in the house because they are often used to make many kinds of Isan dishes such as boiled, steam, fried, soup and curry. And these foods are also sold in general vocabulary that is in a state of loss [2], "little" found 4 words, equivalent to 20 percent of the total vocabulary, including ผักขา [phak2kha:5] meaning ชะอม, บักเขียเคีย [bak2khia5kia1] meaning "มะเขือเทศ or tomato, บักแข็ง [bak2khɛ:ŋ3] meaning ไข่น้ำ or eggplant. These meanings are still used to call vegetables in everyday life and have general sales because these vegetables are popular in cooking, such as a fried egg with climbing wattle is omelet fried by adding ผักขา [phak2kha:5]. The bug used in many types of cooking, such as

papaya salad, must be put in "บักเขี้ยว [bak2khia5kia1] (tomato)" or the word บักแข็ง [bak2khe:ŋ3] often found in this type of food such as chili paste, decorated with chili paste Or eat together with various foods such as eating the shredded or crushed. The word "บักแข็ง [bak2khe:ŋ3] " is a vegetable that people often use to cook such as green curry with chicken recipes vocabulary that is in a state of loss [3], "moderate" found 4 words representing 20 percent of the total vocabulary including ผักอีตู [phak2ʔi:1tu:1] meaning ใบแมงลัก, ผักแป้น [phak2pɛ:n3] meaning กุ๋ยช่าย or garlic chives, ผักกะเดา [phak2ka2daw1] meaning ผักสะเดา and ผักอีฮุม [phak2ʔi:1hum1] meaning มะรุม. The names of these vegetables are target groups have never eaten and don't know the name of Isan language such as the key vegetables that are in Stir-fried rice noodle with shrimp the target group will be known as the garlic chives.

Vocabulary that is in a state of loss [4], "very" found 3 words representing 15percent of the total vocabulary including ผักอีเล็ด [phak2ʔi:1ɾ:d1] meaning ชะพลู, ผักหอม [phak2hom5] (Spinach) meaning ผักโขม and ผักแพว [phak2phɛ:w1] meaning ผักพริก. These vegetables, the target group does not know the name of Isan language, such as the excellent vegetables that are put in curry or humbled to deodorize the fishy smell. For example, meat is always enriched with vegetables. The word vegetable is steamed or blanched. ผักแพว [phak2phɛ:w1] etc. The raft was used to put some food good smell. And add fragrances such as spicy minced chicken salad. Some people will feel that ผักแพว [phak2phɛ:w1] stink is not so popular today. The goal does not recognize the name Isan language. Some species do not recognize both Isan and Central Thai or never knew Therefore being classified as a high level of vocabulary loss vocabulary that is in a state of loss [5], "most", 7 words, representing 35 percent of the total vocabulary, including ผักตำนิน [phak2tam1nin1] meaning คำลิ่ง, ผักอีฮิน [phak2ʔi:1hi:n1] meaning ผักข่าเขียด, ผักหนอก [phak2nɔ:k2] meaning ใบบัวบก, ผักส้มโอมง [phak2som2mo:ŋ1] meaning ชะโอมง, ผักขม [phak2khom5] meaning สะเดาดิน, ผักลีนี่ [phak2lin3pi:2] meaning ผักหางปลาช่อน, ผักหอมบัว [phak2hɔ:m5] meaning หอมแดง or shallots. These vegetables are eaten with chili paste some of which are composed in foods such as sour curry put the savings to give a sour taste. And the onion was put in the curry as well. In addition, the vocabulary complete loss of vegetables 3 words including ผักอีฮิน [phak2ʔi:1hi:n1], ผักขม [phak2khom5] and ผักลีนี่ [phak2lin3pi:2] these target groups have never seen, never heard of names and do not know the names of these Isan vegetables. Is it the most lethal level [5] because it is called in the middle language instead The target group does not know the name of Isan language. Some species do not know the name of the Isan language and the central language, including never known. And not popular in cooking or eating without planting in the home area and without general sales.

## 5. Conclusion and discussion

The study of the loss of the vegetable category in Isan in this research Has defined the vocabulary in 20 vegetable categories that are commonly found in the Isan local area The research found that Vocabulary in the region of vegetables in the northeastern region of 20 words resulting in the loss of a total of 19 words and not lost 1 word. This research has a base resolution that glossary of vegetables in the northeastern region, which is expected to be in the lost conditions, is ถั่วลิสง [phak2lin3pi:2], ผักถั่วฝักยาว [phak2ʔi:1hi:n1] and ผักขม [phak2khom5]. That is, the vocabulary of vegetables in the local Isan region that caused the loss of worrisome words that would result in the loss and loss of a total of 19 words because the target group of teenagers isn't eating vegetables Therefore don't recognize various types of vegetables.

Some target groups know only vegetables in the picture but don't know what kind of vegetables are or know the name of the vegetable in the middle language but don't know the name of Isan language vegetable because most of the names call Central Thai instead of Isan language in addition, there are factors in cooking because the new generation does not favor cooking. But often buy ready-to-eat food, so don't experience the ingredients in foods that contain various vegetables, resulting in no knowledge of vegetables and the terminology of the vegetable category in the local northeast region that does not have a loss is บักอ้อ [bak2ʔu:5] can be used for many types of cooking both savory and sweet food and is also a popular vegetable to be eaten for weight control, making the bugs to be known to the general public Vocabulary of complete loss of 3 vegetable including, ถั่วลิสง [phak2lin3pi:2], ผักถั่วฝักยาว [phak2ʔi:1hi:n1] and ผักขม [phak2khom5] because the target group has never seen and never heard vocabulary the names of these Isan vegetables are at the highest level of loss [5] because they are called in Central Thai instead. The target group does not know the name of the Isan language. Some species don't know the name of Isan language.

And the common language, including never known and not popular in cooking or eat. There is no planting in the house area and there is no general sale. In addition, such vegetables cannot be found online. It can be seen that the results of the study are fresh and consistent with the base, with the most complete loss of vegetables that is ถั่วลิสง [phak2lin3pi:2] don't popular vegetable. Because of the physical characteristics similar to weeds, thus causing misunderstandings that are not vegetables because they are not popular in the area no general trading was found. And not found to be used as a side dish to the present Isan food causing the target group in this interview to not recognize Lychee vegetables never seen the picture never heard the name and never eaten before as a result, Lychee vegetables are the most common terminology in the vegetable category.

The results of this research also show the consistency with the Crystal concept (2000) referred to in Ratana Chanthao, which says that one-word loss is loss of wisdom. The cultural identity of that community, which causes the loss of vocabulary, is the age range and lifestyle.

As the research of Sirichai and Supakit (2016) titled "Variation of consonant sounds in Phuan Thai, Ban Phue District, Udon Thani Province" said that age is what makes members of society have a different status. Language usage behavior will also change according to the age of language users. With the idea that the use of language of older people is evidence of the use of language in the past as for the language of the speaker Middle-aged people reflect the current language usage and the use of the language of young speakers reflects the trend of future language usage this basic concept leads to the study of language variation according to the age group of speakers.

Which appeared in the research of Ratana Chanthao (2016), titled "The Loss of the Isan Food Call" that said that the Isan people in the urban society have a lifestyle pattern having meal. The cooking of Isan people has changed from the past that had been eating together in the family. With women in the house playing an important role in cooking, becoming food bags or successful food eat, so the vocabulary of Isan language may be lost in the Isan language user group in particular, teenagers in urban society, economics, becoming a society with this prosperous city have increased the number of immigrants to live and work in the city. And most of the language used in communication is Central Thai. Thus making the central Thai language to play an important role as a common language in the communication of people in the northeast.

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# LEXICAL LOSS OF ENVIRONMENT THE NORTHEASTERN LANGUAGE: THAILAND

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## **Abstract**

*This article aims to describe the degree of loss in the environmental category of the local vocabularies in the northeastern language of Thailand or Isan dialect by using the concept of language change and language loss. This research collects the data from 20 words derived from the northeastern dictionary and obtained from an interviewers who are native and expertise of Isan language and cultures. The vocabularies data will be questioned with 60 teenagers in Isan people in the northeastern region in male and female. The data obtained to analyze statistical values easily with percentage ratio and were presented the results by the descriptive analysis including the statistical tables.*

*The results show that these terminology were divided into 2 main categories, including those that are being used in many daily lives and terminology that may occur in the future. The first category has been potentially lost that there are 4 words by 20%. The second category has not been lost that there are 16 words by 80%. The second category was divided into 2 sub categories that is 1) the words have been used in daily life or will has not lost that there are 13 words by 65% and 2) there are tendency lost in 3 words by 25%. The results of this research found that the first category might be lost in the future rather than the second one.*

**Keywords:** *language loss, language change, northeastern dialect, cultural lexicons*

## **1. Introduction**

Loss of vocabulary can occur from many factors and can occur in all languages around the world. It may be caused by society that changed according to the era from which they lived in a rural group, changed to urban distribution. Technology in communication, communication, foreign culture. Causing the mother tongue or language to be merged into a new word or disappeared from the original word library of people who use that language. Loss of vocabulary or Lexical Loss is a phenomenon of change in vocabulary in one language. Which occurs when there is a change in the thinking of the speaker. That is, when the language speaker saw that the original

vocabulary was used to convey the idea or the meaning that is not clear to the media, will bring new words that may be borrowed from other languages or newly created vocabulary instead the existing vocabulary gradually disappeared from the language. In addition, Rattana (2016) explained that the phenomenon of losing that language may occur gradually. And the level of loss that shows clear evidence is also changing cultural vocabulary levels.

Isan language is the local language used in Thailand. In which the area of Isan language users are intensively the northeastern part of Thailand and used as mother tongue. Orawan (2003) said that the technological progress has changed the world. In addition, the differences of the local speakers are also important factors that change the language. Because people in the same community are different in sex, education, occupation and age. These differences are often expressed in the language that each person uses. Resulting in the Thai people in the northeast region interested in using central Thai rather than Isan language. Due to the modernity of the modern world or the context in the daily lives of people that change. Such as the Isan people come to work in the central region more Parents do not use Isan language with their children. Wachira (2010) proposed that the central Thai language had an influence on the Isan people and caused the loss of the traditional Isan phrase. In addition, parents also have values speaking Thai in the middle with their children. Both they speak Isan language as their mother tongue. Which can be seen that the vocabulary in Isan language that is not used in everyday life or the maintenance is the most likely loss of vocabulary. Due to the use of central Thai language rather than their native language that has not been learned or inherited to the next generation. In this study, the terminology used to collect data is a vocabulary in the environmental category that shows the topography. Which is a good representation of the local identity by interviewing target groups is a group of teenagers who come to study in Khon Kaen city. Which will see the status of the use of Isan words that are used by young people who are modern people that tend to decrease or increase. The identity of the Isan people will only disappear. In addition, data collection is also a way to study other factors that may affect the use of dialects in the Isan region as well.

The factors mentioned above the research team is therefore interested in studying the loss of vocabulary in the environmental category in Northeastern Thai. In order to know whether the current environmental categories are still in use or not and how social factors of age and sex affect the loss of vocabulary in Isan dialect.

## **2. Methodology**

This article aims to describe the level of loss of environmental categories. In this research means Natural environment and man-made environment. By compiling

the basic vocabulary used in everyday life, a total of 20 words, the vocabulary that represents the general environment. Which collects data from the sample group, Isan teenagers who live in the northeast and using Isan language as a mother tongue of 60 people aged between 15 - 20 years, divided into 30 males and 30 females.

### **3. Research finding**

Loss of vocabulary about the environmental category in Isan language, number 20 words that were used in teenagers in the northeastern region, number 60, who came to study in Khon Kaen, who had traveled from various provinces in the northeast, whether it be Roi Sakon Nakhon, Ubon Ratchathani Nong Khai Chaiyaphum. Kalasin, Buriram, Maha Sarakham, Yasothon, Udon Thani, Sisaket, Surin, Nakhon Phanom and Khon Kaen In which the use of vocabulary in the environmental category uses the same or different Isan language in each locality. The results of the study can be divided into 2 scenarios: vocabulary, loss, vocabulary and vocabulary that are not lost. Which has the following results.

#### ***3.1. Glossary of terminology***

From the table above, showing the terminology in the environmental category is Vocabulary that is less than 6 people or less than 10 percent. The terminology in the environmental category has four words: Wang Wern, Loeng, Phum Puk and Kon. Which these sample groups may not know the meaning of the word or have not been used in everyday life. The word "wang wen" means deep water area. The word "leng" means a vast but not deep depression. There is water throughout the year. The word "kon" means wood that birds or chickens catch, water sources. And the word "Po Kum Pu" means in the morning when it is seen as a vocabulary without any known examples because it is an ancient vocabulary From inquiries from old people who have knowledge in the Isan language that most rarely use But used as other words, such as in the morning, beating four times, five times with the time specified or used in other contexts that are different Meaning means half With this word that no one knows because it is a word that is not often used Grandparents do not use this word. Makes the generation of grandchildren do not know the vocabulary and disappearance of the vocabulary as much as it should be, or some examples may have heard this word but cannot enter the meaning of this word which makes it possible to see the situation of losing the word "Po Kum Pu" at the highest level. From the terminology that is in the situation of loss, these words are the terminology that has the most loss of up to 20 percent. Makes it impossible to understand the meaning of that word. Which will cause these terminology to be terminated because they are not being used continuously or without treatment to the next generation which will cause these words to disappear from use in no time if not recorded or preserved.

### ***3.2. Unexplained vocabulary***

Unexplained vocabulary is a vocabulary that is still used in everyday life and is also used to communicate with friends. People around you or family members. The terminology in the environmental category is the most unexplained terminology. There are 16 words which can be divided into 2 trends: vocabulary that is likely to be lost. And terminology that is likely to be lost. Which can be seen that the terminology that is likely to lose is up to 13 words or 65 percent and the terminology that is likely to be less than 3 words or 25 percent, which can be divided as follows.

#### *3.2.1. Vocabulary potential lost*

The terminology that is likely to be lost is vocabulary. The vocabulary that the sample knows and uses has more than 30 people or 50 percent. The vocabulary in the environmental category that the sample knows and applies to the daily life rain is as many as 16 words or as a percentage. 65, ie, Ege, lumpy, windy, plus buffalo, phon, kantha, hum, time, water, water In addition, the word Fiong, Hung and Hai. Is a term that is also used very much, but is used in the Isan language in other places that make use of different words, but the disappearance is still the same as the word "Fiong" means straw but the group Examples in other northeastern regions may also use the word "gear" instead of "fiang". Later, the word "hung" means a rainbow that has the word "throng" and the word "hai" means farm that has the use of the word "Thong". The meaning of the word "hai" means the area used to grow corn or cassava and the word "ding" means the area used for rice cultivation. Will see that the loss of both words has a similar meaning, namely the area used for cultivation of agricultural crops. Which the terminology that is likely to lose is less likely to be terminated because it is a vocabulary that the sample is able to understand the meaning very well and is still used in everyday life as much as possible.

#### *3.2.2. Glossary of terminology*

The terminology that is likely to be lost is the terminology that the sample knows about and uses less than 24 people or 40 percent. The vocabulary in the environmental category that the sample knows and uses has only 3 words, representing 25 percent, including the words " Hong Din "means deep groove. For example, for example "Plowing the soil into the ground". Subsequently, the word "Poompa" refers to a small pool with fish living. Example of using words like "Little fish are usually in Poompa." And the word "Song" means a pond or a small pond in the field was used like "The dry season has rain. People tend to use water. " These 3 words tend to lose vocabulary Because the sample group does not know the meaning or may know little and is not used in everyday life. Because it is a term used in farming and farming, and the sample group that is young is not involved in the

farming of the farm together with the family as in the past with the changing living conditions of children studying in the countryside, moving to study in the city. Causing modern teenagers to be closer to the countryside and using the Thai language more than using their Isan dialect.

#### **4. Conclusion and discussion**

The Lexical loss of environment the northeastern language: Thailand. In this research, there are 2 situations of loss of vocabulary: terminology, vocabulary loss and vocabulary that are still divided into 2 trends: vocabulary that tends to lose vocabulary and vocabulary. That tend to lose vocabulary. Since the terminology that is lost is a word that the sample does not know in terms of words and meanings and is not used in everyday life. That may be a term that is rarely used or is an ancient vocabulary in people who are not used in the parents' generation, thus causing the vocabulary to disappear or may be used in other contexts or meanings. That may cause confusion in the interpretation and understanding and terminology that is not likely to lose the most vocabulary Because the sample group understands the meaning of the word and is still used in everyday life That may be caused by learning while still being a child and being able to communicate with family members or some teenagers being raised by the eyes and grandmothers that live in rural societies that make them learn some vocabulary. Thus understanding the vocabulary in the environmental category that is a general term that can be seen anywhere, whether it is a social city or a rural society. In addition, terminology that is likely to lose vocabulary is likely to be lost as well, although only 3 words, which from both situations, will see that most vocabulary still tends to lose vocabulary. Because it is still used in everyday life. But the terminology that may be lost is the chance that the word will disappear from the system in the Isan dialect. Due to the changing social conditions or moving into the urban society that makes use of the central Thai language more than Isan dialect or being far away from the traditional society in which old-age teenagers often go to help parents do ranch farming or study Knowing from the elders of the village changed to living in the house, reading books. Play games or go out with friends more, thus making these teenagers not learning as much as they should. Which some people may understand from being listened to, but never used, may cause terminology to not be used in the end.

The results of this research were based on the concept of lexical loss at Phinarat (2012). Loss of vocabulary Or Lexical Loss is a phenomenon of change in vocabulary in one language. Which occurs when there is a change in the mind of the speaker, that is, when the speaker sees that the original vocabulary is used to convey the idea Or the meaning that the media needs is not clear Will bring new words that may be borrowed from other languages Or newly created vocabulary instead The

existing vocabulary gradually disappeared from the language. That is consistent with the concept of Wachira (2010) that suggests that the central Thai language has an influence on the Isan people and causes the loss of traditional Isan expressions and changing the meaning of words in Isan language. The factors that result in the loss of Isan dialect have many reasons. Changing social conditions moving into urban society with the use of central Thai rather than Isan dialect Advancement of modern technology the age difference between teenagers and younger generations who do not have teaching for their offspring may cause the vocabulary in Isan dialect to be lost in a short time.

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# THE NEEDS TO DEVELOP INFORMATION SYSTEMS FOR QUALITY ASSURANCE OF WORKERS OF QUALITY ASSURANCE, KHON KAEN UNIVERSITY TO GET READY FOR AN EXTERNAL AUDIT OF HIGHER EDUCATION LEVEL.

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## **Abstract**

*This study was survey research which aimed to investigate the quality assurance staff of Khon Kaen University's needs for the development of an information system for educational quality assurance and to develop guidelines for development of an information system to increase effectiveness of operation of education quality assurance. The population was 120 workers of quality assurance of Khon Kean University. The instrument used in this study was a questionnaire about the needs for development of information systems for quality assurance of workers of quality assurance, Khon Kaen University, in preparation for the external audit of the higher education level. Data were collected with a 5-point Likert scale questionnaire and analyzed by using frequency, percentage, mean and standard deviation. The findings revealed that the needs with the highest operating level were information services at the high level (Mean = 4.32, S.D. = 0.734). The highest operating level issue was the availability of a management system which reported outcomes and problems in relation to usage of the information system at the highest level (Mean = 4.50, S.D. = 0.812). In order to develop the information storing system, a meeting should be held to discuss and share ideas since each faculty used and stored information differently.*

**Keywords:** *information system development, education quality assurance, external audit, higher education*

## **1. Introduction**

### **Rationale of the Study**

Educational quality assurance serves as a process which evaluates and monitors the operation of institutions within the higher education institutions. The

institutions' staff are tasked with overseeing and monitoring their performance in order to ensure its operational compliance with educational standards. The results of educational quality assurance have demonstrated that systematic design and creation of systems, development in any aspect as well as an analysis and addressing of their weaknesses can help strengthen the organizations (Samerpitak & Sirichote, 2011) as well as propel them towards excellence. What's more, the faculties and institutions ought to report their operation for evaluating internal educational quality. An analysis and assessment of the performance serve as an important element in education quality assurance; both cannot be carried out properly without the valid database and information system on any level, e.g. personnel, programs, faculties and institutions. Hence, an effective information system acts as an important factor which will produce effects on the achievement of educational quality assurance and the quality of operation, including operational planning, evaluation and improvement (Office of the Higher Education Commission, 2014). With that in mind, in educational quality assurance, an information system serves to ensure the organizations' effective operation. Consequently, educational institutions should develop an administration and information system to ensure students' educational quality; in doing so, an administration and information system should be employed as part of educational quality assurance since an effective information system can assist administrators in performing any task rapidly and properly to accomplish the goals. Among many institutions, Khon Kaen University must use information to administrate its operation; notwithstanding such a need, it is apparent that educational quality assurance in the university does not use a central database; surprisingly, in institutions and faculties in the university, information is still stored in paper format or electronic one in the software. As a result, several issues have arisen out of that; to illustrate, obsolete information is difficult to be stored, retrieved and reported to administrators, staff do not utilize it and information presentations are not intriguing, all of which affect administration. Office of the Higher Education Commission has developed a database web application for educational quality assurance to enable tertiary level institutions and faculties of universities across the country since 2012-2014 to upload a report of performance in accordance with educational quality assurance indicators. Irrespective of such a web application, there exists a limitation in that it has not yet supported institutions as in a center, an office and a division in the university, so those institutions cannot upload any document or report. Besides, only system administrators of each institution can key in the data, which contradicts the reality in that in educational quality assurance, there should be several system administrators

or persons recording the data, each of whom is tasked or selected based on indicators assigned. In light of such an issue, this study aimed to investigate the educational quality assurance staff of Khon Kaen University's needs for development of an information system for educational quality assurance. It was conducted to offer a guideline for developing the information system which can enhance effectiveness of operation in educational quality assurance as well as allow the staff to create a performance report and store the documents based on indicators with which they are assigned effectively. Additionally, administrators will be able to monitor or verify the operational results and reports based on educational quality assurance indicators in preparation for auditing; the educational quality auditors in particular will be able to assess the operation or performance with ease.

### **Purposes of the study**

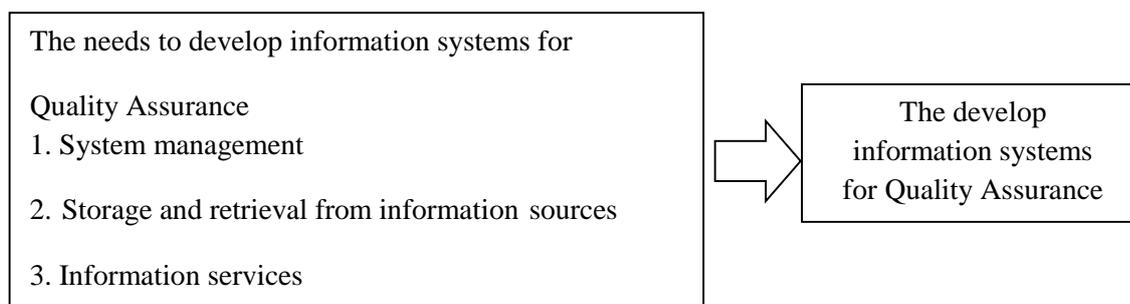
The study particularly had two purposes as follows:

- 1) to investigate the quality assurance staff of Khon Kaen University's needs for the development of an information system for educational quality assurance and
- 2) to develop guidelines for development of an information system to increase effectiveness of operation of education quality assurance.

### **Significance of the study**

- 1) Khon Kaen University will be provided with data or insights into the educational quality assurance staff' needs for development of an information system for educational quality assurance.
- 2) The results of the study would yield a guideline for developing an information system to enhance effectiveness of the operation of educational quality assurance.
- 3) Effectiveness of the information system of Khon Kaen University could be increased.

### **Conceptual framework**



**Figure shows the conceptual framework of this study**

## **2. Method**

### **Research methodology**

1) This study was survey research.

2) The sample was 70 workers out of 120 workers of Quality Assurance of Khon Kean University, accounting for 58.3 percent.

3) The instrument used in this study was a questionnaire about the needs to develop information systems for quality assurance of workers of Quality Assurance, Khon Kaen University to get ready for an external audit of higher education level. The questionnaires consisted of the following parts.

Part I: General background of the respondents as in genders, ages, status, education levels, type of personnel, position, affiliation, operation period and experience in information search

Part II: The needs to develop information systems for Quality Assurance consisted of 5-point likert-scale questions.

Part III: The suggestion parts to develop information systems for Quality Assurance to get ready for an external audit; this part used open-ended questions.

4) In collecting the data, was designed to seek the participants' collaboration in completing the questionnaires.

5) The collected data were analyzed with descriptive statistics, namely frequency, percentage, mean and standard deviation to describe the needs to develop information systems for Quality Assurance

For rating-scale questions, there were five levels as follows:

Highest level of operation/problems equals 5 scores

High level of operation/problems equals 4 scores

Moderate level of operation/problems equals 3 scores

Low level of operation/problems equals 2 scores

Lowest level of operation/problems equals 1 score

Mean scores can be interpreted as follows:

4.50 – 5.00 represents the highest level of needs

3.50 – 4.49 represents the high level of needs

2.50 – 3.49 represents the moderate level of needs

1.50 – 2.49 represents the low level of needs

1.00 – 1.49 represents the lowest level of needs

### 3. Results

1) In respect of respondents' genders, it was found that most of the respondents, 57 of them accounting for 81.40 percent, were female.

2) Based on their ages, the results demonstrated that 34 of the respondents, 48.60 percent, were 25-35 aged.

3) In looking into their status, the study found that 36 of the respondents, 51.40 percent, were single.

4) When considering their levels of education, it was discovered that 37 of the respondents, constituting 52.90 percent, held a Bachelor's degree or equivalent.

5) In respect of type of personnel, it was found that most of the respondents, 42 of them accounting for 60.00 percent, were staff of Khon Kean University.

6) Based on their position, 32 of the respondents, representing 45.70 percent, were Policy and Plan Analyst.

7) In looking into their affiliation operation period, the study found that 25 of the respondents, 35.70 percent, were less than 5 years affiliation operation period.

8) When considering their experience in information search, it was discovered that 34 of the respondents, constituting 48.60 percent, were more than 6 years experience in information search.

9) The individual results of the needs to develop information systems for Quality Assurance founded that

(1) System management at the high level. (Mean = 4.29, S.D. = 0.881)

(2) Storage and retrieval from information sources at the high level. (Mean = 4.23, S.D. = 0.941)

(3) Information services at the high level. (Mean = 4.32, S.D. = 0.734)

(4) Personnel at the high level. (Mean = 4.16, S.D. = 0.978)

(5) Materials, equipment, supplies and locations at the high level. (Mean = 4.24, S.D. = 0.965)

(6) Information format for quality assurance at the high level. (Mean = 4.31, S.D. = 0.890)

10) Each aspect of the results of the study can be summarized and presented as follows:

(1) A new information system for educational quality assurance was developed at the high level. (Mean = 4.03, S.D. = 1.116)

- (2) A new information system was not necessarily created; instead, the existing system was improved by developing an effective search engine with ease of accessibility to any source of information at the high level. (Mean = 3.74, S.D. = 1.282)
- (3) Each aspect of information was analyzed and synthesized in preparation for educational quality assurance at the high level. (Mean = 4.21, S.D. = 0.849)
- (4) A person responsible for monitoring and managing the system was appointed at the high level. (Mean = 4.39, S.D. = 0.804)
- (5) The person in charge's workload on management and monitoring of the information system was clearly determined at the high level. (Mean = 4.34, S.D. = 0.778)
- (6) A collaboration between institutions associated with the information system was well planned at the high level. (Mean = 4.34, S.D. = 0.849)
- (7) The information system was properly analyzed, designed and developed by experts at the high level. (Mean = 4.40, S.D. = 0.824)
- (8) There was a management system which reported outcomes and problems in relation to usage of the information system at the highest level. (Mean = 4.50, S.D. = 0.812)
- (9) Information for educational quality assurance was properly determined at the high level. (Mean = 4.47, S.D. = 0.737)
- (10) There was a database system rapidly responsive to management of information, storage and retrieval at the high level. (Mean = 4.49, S.D. = 0.756)
- (11) The database system could respond to information retrieval rapidly at the high level. (Mean = 4.26, S.D. = 0.988)
- (12) Information retrieval for educational quality assurance can be done with ease at the high level. (Mean = 4.17, S.D. = 0.978)
- (13) The university or internal institutes could access information at the high level. (Mean = 4.21, S.D. = 0.961)
- (14) A third party or external institutes outside the university could access information at the high level. (Mean = 4.11, S.D. = 1.029)
- (15) An information access and retrieval level was determined at the high level. (Mean = 4.31, S.D. = 0.877)

- (16) Information was properly categorized to facilitate users' information retrieval based on their needs at the high level. (Mean = 4.34, S.D. = 0.814)
- (17) Information on each different aspect was summarized to be used in educational quality assurance at the high level. (Mean = 4.20, S.D. = 0.910)
- (18) There was a notification service which notified administrators of essential information at the high level. (Mean = 4.20, S.D. = 1.016)
- (19) Every source of information is available 24 hours a day at the high level. (Mean = 4.30, S.D. = 0.857)
- (20) A number of staff offering services was sufficient at the high level. (Mean = 4.19, S.D. = 0.921)
- (21) Data can be stored or reserved from the original information one at the high level. (Mean = 4.27, S.D. = 0.815)
- (22) Information was valid, complete and reliable at the high level. (Mean = 4.47, S.D. = 0.717)
- (23) There was a network information system linking information across institutions in the university at the high level. (Mean = 4.49, S.D. = 0.717)
- (24) A system which monitored validity and quality of staff information was available at the high level. (Mean = 4.46, S.D. = 0.829)
- (25) A number of information staff was adequate in response to workload at the high level. (Mean = 3.86, S.D. = 1.158)
- (26) Staff's knowledge and expertise of information system information technology management were enhanced at the high level. (Mean = 4.24, S.D. = 0.970)
- (27) A training course and meeting were held to enhance administrators' knowledge of an information system for educational quality assurance at the high level. (Mean = 4.24, S.D. = 0.892)
- (28) Staff had positive attitudes towards the information system in terms of material, tools and places at the high level. (Mean = 4.30, S.D. = 0.890)
- (29) The problems about information system usage were constantly monitored and solved at the high level. (Mean = 4.23, S.D. = 0.935)
- (30) There was the development of a easy-to-use program or application for storing and analyzing information at the high level. (Mean = 4.34, S.D. = 0.866)
- (31) A handbook on operation and information system usage was written at the high level. (Mean = 4.20, S.D. = 1.016)

(32) Material and tools were sufficient and efficient at the high level. (Mean = 4.27, S.D. = 0.947)

(33) A network information system worked effectively and rapidly at the high Level. (Mean = 4.26, S.D. = 0.988)

(34) Maintenance of tools was constantly performed at the high level. (Mean = 4.17, S.D. = 1.049)

(35) A place or location was appropriate to offer information services conveniently and rapidly at the high level. (Mean = 4.19, S.D. = 0.952)

(36) Presentations of information for quality assurance such as a report or statistics were appropriately specified at the high level. (Mean = 4.27, S.D. = 0.947)

(37) The information system for educational quality assurance must respond to administrators' needs interactively, similar to documents on World Wide Web at the high level. (Mean = 4.34, S.D. = 0.832)

#### **4. Discussion and Conclusion**

##### **Summary of the study**

##### **Strength**

- Online system
- Staff had expertise in information and were capable of designing a database system.
- Information collection planning and assignment of a person in charge
- Persons in charge constantly monitored the information.
- A strong network
- An online system of the faculty for keying information through the quality assurance website was developed.
- An online central information-storage system was available and effective.
- Internal educational quality audit on a faculty and program level was conducted each year.
- Data were derived from the institutions' outstanding performance.
- Staff were aware and understood the criteria for quality audit.
- Each institution's responsibilities were assigned in accordance with the criteria.
- Administrators and operator staff attempted to understand a quality assurance system.

- An electronic database system was developed and used across faculties and the university.

### **Weakness**

- The system did not have a sufficient space, so it resulted in delayed or long duration of uploading documents.

- The information system was developed to support or facilitate quality assurance.

- Not all staff were aware of the importance of information.

- There should be a larger number of system administrators.

- A form for recording information can be easily monitored.

- A network of quality assurance should be established.

### **Discussions of the results**

#### **Recommendations**

Problems of data and information collection

- Dissemination and communication between administrators and operators

- Data collection was viewed as a burden.

- Involved institutions did not fully cooperate.

- A number of information staff was insufficient, and the staff lacked understanding of quality assurance.

- Budget allocation, administrators' decision-making in creation and acceptance of the information system

- There was none of the information system covering or fulfilling auditing requirements.

- Institutions in the university used different forms to obtain data from the faculties.

- Uploading documents or evidence was complicated, resulting in inconvenience or difficulty in uploading documents.

- The system may break down when there was too much traffic on the server – too many users accessing the system simultaneously.

- Data on performance must be collected from individuals responsible for each different work. Given that the data have not been shared, an analysis of information can be difficult, and information cannot be used instantly.

- Promoting staff's understanding of the auditing criteria

#### **Recommendations**

- Creating an up-to-date system to facilitate information storage accurately

- Proactive working was done by summarizing KPI from work process in conjunction with associated KPI criteria. A person in charge was clearly specified; subsequently, proactive working was done to design a database system for storage, and the storage duration was set.

- Quality assurance and quality auditing should be systematic; benefits should be shared, overlapping of work should be reduced and development should be emphasized.

- There should be a brainstorming session to seek a guideline or approach to data storage in compliance with the needs of QA.

- Development of the information system should be considered as urgent work.

- An online auditing system should be available, reducing paper work.

- There should be joint integration and a joint meeting or training course to promote understanding of advantages and disadvantages from the information system.

### **The conclusion**

For the development of the information storing system, a meeting should be held to discuss and share ideas since each faculty used and stored information differently.

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# THE PROBLEM AND SOLUTION OF COMMUNICATION SKILLS BETWEEN FOREIGN AND THAI OFFICERS IN THE UNIVERSITY

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## **Abstract**

*This study aims to analyze the communication problem taking place in cross-cultural setting. The focus of this study is on the foreign staff who are currently working at the Faculty of Humanities and Social Sciences, in one of the famous universities in Thailand. The Faculty of Humanities and Social Sciences is the faculty that contains the foreign staffs the most compared with other faculties. English, Chinese, Japanese Spanish, German, French, and Vietnamese languages are taught by native foreign teachers. The researcher collects the communication problems from the fifteen foreign teachers and analyze the solutions in the organization between Thai and Foreign staff focusing on both Thai and English languages. The result found that Thai language skills seems inadequate for the foreign staff who work in the organization. The foreign staff need more advanced Thai language skills in order to comprehend the language spoken by the local staff, especially Thai writing and reading skills. The result indicates the essential of language courses, which can help promote language communication development in the organization.*

**Keywords:** *The problem of communication, the solution of communication, foreign workers*

## **1. Introduction**

Faculty of Humanities and Social Sciences is widely known that it offered many languages programs. Apart from Thai language itself, there are seven other foreign languages namely, English, Chinese, Japanese Spanish, German, French, and Vietnamese. With the languages offered in the program, it is essential to hire the native speakers of each language to be the teachers so that the undergraduate students are being able to get exposed to the language truly. With the variety of languages and cultures, to make an announcement, to distribute the information, and to provide news for the foreign staff, it requires English language as a mediator for communication.

Also, some foreign teachers cannot use English or Thai well enough; likewise, some Thai staff are unable to use English well enough. Thus, when the communication takes place it requires an interpreter under the position of International Relations Officer to help with translation between Thai and English languages. However, the supportive staff who are able to speak both languages are not enough, and it gets difficult when the foreign teachers themselves could not use neither Thai nor English language. Thus, the main focus languages must be Thai and English that both Thai and Foreign staff have to take into consideration. Anyhow, this study emphasizes on studying on the problem and solution of communication skills of the foreign staff with Thai staff with it aims to promote the efficiency and effectiveness of working. There is the study about the communication problems found in the business fields. It is proposed top ten communication issues. The first one is failing to listen to the interlocutors. The interlocutors are probably disturbing each other and lead to pay less attention to the speaker. The second issue is that there are many obstructs with the different channels of communication i.e. email, short note, video conference, etc. that block the interlocutors to interact to each other in person for better understanding. The third issue is the difference between cultures. This is quite difficult to determine; however, the staff in the organization must stay neutral and be open-minded. The fourth one is ego. This seems problematic with the people's behaviour, and it is difficult to change them. The organization may need to provide some organizational culture so that all staff know how to get along with others and can work together happily. The fifth issue is about hierarchy. The staff may be afraid of sharing the ideas to the authority person which is leading to incomplete communication. The sixth issue is about poorly written communication. With the incorrect spelling, grammar structure, and other kinds of written language, the readers may be not understanding the utterance of the written text. The seventh issue is about gender bias. In some communication, the speakers may want to convey the message relating to only the speakers' same gender which do not allow other genders to share an idea. The eighth issue is misinterpretation the message due to the difference between the generations. The ninth issue is inadequate knowledge between the interlocutors. The last one is about the characteristic of individual staff member or a group of staff. For example, if one person has good relationship with a group of the staff in the organization it may lead them to be able to proceed their work faster. However, the other person does not have good relationship with that group, the process can be slower and less cooperative than the previous person (Campbell, n.d.).

Communication takes place when the two speakers want to convey the content to each other meaningfully. Apart from being able to understand the meaning of the message, it is important to be equipped with the communication strategies which

allows the listeners and speakers achieve the communication goal. Cook, Lally, McCarthy, and Mischler (n.d.) studied on why and how communication strategies should be developed within the organization. The studies proposed the communication strategies process. Firstly, the analysis the whole picture of what have to be accomplished. Secondly, it is importance to define the goals of the organization. Thirdly, specific goals with the special focus on the smaller scale are emphasized. Fourthly, the target audience or a specific group of people must be taken into consideration. Fifthly, to develop the key message in order to better understand the goals shows the main idea of the communication. Sixthly, the timeline proposal of the event as well as the planning development are using to track and focus each step taken. Seventhly, to present the message and assessing it if the communication works. If it does not work, the communication strategies must be adjusted accordingly by revising all steps again.

The communication among the cultures or cross-cultural communication can be one of many aspects to be looked at. As you know that many cultures, they have their own ways to speak something. In one culture, the utterances are likely to be appropriate; however, the same utterances seem unacceptable in another cultures. Lee (n.d.) advised some important principles for the cross-cultural communication. Firstly, the listeners should be open-minded, nothing is personal but the difference of cultures per se. If you are capable to understand many more culture, you will be able to fill the gap, and eventually it promotes the communication comprehension. The second principle is being able to understand the verbal and nonverbal behaviour. For example, in some cultures people look at each other eyes in order to ensure that they are attentively listening to what the interlocutor is saying. Unlike another culture, to look at the older person's eye can consider as a rude person, who is challenging an authority. The third and the last principle is gestures. Gestures are not something universal; however, it uses differently and means different things in different cultures. Gestures pay an important role since it deals with sensitivity of the message receiver. They may either interpret correctly or wrongly depending on how much they know the message conveyer's culture.

Another study is about miscommunication in cross-cultural exchanges. Communication Theory listed six issues that seems to be problematic namely, assumption of similarities, language differences, nonverbal misinterpretation, preconception and stereotypes, tendency to evaluate, and high anxiety. People may observe the similar things and make an assumption that it is the universal meaning. Anyhow, each culture can interpret things differently. The more we know about culture, the more we open up for differences.

## **2. Method**

### ***2.1. Participants and settings***

There are fifteen participants for this study from the Faculty of Humanities and Social Sciences, in one of the famous universities in Thailand. The total number of the participants are fifteen: five of them teaching English, two of them teaching Chinese, Japanese, Spanish, and French, and one of them teaching German and Vietnamese. The participants are all the foreigners with the permission to stay in Thailand. They all have work permits issued by the Office of Labour, Thailand, which allow them to legally work as a teacher in Thailand. The participants have one-year contract which is extended every year according to their wills and their working performance. These positions are permanently allocated to the faculty itself, which means that the teacher can stay as long as they would like to. This group of teachers are very interesting because their working status is almost equal to Thai citizen in many aspects i.e. being able to obtain the social security in Thailand and have to pay the income tax Thai staff.

### ***2.2. Research Instrument***

This study uses mixed method. The questionnaire is used for both quantitative and qualitative data collection. The questionnaire consists of five parts as follows.

**Part I** To conduct the general data i.e. teaching subject, institutions that participants graduated, in which situation that language is used the most, duration of staying in Thailand, the previous English or Thai courses, etc.

**Part II** To conduct the data about Thai and English Proficiency level

**Part III** To conduct the most frequent used communication topics using in the organization

**Part IV** To conduct the data regarding the skills that the participants want to improve for better communication within the organization

**Part V** To conduct the data about how the faculty can offer for the participant to improve communication skill

### ***2.3. Data collection***

The research used Google Form to create the online questionnaire. Then the link of the online questionnaire is be distributed to all participants. The fifteen participants are required to complete the questionnaire within one-month timeframe. It allows the participants to gather the information before answering the questionnaire.

### ***2.4. Data analysis***

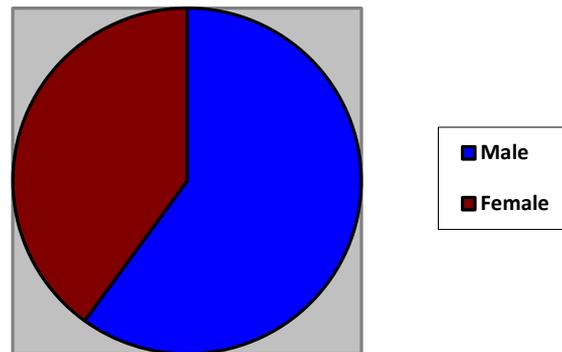
Statistical data and content analysis are used for data analysis. For statistical data analysis, Google Analytic is used automatically for the online questionnaire. Percentage, frequency, mean and M.D. scores are used for statistical data analysis. For qualitative data analysis, the content analysis is used.

### 3. Results

#### Part 1. General Information

##### 3.1. Gender

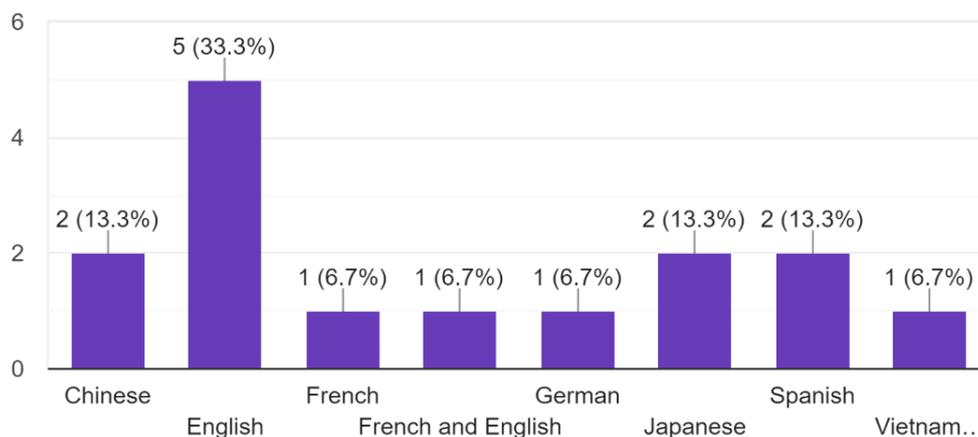
There are 60% of the participants who are male and 40% who are female answering this questionnaire.



**Figure 1. Genders of the Participants**

##### 3.2. Language of Teaching

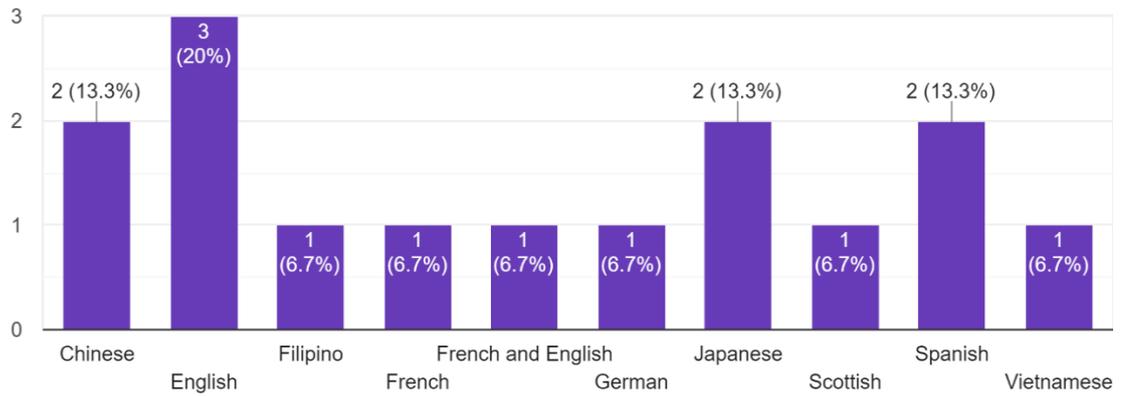
There are seven languages which Chinese, English, French, German, Japanese, Spanish and Vietnamese. There is one participant who could teach both English and French. It seems like the number of English language teachers answered this questionnaire the most (33% or 5 participants).



**Figure 2. Languages of Teaching**

##### 3.3. Native Language

There are eight native languages namely, Chinese, English, Filipino, French, German, Scottish, Spanish and Vietnamese. There is one participant who is the bilingual because his or her native languages are French and English.



**Figure 3. Native Languages**

**3.4. What is your university's name and the country you graduated from?**

The fifteen participants answer fourteen universities from different universities which are;

**Table 1: University's names that the participants graduated**

<b>Participant No.</b>	<b>University's name</b>
1.	Iowa State University, USA
2.	University of Aberdeen Scotland, University of Leicester, England
3.	Ohio University, U.S.A.
4.	University of Montpellier, France
5.	University of Bonn, West Germany
6.	Southeast University, Sun Yat-Sen University, China
7.	University of Central Missouri, Northern Arizona University, USA
8.	Salamanca
9.	University of Geneva, Switzerland
10	Kyoto University of Foreign Studies
11.	Japan
12.	Yunnan Normal University
13.	Hanoi Architectural University, Vietnam
14.	Adamson University, Manila, Philippines
15.	Iowa State University, USA

### 3.5. What languages are you speaking the most in Thailand?

There are six languages that the fifteen participants speak the most in Thailand which are English, Thai, French, German, Chinese, and Japanese. The participants speak more than one language in order to communication with people. The most languages the participants speak the most in Thailand are English and Thai.

**Table 2: The languages the participants speak the most in Thailand.**

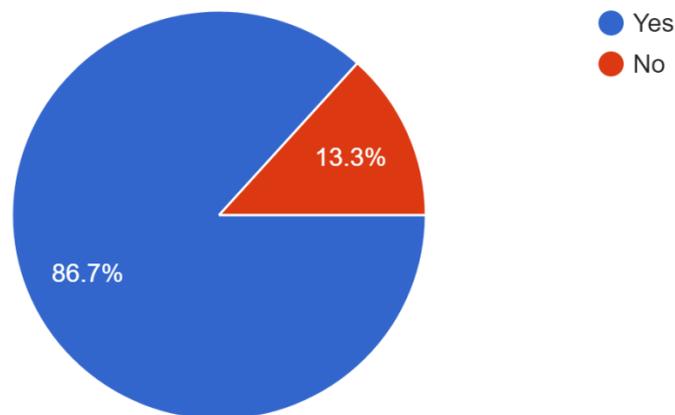
Language	Frequency of answers	Percentage
English	8	34.78%
Thai	9	39.13%
French	2	8.70%
German	1	4.35%
Chinese	2	8.70%
Japanese	1	4.37%
Total	23	100%

### 3.6. How long have you been living in Thailand?

There durations that the participants live in Thailand are 30, 25, 17, 13, 10 (two participants), 8, 7 (two participants), 6, 3.5, 2 (three participants), and 1 year respectively.

### 3.7. Have you ever studied Thai language courses?

There are thirteen participants have studied Thailand courses which is accounted for 86.7%.



**Figure 4. The percentage of the participants who have studied Thai language course before**

### 3.8. How many Thai friends do you have?

Only one participant has twenty Thai friend, and two participants have ten Thai friends. The rest of the participants have only few Thai friends.

## Part 2. Language Proficiency

### 2.1. Thai language proficiency

There are five scales of Thai language proficiency used for the listening, speaking, reading and writing skills, which 5 is the highest Thai language proficiency, whereas 1 is the lowest Thai language proficiency. For listening skill, there are 33.33% of the participants measured themselves at the levels of 3 and 4 equally, which is considered as the middle to high proficiency. For speaking skill, over 40% of participants agreed that their speaking skill in on level 2, which is quite low proficiency. For reading skill, 46.67 % of participants agreed that their Thai reading skill is on level 2, which is quite low, and 33.33% agree on level 1, which is the lowest. For writing skill, 73.33% of the participants agreed that their Thai writing skill is on level 1, which is the lowest.

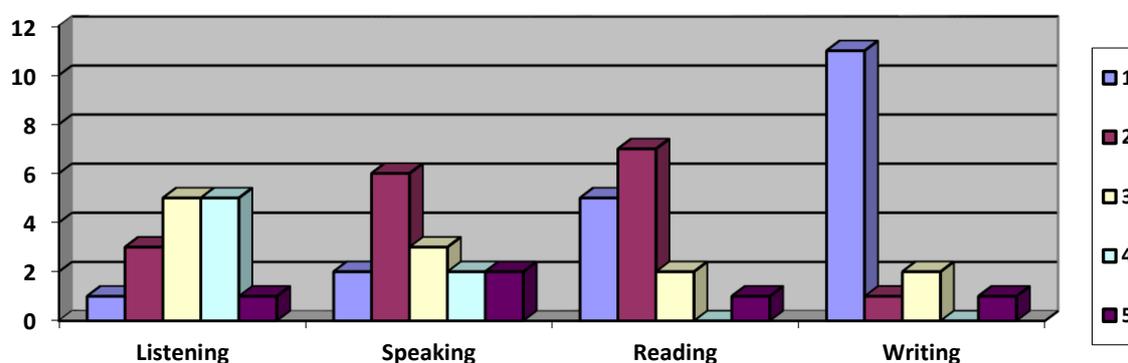
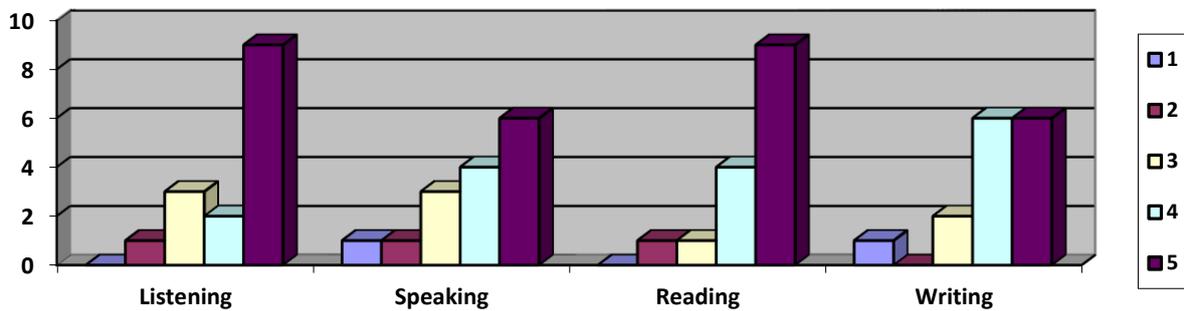


Figure 5. The participants' Thai language proficiency

### 2.2. English language proficiency

There are five scales of English language proficiency used for the listening, speaking, reading and writing skills, which 5 is the highest English language proficiency, whereas 1 is the lowest English language proficiency. For listening and reading skills, 60% of the participants measured themselves that they are on level 5, which is the highest English proficiency level, and no participants measured their listening and reading skills on level 1 at all. For speaking skill, 40% of the participants chose level 5, which is the highest. For writing skill, 40 % of the participants

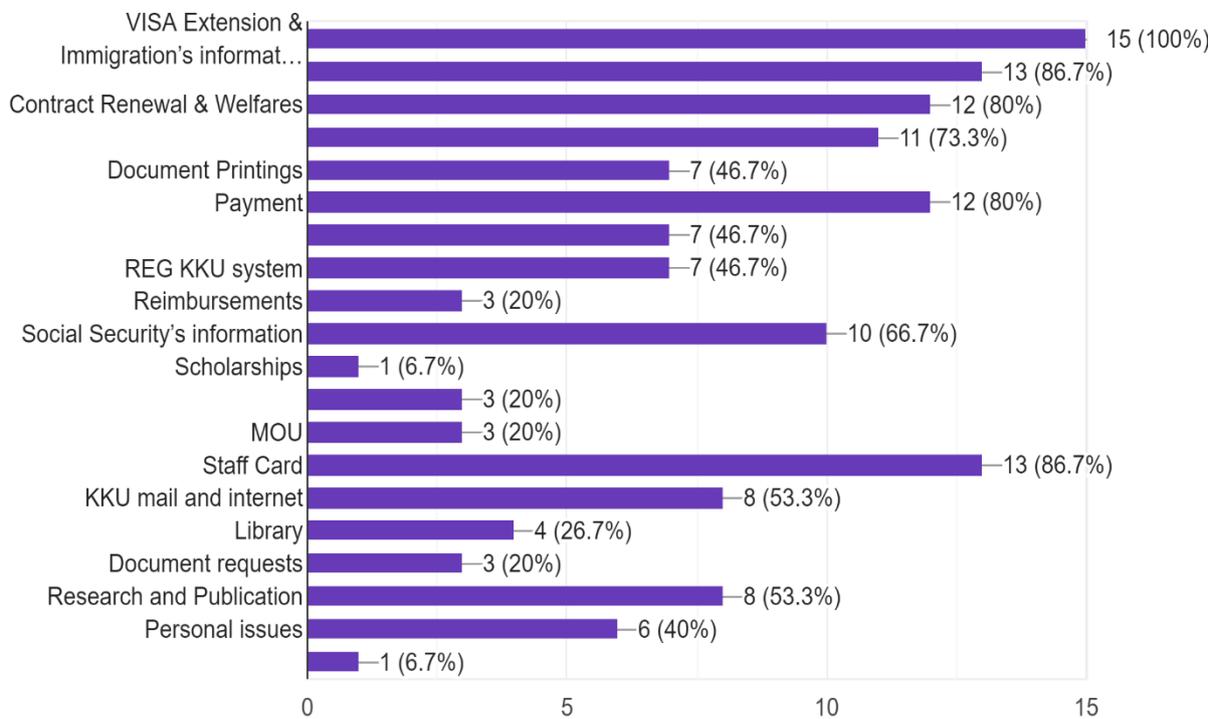
measured themselves that they are on level 4 and 5, which is the high and the highest levels respectively.



**Figure 6. The participants' English language proficiency**

### Part 3. Topics of communication in the organization

There are generally twenty topics of communications in the organization. The top six topics that the participants use to communicate the most namely, VISA extension and immigration's information, work permit extension and employment, staff card issuance, contract renewal and welfare, payment, and teaching schedule are accounted for 100%, 86.7%, 86.7%, 80%, 80%, and 73% respectively. The scholarship and other issues were mentioned the least at 6.70% equally.

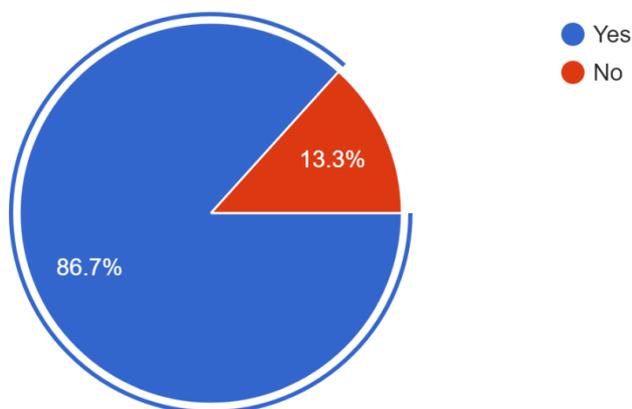


**Figure 7. Topics of communication in the organization**

## Part 4. Communication Skills Improvement

### 4.1. Do you want to improve your communication skills?

There are 86.7% of the participants want to improve their communication skills.

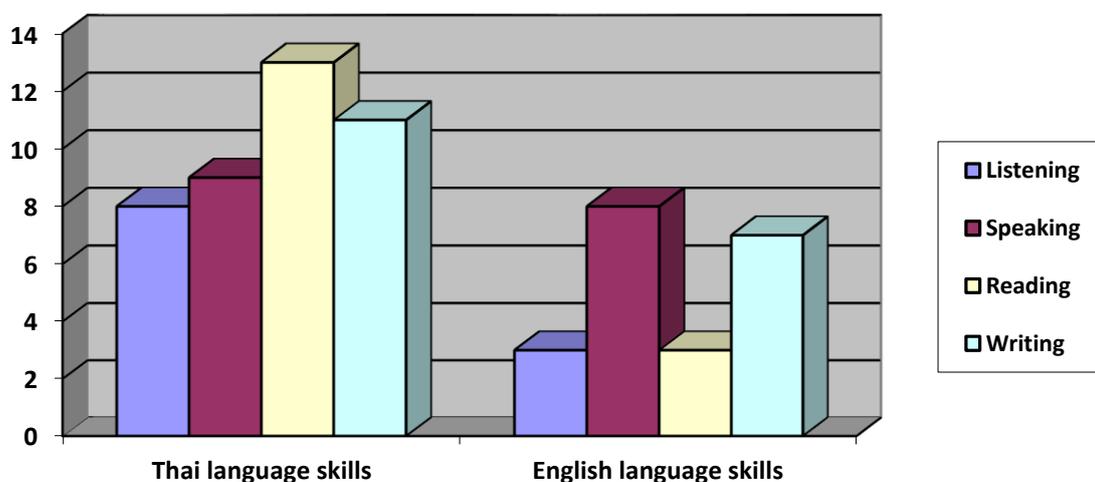


**Figure 8. The percentage of the participants who want to improve their communication skills**

### 4.2. What communication skills do you want to improve?

For Thai language, the participants want to improve Thai reading skill the most at 86.67% followed by This writing skill at 73.33%. There are 60% and 53.33% of the participants who want to improve speaking and listening skills respectively.

For English language, the participants want to improve English speaking skill the most at 53.33% followed by English writing skill at 46.67%. Only 20% of the participants want to improve listening and speaking skills equally.



**Figure 9. The skills that the participants want to improve**

**Part 5. How could HUSO promote communication skills?**

**5.1. How could the organization help in developing your communication skills?**

**Table 3: There are eight suggestions the organization can support the communication skills**

<b>Participant No.</b>	<b>How the organization help the foreign teachers to develop communication skills</b>
1.	Offer language courses
2.	Offer individual Thai class for individual preferences and teaching schedule
3.	Offer Thai courses
4.	Provide 30-hour Thai course about the language used in the office
5.	Private class for Thai and dialect languages
6.	Offer advanced courses
7.	Arrange Thai and English classes that help promote four skills
8.	Organize language short courses

**5.2. Suggestions**

**Table 4: There are six other suggestions.**

<b>Participant No.</b>	<b>Other suggestions</b>
1.	Have more Thai and foreign staff events
2.	Provide 30-hour Thai course about the language used in the office
3.	Offer more Thai and English courses
4.	Provide a language learning allowance as part of our contract.
5.	Open more opportunity for language exchanges
6.	Communication may be seen apart from languages, for example working styles and cultures.

#### **4. Discussion and Conclusion**

For part one, the general information was conducted. Sixty percent of the participants are male, and forty percent are female teaching different seven languages namely, Chinese, English, French, German, Japanese, Spanish and Vietnamese, mostly according to their native languages. The universities that the participants graduated were in the United State of America, the United Kingdom, France, Germany, China, Spain, Switzerland, Japan, South Korea, Vietnam and the Philippines. Among those eight languages (plus Thai language), the participants speak Thai and English languages the most in the organization, which are accounted for 39.13% and 34.78% respectively. Anyhow, there are over 86.7% who have studies Thai courses before, and all of the participants have Thai friends to help with Thai language practice.

For part two, the participants measured themselves their Thai language proficiency, and the result showed that their Thai writing skill seems to be problematic for them the most (on level 1), followed by Thai reading and speaking skills respectively. Thai listening skill seems to be less problematic for them. However, their English proficiency seems much better than their Thai language skills because the statistic indicated that their English listening and reading skills were on the highest proficiency levels.

For part three, the topics that the participants speak the most in the organization were about VISA extension and immigration's information, work permit extension and employment, staff card issuance, contract renewal and welfare, payment, and teaching schedule. As we can see that the VISA and the immigration's information are the most concerns that all participants need to consult with Thai staff, and it implies that it is the most important issues for them to stay in the Kingdom of Thailand. The second most importance is about work permit extension and employment which is accounted for 86.7%. It is also about the secured status for the foreigners while staying in Thailand. The staff card, contract and payment were considered as important topics to be talking in the organization since it deals with the university's level.

For part four, almost all participants want to improve their communication skills. Thai language skills were much wanted compared with English language skills. Thai reading and writing are the skills that the participants wanted to improve the most.

For part five, the participants suggested what the organization could possibly do in order to promote their language skills. Most of them wanted the organization to offer more Thai language course, provide some private language courses, provide more advanced courses for advanced learned because some teachers have taught for

over 30 years but some just taught for only few years, so the language competences were not the same to put into the same class, and the extra language courses must go together with their current teaching schedule. Additionally, the participants also suggested the organization to host the event that they could get exposed to Thai and English languages with Thai staff.

To conclude, the result indicates the language courses are not adequate for foreign teachers who stayed in this organization. To promote the communication skills, the foreign teachers need more Thai advanced language courses focusing on writing and reading, more opportunities to use languages with the local staff, and more flexibilities to choose the suitable time and level of their current language proficiency. The limitation of this study is that the number of the staff in this organization are quite small, and to do a research with other organization can have different results.

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# VIETNAM'S SOCIAL INSURANCE

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## **Abstract**

*This article aims to provide an overview of Vietnam's Social Insurance, assess the current status of policy development and implementation, as well as social insurance regimes in Vietnam in the past. The study draws positive results, limitations, targets orientation and proposes solutions to reform policies, implement social insurance regimes to ensure all members have safe and stable life, and contribute to the country's sustainable economic development.*

**Keywords:** *Social Insurance, Compulsory Insurance, Voluntary Insurance, Social Insurance Fund*

## **1. Introduction**

The system of social insurance was first formed in Prussia (now Germany) in 1850, including regimes: sickness, occupational risks, old age, disability, with the participation of employers, workers and the state (Hennock, 2007). Since then, social insurance has been spread to Europe, appearing in England and Italy (1919), to France (1918), to Latin America, the United States and Canada after 1930. Social insurance was formed the latest in Africa and Europe after World War II. There are many concepts and components of social insurance. According to the International Labor Organization (ILO), social insurance is the protection of society for members of society through a series of public measures to deal with social risks, first of all, due to lost or greatly reduced income because of illness, incapacity, old age, death, and providing medical care and subsidies to families which have lots of children. Specifically, according to the 1952 convention of ILO, social insurance consists of nine regimes: medical care, allowance for sickness, unemployment, old age, labor accidents, occupational diseases, family subsidies, pregnancy, disability, and death (International Labour Organization, 1952).

Social insurance is an alternative to compensate a part of employees' income when they lose or reduce their income due to illness, maternity, occupational accident and occupational disease, disability, unemployment, old age, death, based on a

financial fund due to the contribution of the social insurance parties, with the protection of the State according to the law, to ensure the safety of life for workers and their families and contribute to ensuring social safety (Sugarman, 1987).

Although there are different concepts and contents of social insurance regimes depending on the socio-economic development conditions of each country in each period, they all share the same purpose to ensure human rights, progress, fairness, stability and contribute to sustainable social development. Each country may apply only a number of regimes, but at least apply regimes: unemployment benefits, old age, occupational accidents and occupational diseases, disability or death allowance. Although countries in different periods have different social insurance regimes, they are in the principle of paying, sharing, forming and using concentrated social insurance fund, under protection and participation in investment in developing fund of the state. Based on each country's conditions and levels of socio-economic development, it designs and implements social insurance policies with different regimes and levels of influence, but the general trend of countries around the world is towards universal social insurance, which means to ensure social security for all members of society.

There are three groups of social insurance. Group 1: Basic pension insurance (social retirement) has a widespread nature. Group 2: The social insurance regimes for employees under the mechanism of contribution - receiving. Group 3: Voluntary supplementary insurance policies agreed upon by the parties, or saved for use after retirement. Among the above three groups of social insurance policies, group 2, according to the contribution-receiving mechanism, is the most concerned, basic and popular. Principles for contribution-receiving are legalized and calculated to determine specific levels for each regime and each period, with appropriate adjustments to socio-economic development conditions. The national social insurance system consists of all three groups of policies and regimes, but there is a focus on a basic group, the remaining groups have additional supportive nature.

Vietnam is a country which specially cares for problems about social insurance and social security (Somanathan, Tandon, Dao, Hurt, and Fuenzalida-Puelma, 2014). The National Congress of the August 1945 issued 10 policies. It includes promulgation of Labor Law, 8-hour working day, minimum wage setting, insurance society setting. It can be said that this is the first step of Vietnam Social Insurance. In January 1962, the Social Insurance Regulations clearly and fully stipulate the previous social insurance regimes: improving wages, allowance for sickness, childbirth, labor accidents... There are two legal documents specifying six social insurance regimes in our country: illness, maternity, occupational accidents, occupational diseases, loss of labor, retirement and death. The social insurance fund is made up of contributions from agencies and enterprises with a contribution of 13%

of the salary fund, of which 8% is spent on labor loss, pension and death benefits, 5% for illness and maternity, occupational accidents and occupational diseases, but in this period, the state has mainly to compensate to cover all expenditures (in 1993, the level of compensation for the state social insurance fund reached up to 92.7%). In 1989, the draft on social insurance included five regimes for employees working in non-state economic sectors and the state issued the Regulation on health insurance in 1992. In 1993, there was a fundamental innovation in the social insurance mechanism: agreement on the organization of the social insurance career management apparatus, on the obligation to pay, to ensure equality and expand the social insurance participants in the economics components, transferring from social insurance through budget to establishing independent social insurance fund, separating social insurance regimes from social preferential regimes and using monetary units as benchmark of social insurance premiums. In 1995, Vietnam's social insurance organization was established. The process of formation, implementation and development of social insurance policies of our country during the past few decades has obtained positive results and there are also certain limitations that need to be supplemented, and amended.

## **2. Vietnam's Social Insurance**

### ***2.1. Positive results***

Vietnam has clearly and properly recognized the role of social insurance, and always attaches importance to and unifies this viewpoint throughout the process of socio-economic development (Giang, 2008). Recognizing that social insurance is a key component of social security, has a positive impact on supporting each other with other components in the overall social security system. Social insurance is always improved in accordance with the social security system, which is increasingly supplemented and diversified and flexible.

Laws, policies and social insurance systems have been institutionalized by the state more and more appropriate and effective in each period of socio-economic development of the country. The system of policies and social insurance regimes have been reformed many times in accordance with the conditions of our country and gradually reached international standards in the direction: The social insurance system focuses on implementing the principle of contribution and enjoyment; The social insurance fund no longer depends on the state budget, but the sharing and contribution of the employers, workers and the state's support; Social insurance organization system was formed and operates independently, autonomously, operates under the mechanism of public non-business units, makes lucrative investments on the basis of effective revenue and expenditure to ensure and develop the social insurance fund day by day.

Social insurance policies have been improved, diversified and comprehensive. Currently, social insurance is a combination of compulsory social insurance with five voluntary social insurance schemes with two regimes, unemployment insurance (unemployment insurance), health insurance (health insurance)... On the other hand, social insurance is increasingly access to international standards. Especially complying with ILO Convention 102, minimum regulations on social security, basic rights of workers and citizens aim to ensure their stable and safe life. Along with the socio-economic development, social insurance is increasingly improved to suit the development situation of the country, balances between revenues and expenditures. The cohesion, support and unity of action between the subjects participating in social insurance are more and more tight and effective.

Independent, autonomous, specialized and professional social insurance agencies were established, that makes state management and organization of social insurance implementation more flexible and effective. State management functions are shown when building, supervising, modifying and completing social insurance policies more and more enhanced. At the same time, the country implements social insurance policies more widely, comprehensively, conveniently and effectively for social insurance participants.

The results of social insurance policy implementation have been progressing positively. The number of participants in social insurance are increasing. Comparing the period from 2007 (the year when the Law on Social Insurance comes into effect) until May 2018, we see a significant increase in the number of people participating in social insurance and shown in the table below:

**Table 1: The number of people participating in social insurance**

	<b>2007</b>	<b>May 2018</b>
The number of people participating compulsory social insurance	7 million people	13,79 million people participating compulsory social insurance + (240.000 people participating voluntary social insurance)
Proportion of people participating in social insurance / total labor force	15,01%	25%

*(Nguyen, Hoang, 2017)*

In 2007, the number of people participating in compulsory social insurance increased at the highest rate of 21% compared to 2006, then this increase only fluctuated around 7% per year in the period of 2008-2016. In 1995, the number of

social insurance participants was 7.8% of the total labor force (accounting for 8.5% of the labor force in the age group). But by 2007 the rate had increased to 15.01%, and by 2016 this rate was 24% (accounting for 28% of labor force in the age). Until May 2018, the number of participants of compulsory social insurance was 13.79 million, and 240,000 people participated in voluntary social insurance, with the proportion of social insurance participants compared to the total labor force in and above the national age of 25 % (accounting for 28.74% of labor force in the age group). The beneficiaries of social insurance regimes are also expanding, from 2017 to 2018, there has been a certain increase.

**Table 2: Participants in the 2017-2018 social insurance regimes**

	2017	2018	+up/ - down (%)
The number of people entitled to retirement, death, labor accidents and occupational diseases	100.732 people	122.843 people (retirement: 99.290 people)	+21,95
The number of people receiving the social insurance regimes once	695.363 people	810.033 people	+ 16,49
The number of people enjoying regimes of sickness, maternity, health recovery	9.138.069 people	9.750.393 people	+6,7

*(Vietnam Social Security, 2017)*

Income-expenditure of social insurance fund has certain residuals. In 2017, the revenue and expenditure of compulsory social insurance funds, voluntary social insurance and unemployment insurance, all showed the surplus of funds.

**Table 3: Income-expenditure of social insurance in 2017**

	Income for social insurance fund in 2017	Expenditure of social insurance fund in 2017	Percentage of expenses (%)
Compulsory social insurance	197.450 billions dong	133.941 billions dong	68%
Voluntary social insurance	1.207 billions dong	784,55 billions dong	65%
Unemployment insurance	13.518 billions dong	7.831 billions dong	58%

*(Vietnam Social Security, 2017)*

In comparison with 2007, the social insurance fund revenues and expenditures in 2007 was VND 23,755 - VND 14,465 billion (the ratio of revenue and expenditure was 60.89%), with the social insurance fund revenues and expenditures in 2017: VND

291.321 billion - VND 270.236 VND (the expenditure ratio is 92.76%), showing that the revenue and expenditure levels and social insurance spending / collection ratio in the 10 years increased rapidly. We can consider more specifically the balance of revenue and expenditure of social insurance and unemployment insurance in 2017 according to the table 4:

**Table 4: Balancing social insurance revenues and expenditures**

	<b>Payment/ revenue rate in 2017 (%)</b>	<b>Total balance (billions dong)</b>	<b>Increase compared to 2017/2016 (billion dong)</b>
Social Insurance Fund	92,76	540.005	88.399
Sickness and maternity fund	97,61	14.688	550
Insurance fund for labor accidents and occupational diseases	10,87	36.885	4.819
Pension and death fund	57,19	488.431	83.030
Unemployment Insurance Fund	47,96	67.320	9.038

*(International Labour Organization, 2018)*

According to the data in Table 4, all the number of social insurance fund increased compared to 2016. Pension, death and maternal illness funds have a rather large spending ratio. On the other hand, social insurance payment activities are applied with the rate of 63/63 provinces, with 11,164 communes and wards (100%) of the whole country, of which 21% receive pensions, social insurance and unemployment insurance through ATM cards. All of the above figures show that the implementation of social insurance in the past has obtained positive results in all aspects.

## **2.2. Limitations**

Although social insurance has met an important role in the social security system, it is still not synchronized, integrated and actively supported with other policies of social security system. This shows that the benefits of insurance regimes are not enough to ensure a certain and stable life for insurance beneficiaries. Unemployment insurance also has not positively affected the unemployed in order to help them find jobs. The beneficiaries of social insurance are mainly wage workers, so the effect of social insurance in rural areas is very small, and there is no significant impact on sustainable poverty reduction. Social insurance schemes still apply only to those who participate mainly in insurance contributions, but do not yet support those who do not participate in social insurance but need assistance such as poverty, disease, disability labor, or encountering events, but these objects also account for a

large proportion in the society. The relationship between contribution and receiving is unreasonable: people who pay but they can not receive anything (people who pay full but do not have any problems in work, life, or loss before retirement). People who do not pay fully but when they are in trouble (for example: sick, accident...) are still paid. Additional social insurance policies on the basis of agreements in enterprises, savings pension insurance and basic pension insurance (social retirement) have not been implemented popularly and effectively.

The correlation between contribution, sharing and support of the state is unreasonable. Social insurance follows the guideline, taking the contribution of the majority to pay for the few people who have difficulties, instability in health, low income and are unable to work. However, the correlation between contribution - benefit, special contribution – benefit in retirement mode, and how to determine the closing rate and the level of benefits are not reasonable. The accumulation rate is 2% for 1 year after paying social insurance while the maximum receiving is 75% of basic salary. This rate is higher than the international one (1.5% and 60% respectively). The minimum time to pay for 20 years of social insurance is twice as long as the international one for 10 years. On the other hand, prescribing the retirement age for men is 60 years old and women are 55 years old from 1960. Moreover, the average life expectancy in 1960 is 40 years old and it is 73.5 years in 2018, so the fund to pay pensions will increase and make the salary support budget increase significantly. In addition, the proportion of people who pay a pension compared to 1 person who receives retirement salary has significantly decreased in the past two decades, that puts more pressure on the pension fund of social insurance. That the pension was adjusted based on the growth rate of the minimum wage (base salary) in the administrative and non-business sector has led to an increase in the pension fund and social insurance support budget.

The government's activities on social insurance are not reasonable and effective. Although the social insurance agency is assigned the function of self-reliant and self-responsible public service, it is still in fact subsidized. The relationship between social insurance and employees and organizations and enterprises is still lacking. The inspection and supervision activities of social insurance agencies and socio-political organizations have not been thorough, and the sanctions are not strong enough, so the observance of compulsory social insurance regimes of organizations and types business image is still not good. The database is not comprehensive, up-to-date and modern information technology applications in management are not popular.

The number of participants in social insurance has increased but the proportion of the total labor force are still low. According to statistics, by 12/2017, the number of enterprises participating in compulsory insurance accounted for only 36.5% of the

total number of enterprises required to participate in insurance, and only 80% of the number of employees compulsory insurance premiums on total insurance employees (General Statistics Office of Vietnam-GSO, 2017). In rural areas, although there are many mobilization measures, only 300,000 rural workers participate in voluntary insurance on a total of 40 million rural workers (accounting for 0.75%) (GSO, 2017). Compared to 48.2 million workers in working age, the number of employees participating in insurance only accounts for 30.35%, and compared to the force in and above the age of 54.8 million then this rate only accounts for 24.85% (GSO, 2017).

### **3. Orientation and solutions for social insurance development in the period 2020-2050**

#### **Orientation**

First, emphasizing the role of social insurance is one of the core policies of the social security system. The government's management and responsibilities of social insurance agencies should be strengthened, encouraged and serve wholeheartedly the social insurance participants, in order to make social insurance implement justice, progress, social stability, contributing to sustainable economic development.

Second, the government should continue to expand the system of social insurance policies in the direction of integrating a variety of flexible regimes, supporting each other positively, ensuring a reasonable sharing between the government and people in one and many system, gradually reaching the standard of international social security system.

Third, the government had better determine the correlation between contribution and benefit to create fairness, a harmonious sharing, towards universal coverage, linked to salary, employment and social support policies in line with the process of socio-economic development in each period.

Fourth, the government should consolidate the system, improve the capacity of social insurance officials, improve management methods towards professionalism, modernization, apply advanced information technology, build complete data systems comprehensively and connect nationwide on social insurance. Promoting autonomy, attentive service for participants, strict management, science and social insurance activities, especially object management, revenue and expenditure management quickly, updated and effectively are also necessary.

#### **Objectives**

- Propagate and encourage the expansion of social insurance participants to follow the specific roadmap to 2050 as follows:

**Table 5: Expected social insurance participation rate compared to labor force period from 2021-2050**

	2021	2025	2030	2040	2050
Proportion of social insurance participants / total labor force in working age	35%	45%	55%	75%	85%
The rate of social retirement performance compared to retirement without pension (currently about 5 million people)	5%	15%	25%	55%	65%

*(Nguyen, 2018)*

- Ensuring the balance of revenue and expenditure of social insurance fund, especially pension and death fund.

According to the forecast of Vietnam's Social Insurance, if there are no policies and measures to increase and decrease expenditures, the retirement and death fund shall have the amount equal to the expenditure in 2023. From 2024, in addition to the revenues in the year, it must be additionally deducted from the balance of the fund and by 2037, the social insurance fund will be completely unbalanced, not enough to spend. Therefore, it is necessary to have effective and effective solutions to overcome the imbalance of social insurance revenues and expenditures in the next period.

### **Solutions to develop Vietnam Social Insurance**

Firstly, the government should expand the number of social insurance participants in parallel with improving the quality of social insurance service (Wagstaff, Nguyen, Dao, and Bales, 2016). In order to meet the target of social insurance for the entire population, it is necessary to have policies to encourage all people to participate in social insurance, in which focusing on propaganda to encourage and strengthening voluntary social insurance for rural workers are very important. At the same time, the government should improve the quality of social insurance regimes more and more appropriate, meeting the needs of social insurance beneficiaries.

Secondly, it is necessary to enhance the effectiveness of the government's management and social insurance management. This is reflected in the solutions: arranging the government's management apparatus on social insurance to unify a clue; Job position analysis: description, requirements, standards for each job in the government's management apparatus on social insurance are complete, detailed and appropriate; Training and developing capacity of strategy, planning, supervision, inspection on the basis of applying information technology progress to make cadres and government's management activities on social insurance tight, updated, comprehensive and effective.

Thirdly, managing and using social insurance funds in a balanced and effective manner in each period and in the long term are important. In addition to the above-

mentioned sharing and enjoyment measures, it is necessary to formally regulate employment in the non-state service sector, in order to expand the coverage of compulsory insurance. We also should strictly regulate the conditions for enjoying social insurance once to limit the participants who have left the system early. There are preferential policies for social insurance investment in high-profit projects to enhance the development of social insurance funds. At the same time, it strictly regulates and enforces sanctions against organizations, businesses that are shy, dodge, debt, or fail to pay insurance according to law, to ensure balance between revenues and expenditures. Social insurance, especially pension and death fund, is guaranteed to be stable and effective in the long term.

#### **4. Conclusion**

Social insurance is one of the policies to ensure social security that every country in the world applies. Vietnam's Social Insurance over the past 70 years has always been concerned, reformed and innovated. That has brought positive results and some limitations. With the orientation, objectives and specific solutions mentioned above, social insurance policies will be increasingly improved, meet the goal of ensuring fairness, progress and protection of all members of society, contributing to the socio-economic development of our country more and more quickly, firmly and sustainably.

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# CONSERVE VALUE OF HAN NOM CULTURAL IN THE DEVELOPMENT OF CULTURAL TOURISM IN VIET NAM NOW

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## **Abstract**

*Open economy creates favorable conditions for tourism development. In the context of globalization, foreign tourists and local people aim to understand the unique culture of each region. Traditional culture is focused on tourism by travel companies. Combined with enjoying the beautiful scenery of the homeland, looking back to the ethnic origin, spiritual cultural tourism has been the current development trend. In the historical and cultural relics containing many Han - Nôm cultures are diverse, valuable and valuable. Both national history and local cultural traditions contained in ideological symbols with bold humanity. In recent years, the development of regional tourism, local tourism has attracted a large number of domestic and international visitors. Through traditional cultural festivals, visitors cross over to understand the people, national history and fine cultural traditions of Vietnamese people. The trend of cultural tourism development makes us more and more appreciate and preserve Han Nom cultural values. Spending thousands of years of feudal northern domination, our country existed an invaluable stock of Han Nom heritage. Challenging the time and the impact of the weather, the Han Nôm culture and culture system preserves the good traditional cultural values of the nation. Therefore, each locality needs to diversify and develop tourism programs to preserve and promote these Han Nom cultural values.*

**Keywords:** *cultural tourism, Han Nom culture*

## **1. Introduction: Han, Nom characters in the history of Vietnamese national culture.**

Chinese characters are one of only four ancient scripts that exist in the world (ancient Sumerian characters, ancient Egyptian letters, ancient Indian letters). Chinese character is a type of square block symbolized, including the elements of form, sound and meaning. Due to historical circumstances and the geographical location of adjacent mountains and rivers, Vietnam and China have had contact with cultural exchanges. The result of the process of contacting the language and culture exchanges has created the Sino-Vietnamese word class in the Vietnamese vocabulary repository. In our country's history, Chinese characters are considered official dialects used in all activities. In the 12th century, our country did not have a system of private writing, so Chinese characters were orthodox

texts, widely used nationwide. On the basis of taking Chinese characters, our father created Nôm to express a sense of cultural independence. The word Nôm 喃 comes from the need for expression in ethnic languages. Since its appearance, Nôm characters has been used in many areas from practice to literature. Over the ages, Nôm has been modified, changed or changed from the point of view of the user or according to the development of Vietnamese phonetic history. Although there are certain deficiencies, Nom is always a recording tool of the Vietnamese people, expressing the spirit and will of national independence, helping our people to fight against all political enslavement. as well as culture. It exists and grows constantly with the development of the country's literature, leaving us many valuable works. Based on the data, around the 12th century, Nom was used to engrave epitaphs, contracts, and records, recording the names of people and places in administrative documents and beliefs. Although there are certain deficiencies, Nom is always a recording tool of the Vietnamese people, expressing the spirit and will of national independence, helping our people to fight against all political enslavement. as well as culture. It exists and grows constantly with the development of the country's literature, leaving us many valuable works. Based on the data, around the 12th century, Nom was used to engrave epitaphs, contracts, and records, recording the names of people and places in administrative documents and beliefs.

Associated with Chinese characters, Nom is Han - Nom culture, Han - Nom script is used in all fields of history, culture and society. The development of Chinese characters and Nôm has left many legacies into Han Nom literature, which enriched the national cultural treasure. In some tourist destinations across the country of Vietnam: pagodas, temples, shrines, pagodas, temples, temples, tombs, churches, communal houses, guild halls, stopovers, village gates, and tourist resorts. calendar... tourists can see the sign, the name of the monument, the sentence on the gate, the horizontal picture, the calligraphy written in Chinese characters, Nom characters. Presenting beautifully, the deep meaning contained in each letter makes visitors more interested in exploring. A good first impression created a spiritual and cultural tour with more meaning and poetry.

## **2. Method**

- Methods of language - cultural - historical analysis: using historical and cultural corpus to analyze the value of the Han Nom literature system in Vietnamese national cultural treasures

- Methods of analysis – statistics: based on the number of turns of tourists visiting cultural and historical sites in recent years to see the development of the type of historical - cultural tourism

- Comparative comparison method: comparing the training program of tourism geography and tourism culture to comment on the program of training cultural and tourist human resources

### **3. Results**

The trend of historical cultural tourism has increased rapidly in recent years, especially on traditional festivals in the local regions. In order to exploit the cultural advantages to develop tourism in the current trend, we need to study the development and preservation of traditional cultural and historical values. In which, Han Nom culture and cultural system plays an important role in preserving these traditional values.

Over the past years, tourists to Vietnam choose cultural tourism, visit the historical monument increased quickly. Therefore, the type of historical, cultural, belief and spiritual tourism is considered a special type of tourism with its own development strategies. Typical Festival Hoang Phuc Pagoda - Le Thuy - Quang Binh. According to statistics of Le Thuy District Culture and Sports Center, Quang Binh Province, in 2016: 90 thousand visitors, 2017: 120 thousand times, 2018: 140 thousand times, the first quarter of 2019: 52 thousand times. Cultural tourism is understood as "a form of national cultural identity with the participation of the community to preserve and promote traditional cultural values". The uniqueness of traditional festivals, historical evidence, Han Nom heritage makes Vietnamese cultural tourism unique. Historical relics, temples, temples and shrines are located along the length of the country in many different localities. In order to preserve and promote the traditional values of historical monuments, each locality is aware of the important role of the Han Nom literature department. The cultural system and Han Nom script act as a means of conveying messages and bridges from the past to the present.

Typically Hue cultural tourism activities. Visitors to Hue and Hue historical and cultural relics are easy to come across Han Nom literature system carved in many forms. More than 100 temples in Hue keep antiquities, scriptures, verses, hoành phi, and Đại Tự in Chinese characters. Truc Lam Pagoda keeps the famous Kinh Kinh embroidered 7000 Chinese characters with the title of King Quang Trung. Hoang Phuc pagoda - Le Thuy district - Quang Binh province keeps more than 20 pairs of sentences with the Chinese character Han... Han Nom culture system in localities exists in many forms, including: sentences for Han Nom, diaphragm, place names, Han Nom calligraphy, epitaphs, Vietnamese folk paintings ...

### **4. Discussion and Conclusion**

*4.1. Development of tourism activities is associated with the preservation of Han Nom culture in the locality*

Han Nom heritage contributed create ancient, elegant, solemn and serene beauty in each place. Not only that, the soft sketches like flying dragon phoenix dance every calligraphy to make visitors admire admiringly. Han Nom script is associated with Confucian ideology and Buddhism. Therefore, Han Nom is also a symbol of the teachings of Buddhism, Confucianism and traditional cultural traditions of each region. History of land clearing, administrative sites, cultural festivals from ancient times to present is partly expressed through the system of Han Nom scripts. Stop in front of a spiritual cultural tourist destination in Vietnam, visitors encounter sentences describing the landscape, history or meaning of the place where they arrived. The solemn nuance of Han Nom writing directs visitors to return to the origin of the nation, a little nostalgic and reminiscent of the magnificent years passed. We always look forward to the future but don't forget the past to see the development path of the country. Because, along with the time, natural phenomena and the destruction of history, many restored places change. The names of historical monuments and clusters, spiritual and cultural relics, traditional village festival names are always concise and mostly, originating from Chinese characters and contain historical stories. Explaining to understand on the language system helps visitors better understand the tourist destination.

No	Sites			Note
	Chinese characters	Sino-Vietnamese phonetic transcription	Meaning	
1	鎮國寺	Tran Quoc Pagoda	The original temple was called "Opening the country" (opening water) after the name was changed to Tran Quoc (the country was peaceful, holding the country)	The pagoda is located on the floating island in the east of West Lake - Hanoi, ranked by the state as a National Cultural and Historical Site in 1962
2	天姥寺	Thiên Mụ Pagoda	the temple worshiped the sacred old woman of heaven and earth	The pagoda was built in 1601, on Thien Mu mountain, a landscape of Hue Hue city
3	棲旭橋	The Huc bridge	the bridge parked in the morning light	Ngoc Son Temple - Ho Guom – Ha Noi

No	Sites			Note
	Chinese characters	Sino-Vietnamese phonetic transcription	Meaning	
4	弘福寺	Hoǎng Phúc Pagoda	Blessed are good for all people	Le Thuy - Quang Binh
5	傘圓祠	Tan Vien temple	Saint Tan Vien Temple - Son Tinh	Ha Noi

The places visitors visit often have poetic natural scenery, clear and airy atmosphere, adding a bit of nostalgia to make the space bold. Experience the sightseeing tours of temples, pagodas, shrines, etc. in a peaceful and peaceful atmosphere that relieves people's hearts after the stresses of life. Stepping into these cultural attractions, tourists are somewhat more aware of the Buddha Dharma, the philosophy of human life and appreciate what nature bestows on people. These cultural and historical values are expressed in horizontal images, the sentences of the past exist with time.

臨水登山一路漸入佳景

尋源訪古此中無限風光

Follow the water and the mountain, a road that leads us into a beautiful scene

Ask the source, in this place extremely beautiful scenery

(Opposition sentences in Tam Quan - Ngoc Son Temple)

Those who have been to Hanoi, once visited Ngoc Son temple are impressed by the charming water scenery, people harmonize nature and keep the capital busy. This verse is like an extensive introduction to the unique landscape of this sacred temple. Coming to the Temple of Literature in Hanoi, we live in the Confucian atmosphere of Confucianism.

道若路然得其門而入

聖即天也不可階而升

(Morality like the way! Find the door and go in

Saints like heaven! No stairs climb)

In addition to the sentence, this historical and cultural relic also contains horizontal and non-monumental images. These monograms are written in painted words with yellow cards, big letters engraved on cleverly carved backgrounds. Called horizontal because the word is written horizontally, the word means big. The literary

language of wonton in temples demonstrates Buddhist teachings. Deep meaning and human values. Besides, the local cultural and spiritual festivals at the beginning of the spring attracted the number of tourists to attend. Historical and spiritual cultural sites in Vietnam have preserved many traditional cultural and historical values. In particular, the cultural department and Han Nom literature play a very important role. Being aware of that importance, Han Nom system should be preserved and developed. Han Nom heritage is an invaluable document repository for tourism activities. In the strategy of Vietnam's tourism development in the coming years, cultural and historical tourism is determined by the Party and State of Vietnam. Therefore, the management, protection, exploitation and embellishment of historical monuments should be given due attention. If not, many relics of cultural historical value will be degraded, gradually disappearing. We should consider and proceed to build "cultural tourism villages" and diversify regional cultural tourism products and types of tourism: community tourism, source tourism, spiritual tourism, archeological, historical and religious tourism ...

#### ***4.2. Train tourism human resources to understand Han Nom knowledge***

In tourism activities, the tour guide team plays an important role. The strategy of developing tourism human resources must be directed to the quantity, quality and structure of human resources. The more professional the tour guide team is, the more tourism industry will develop. Towards the development of the type of historical tourism, spiritual cultural tourism, colleges and universities for tourism professional training, it is necessary to build a scientific training program and be suitable with practice. The Han Nom class can integrate teaching and training as a module. With this object, Han Nom module will provide basic and necessary knowledge about Han Nom for tourism. The Han Nom Curriculum for tourism by Pham Van Khoai is the reference for this training program. After completing the Han Nom program for tourism, students have a basic knowledge of the Chinese scriptures (structure, form and expression), providing knowledge of Nôm theory (concept, characteristics, roles and creative causes). Students can write Chinese characters and Nôm characters in accordance with the rules of the pros and cons, using Chinese-Vietnamese dictionary, to look up and interpret some Chinese characters and Hán Việt words often encounter places and historical and cultural relics. Students can access a number of Han Nom texts to create the ability to read and interpret simple Hán Nôm texts (sentences for sentences, rectangles, great ones ...) using knowledge of Chinese characters and letters. Nom tourism activities. Since then, tourism culture students are aware of the importance of learning Chinese and Nom scripts, and have a spirit of marketing in

acquiring knowledge, and have pride in the efforts of our father and creators. consciously preserving and preserving national cultural values.

In addition to learning English, Chinese, French ..., the training program should pay attention to the training of Nôm script for tourism students. The understanding of local historical, linguistic and cultural knowledge will create confidence in their own introduction and explanation. Depending on the practicality of the work, the tour guide can self-study and further train to improve the knowledge and professional level. The tour explores the historical relics for tourists mainly through historical artifacts and the guide's introduction. Attractive explanations, specifically leave a deep impression on visitors. Therefore, improving the quality of human resources for tourism activities, especially the tour guide team, is an important factor contributing to the sustainable development of cultural and historical tourism in the future.

In the trend of integration and development, training human resources in the cultural and tourism sector is closely linked to social realities. The team working in tourism must equip general knowledge, multidisciplinary knowledge with specialized skills, preserve and spread national cultural values to all visitors. Especially for the cultural tourism field, looking back to the ethnic origin, the equipping of cultural knowledge, language, history, professional ethics, national consciousness ... are the luggage missing. In particular, Han Nom knowledge has an important role, a means to arouse the traditional value of a nation with a history of more than thousand years of national construction.

#### ***4.3. Education - the way to preserve Han Nom culture along the time.***

In our country, Confucianism exists for two thousand years. In the mind of the Vietnamese, Confucius is always a symbol of the eternal teacher. He conceived: "a kindless teacher", meaning that teaching and learning do not discriminate. Although studying the Chinese characters of the ancient Vietnamese was partly forced, it was partly due to the need to absorb Han culture. So our country has many scholars and scholars of Chinese proficient in Chinese characters. Therefore, through the process of studying the Holy Scriptures, our country is more or less influenced by Confucianism, especially the ideological education of Confucius. With a tradition of learning, Vietnamese people borrow Chinese characters as a material to create Nôm. That is to show our father's independence and national spirit. Learning is constantly creative, learning more, studying forever, studying sea is endless.

Learning of Vietnamese people is linked to real needs. We determine education is to shape personality and foster talent. Educational institutions always uphold the spirit of "First school, post-study". In the mind of the Vietnamese people, the teacher is a boatman who diligently carries many generations of students to the edge of knowledge. "Most self-monks and half-masters" (A word is also a teacher, another word is also a teacher), or "If you want to come, you will be asked to pray for a son or a son." make it ". The teacher is always respected and promoted by society. Not only teachers in schools, there are teachers who quietly teach hieroglyphs in folklore. The current situation is very few people know the Hán Nôm font. Therefore, it is necessary to preserve and teach this special word in many forms.

In addition to a number of Han Nom lecturers in colleges and universities, there is a contingent of teachers in "old and rare" age, monks and nuns at pagodas who teach people who love Han and Nom characters. The form of opening Han Nom class for free at the temples and communal houses on weekends is maintained in Vietnamese villages for many years. Each class attracts about 10-20 students. However, young knowledge classes are very few, only students with new retirement age study. The previous generation had fathers who were from the Confucian class, so they had studied and knew the concept of this type of word. Retired, they have time to learn, write calligraphy, chant literature as an elegant pastime. The issue needs to inspire and foster the interest in learning Chinese and Nom scripts for the young generation of Vietnam to preserve the traditional Han Nom cultural values. Objectively speaking, Chinese characters and Nom scripts are written according to pen rules, difficult to remember, difficult to understand, so the reception is not simple. The method of learning how to memorize hieroglyphs, distinguishing meaning with Chinese characters is what every learner should pay attention to when learning Han Nom. Learn according to the way of old people - "ancient people learn" and flexibly apply the education motto of Confucius - "try to review old lessons to learn new lessons".

There are many suggestions according to the introduction of Han and Nom characters to teach in high schools. In the opinion of the Associate Professor. Dr. Doan Le Giang in his essay "The Interim for the Han Chinese School debate" . Although Vietnamese people are no longer using Chinese characters, they use Han Vietnamese words to 60-70%. Sino-Vietnamese word is a unique product of the Viet Han language exchange and contact process. Phenomenon of misuse, misunderstandings from Han Vietnamese words are very popular. One of the reasons is that Vietnamese people use Han Viet by habit and do not distinguish the

phenomenon of Chinese homophones. Those barriers are partly removed when we have the basic knowledge of Chinese characters - the kind of ideological pictograms.

Hán and Nôm are ancient texts used by our father in many fields during a long period of national history. This is also the material of the writing of many literary, historical and cultural works ... creating a rich cultural heritage warehouse in Han Nom. Many humanities and social science knowledge are preserved through Chinese characters and the recording of Nom script. Therefore, studying Chinese characters and Nom scripts plays an important role in understanding, preserving and enhancing the sense of respect and love for the cultural values of the nation.

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# DISCOVERING ADVANCED EDUCATION PROGRAMME STUDENTS' PREFERENCES FOR CLASSROOM ACTIVITIES IN READING CLASS AT NATIONAL ECONOMICS UNIVERSITY

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## **Abstract**

*Four fundamental language skills interact with each other. Developing reading skills will also develop listening, speaking, and writing skills. Reading comprehension, using what is understood on new subjects and learning new words during reading can influence listening comprehension as well as oral and written self-expression. Increasing love for reading in students can only be possible by determining the interests and needs of those students and guiding the students towards those needs and interests.*

*Moved with the conviction that learners and learners' preferences are of crucial importance in the development of learner autonomy, I asked approximately 300 students of Advanced Education Programme at National Economics University, to state their views as to how they prefer learning Reading skills. The data obtained reveals significant results suggesting the preferred activities in the Reading classroom. Hopefully it should be helpful for teachers who are wondering about how learning activities should be arranged and implemented in the Reading skill classes.*

**Keywords:** *class activities, reading skills, reading classes, students' preferences.*

## **1. Introduction**

Nowadays, English is an international language and as been widely used in many countries in the world. In Vietnam, English is also considered the most important foreign language and taught as a compulsory subject in most schools throughout the country. It has also become an important need of the Vietnamese as a means of communication. As a result, there have been a lot of changes in English teaching in order to meet the need, which also cause a lot of challenges for teachers of English.

Reading is one of the most important skills in learning a second language. The success of language learner is largely influenced by his/ her reading practice. "Reading is useful for language acquisition...the more they read, the better they get.

Reading also has a positive effect on students' vocabulary knowledge, on their spelling and their writing" (Harmer, 2007, p.99). Therefore, teacher must develop reading habit in students in order to help them enhance target language efficiency. This can be done by motivating students to read, especially by giving them reason to read. Neyman (2002), states that instead of waiting until later grade, extensive reading should be provided as early as possible so that they can use the facility that children have up to certain age. As a matter of fact, learners must feel the need of reading only then they can read on their own. In short, reading stands as bedrock for learners' success in learning a second language, therefore it is language teachers' responsibility to cultivate reading culture in students.

### *Reading Types*

Developing reading comprehension levels of individuals has brought development of various strategies, methods, and techniques that could be used before, during, and after reading. Topuzkanamış (2009: 30) explained reading strategies under three topics:

Strategies before reading: These strategies are related with determining reading purpose, analysing general structure of text, remembering preliminary information about text, trying to guess the topic from headers and images in text, and deciding which points to focus.

Strategies during reading: Reader will evaluate the text according to pre-determined purposes at before reading stage, controls comprehension level, and tries to correct mistakes or deficiencies if the reader is unable to understand.

Strategies after reading: Reader audits whether reading occurred according to reading purposes, if there are things are missed in text, and how accurate were guesses about text.

### *Prior Studies on Preference for Activities*

Research regarding activities has explored preferences of communicative or traditional activities as well as students' and teachers' perceptions of usefulness, preference, or even importance of activities in the learning process. For instance, Falout, Murphey, Elwood, and Hood (2008) conducted research with 440 Japanese university students exploring preference of communicative and traditional activities. Results indicated that learners preferred communicative activities instead of traditional grammar-centered activities. Sullivan (2016) discovered that learners not only liked but also wanted opportunities to communicate and create relationships with their classmates and their English teachers. Kang, Son, and Lee (2006) investigated the perceptions and preferences for English language teaching among EFL pre-

service teachers. Concerning the use of certain teaching and learning activities in the classroom, respondents reflected on their teaching style by selecting student-to-student conversation, playing language games, and pronunciation drills as the most preferred ones. In contrast, they perceived traditional activities such as translation exercises and grammar exercises as the least preferred ones.

Peacock (1998) examined teachers' and learners' perceptions of the usefulness of different activities and suggested that perceived usefulness was a considerable predictor of course satisfaction and student motivation. He found that students preferred traditional learning activities to communicative activities. On the one hand, results indicated that students rated grammar exercises, pronunciation, and error correction more useful than teachers did. On the other hand, teachers believed that pair and group work plus communicative tasks were more useful. Peacock suggested that this mismatch might have a negative consequence not only on the learners' progress, but also on their satisfaction with the class and their confidence in their teachers. Similarly, Rao (2002) conducted research on the perception of communicative language teaching (CLT) and communicative activities for Chinese university students. These students reported that CLT activities were difficult to perform. Liu and Littlewood (1997) claim that the teaching of EFL in most Asian countries is dominated by a teacher centered, book-centered, grammar-translation method, and an emphasis on rote memory. In some social contexts, teachers' and students' roles are so strict that it is not considered that students should take part in deciding what processes or methods teachers should follow in the classroom. Harshbarger, Ross, Tafoya, and Via (1986) argued that Japanese and Korean students are quiet, shy, and reserved in language classrooms and this might be an aspect in students' perception for activities. Learners' preference and interests vary from culture to culture and context to context (Dörnyei & Ushioda, 2011) and preference and perception of activities varies as well.

Prior studies have reported mismatches in learners' and teachers' perceptions and preferences. Both teachers and learners see activities differently. It can be difficult to please students' preferences for activities; however, teachers' expertise and knowledge about their classes can help in choosing activities that can create an environment where most learners feel motivated to participate and learn.

Having been teaching Reading skills for almost ten years, I have perceived that reading is more than just picking up words, phrases, and sentences written in the text; it requires students to obtain a certain vocabulary, background knowledge, and reading skills and strategies. I have always faced some problems: ***1. Are they interested in the reading activities I designed for them? 2. What reading activities else would they like to take part in?***

Therefore, a survey on **Advanced Education Programme Students' Preferences for Classroom Activities in Reading Class at National Economics University** was carried out to answer my above questions. Hopefully my research would be a good help for teachers of English to design activities in their reading classes.

### **Description of the course**

Advanced Education Programme Students at National Economics University have to study reading skills in 3 terms. The course book is Reading for Business.

- Term 1: pre-intermediate level, study in 15 weeks, 2 periods/week.
- Term 2: intermediate level, study in 15 weeks, 3 periods/week.
- Term 3: intermediate level, study in 15 weeks, 4 periods/week.

I did my survey at the last week of the 3rd semester in a hope that my students would give me the most certain answers to the questions in the survey.

### **Description of the subjects:**

I did my survey on approximately 300 Advanced Education Programme Students at National Economics University who were in the 3<sup>rd</sup> semester. The subjects were evenly distributed on 10 AEP classes.

## **2. Method**

**Method of the survey:** The data for this study were collected through 3 questionnaires focused on three stages of reading which are: pre-reading, while – reading, post-reading. The survey items in each questionnaire reflects the activities frequently used in my reading classroom.

### **The questions asked in the questionnaire**

*Which activities do you like in the pre -reading stage?*

<i>Activities</i>	<b>3 agree</b>	<b>2 neutral</b>	<b>1 disagree</b>
Using pre-reading questions			
Pre-teaching new vocabulary in the texts			
Explaining the instructions of the texts			
Giving a brief introduction of the text			
Making students ask questions about the text			
Using games to introduce the topic of the text			
Making students predict the content of the text			
Using visual aids to introduce the topic of the text			
Making students brainstorm words, ideas related to the topic of the text			

*Others:*

*Which activities do you like in the while -reading stage?*

<i>Activities</i>	<b>3 agree</b>	<b>2 neutral</b>	<b>1 disagree</b>
Reading and looking for new words and terms			
Discussing the topic with partners			
Predicting the main information based on the context			
Having a quick look at the exercises			

*Others:*

*Which activities do you like in the post -reading stage?*

<i>Activities</i>	<b>3 agree</b>	<b>2 neutral</b>	<b>1 disagree</b>
Summarizing the text			
Translating it into Vietnamese			
Learning by heart new words, terms and structures in the text			
Discussing about the text			

*Others:*

### **Data collection procedure**

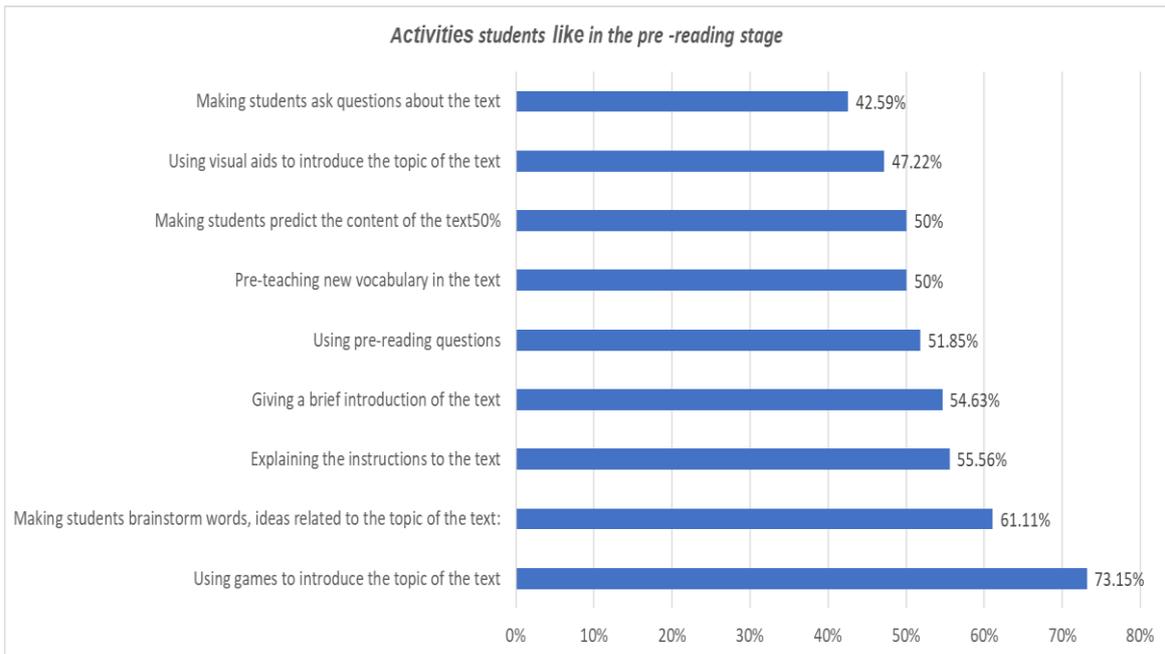
After the collection of the questionnaires, the data on which activities liked by students were compiled and calculated.

### **3. Results**

#### **Activities students like in the pre -reading stage**

The followings are the activities ordered from the most-liked to the least – liked by my students

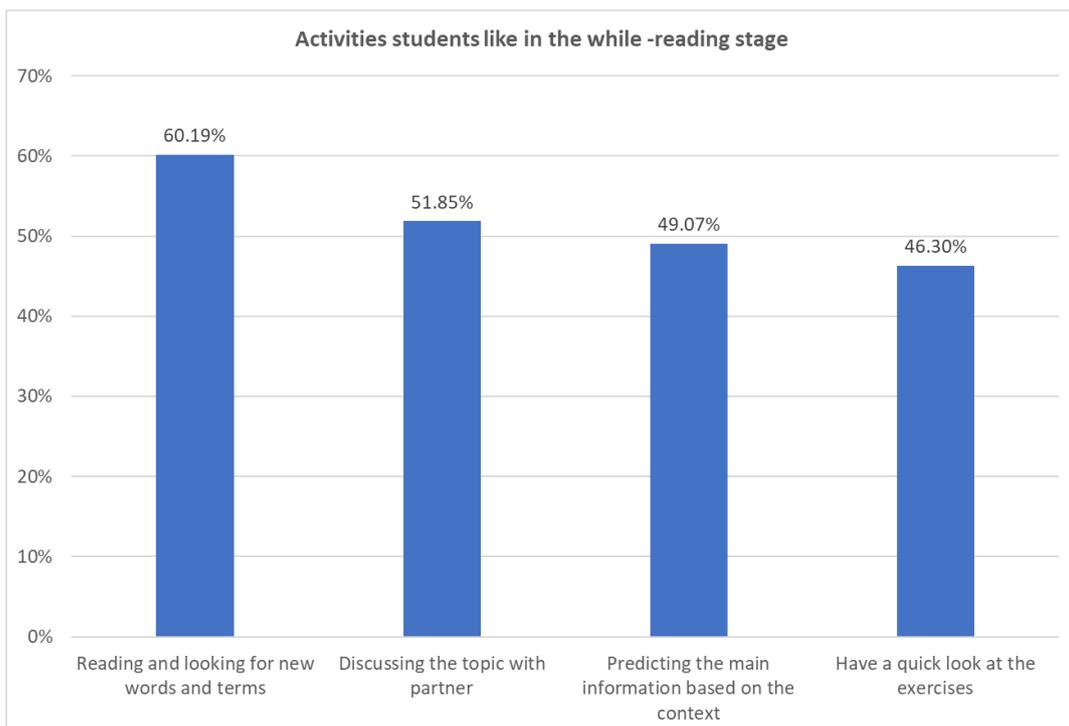
1. Using games to introduce the topic of the text: 73,15%
2. Making students brainstorm words, ideas related to the topic of the text: 61,11%
3. Explaining the instructions to the text: 55,56%
4. Giving a brief introduction of the text: 54,63%
5. Using pre-reading questions: 51,85%
6. Pre-teaching new vocabulary in the text: 50%
6. Making students predict the content of the text: 50%
7. Using visual aids to introduce the topic of the text: 47,22%
8. Making students ask questions about the text: 42,59%



### **Activities students like in the while -reading stage**

Similarly, my students also expressed their different interest and priority in the activities in my reading class as follows.

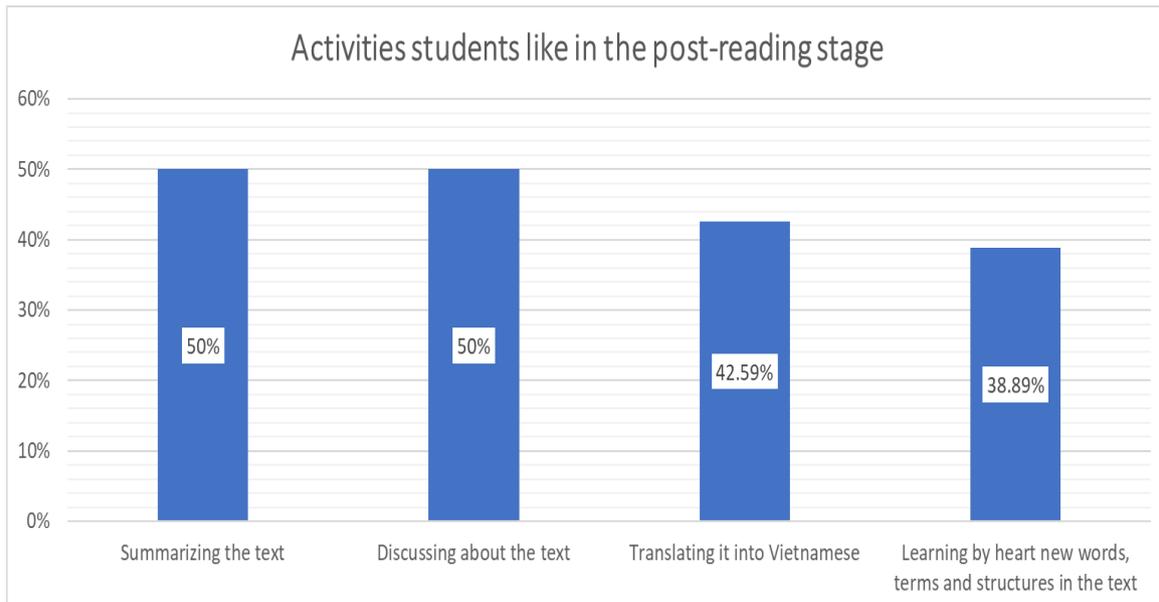
1. Reading and looking for new words and terms: 60,19%
2. Discussing the topic with partners: 51,85%
3. Predicting the main information based on the context: 49,07%
4. Have a quick look at the exercises: 46,30%



### Activities students like in the post-reading stage

In the last questionnaire, my students did not show much interest and concern to the activities that are used in the class.

1. Summarizing the text: 50%
2. Discussing about the text: 50%
2. Translating it into Vietnamese: 42,59%
3. Learning by heart new words, terms and structures in the text: 38,89%



### 4. Discussions

The findings obtained from this research provide some significant value, suggesting that:

- Contrary to my prediction about the reckless of pre-reading activities before this study was carried out, my students showed a big interest in the tasks before reading. Most of them preferred the fun and vivid activities like word games to introduce the topics. However, this is also a difficult work for the teachers because the contents of the reading texts are all about business. The teachers have to design the word game in the business circumstances.

- They also showed a need for being prepared for the language and the content in the reading text. Over 60% of students wanted to brainstorm words, ideas related to the topic of the text with the teacher. It was not difficult to understand why my students like this activity because there are business terms and concepts in the reading text that can cause trouble for students when they do the exercises later on in the class. That can also explain why more than half of them need the teacher's help by instructions, brief introduction of the text, guiding questions and pre-teaching vocabulary.

- Less than half of my students preferred using visual aids, which is a big surprise for me. They may prefer teacher speaking English or communicating with them.

- Many of them do not like to be asked questions about the content of reading text before the teacher actually presents what the text is about.

- Most of them concerned about how much vocabulary and knowledge can be absorbed in while reading stage (more than 60%) individually or team work (51,85%). Therefore, teachers should pay equal attention to individual and team work tasks.

- They also showed their dislike to post reading activities used in my reading classrooms. It may indicate the poor in the exercise types and tasks designed for them.

Effective language teaching and learning can only be achieved when teachers are aware of their learners' needs, capabilities, potentials, and preferences in meeting these needs. In this study, I have only dealt with the preferences. The results obtained here call for a step forward towards a teacher- student cooperation in designing syllabuses, and activities for students.

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**A BETTER APPROACH TO ECONOMIC DEVELOPMENT FOR  
INDIGENOUS MEDICINE IN MYANMAR: THE LEAVES OF  
*TADEHAGI TRIQUETRUM* (L). H. OHASHI (LAUK-THAY)**

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**Abstract**

*There is large scale international trade in medicinal plants, used both for herbal medicine and for the manufacture of pharmaceutical drugs. There is also growing interest in obtaining samples of plant material, or traditional knowledge about plant uses, to explore for new commercial medical products. Medicinal plants, *Tadehagi triquetrum* (L.) H. Ohashi, are abundant in Myanmar. The role of traditional medicine has played an important part in Myanmar's history. Although the use of modern medicine has dramatically increased, it is not easily accessible for much of population due to prohibitively high costs and limited availability, especially in rural areas. Even when it is readily available, many people are reluctant to use it because of cultural differences. Traditional medicine has been used for generations and is more affordable and easily obtainable –even in rural areas- therefore it continues to be widely used and plays a significant role in health care in Myanmar. Now, Fame Pharmaceuticals has made many efforts to produce a potent herbal medicine with the extracts of herbal plants. This research focused on Myanmar Indigenous Medicine of the leaves of *T. triquetrum* for commercial use in low cost for local people and some bioactivity studies.*

**Keywords:** *commercial use, *Tadehagi triquetrum* (L.) H. Ohashi, traditional medicine*

**1. Introduction**

The importance of medicinal plants to the economy of low-income countries remains critical and strategic because medicines are key to maintaining a health population that drives and sustain the economy. For such low-income countries to

attain any appreciable level of self-reliance regarding availability of safe and effective pharmaceuticals use for the management of endemic disease conditions, there must be policy directional change from the present. This change must be considered a priority because of the importance of self-reliance in the current and perhaps future economic and political intrigues by developed nations in the areas of pharmaceuticals. For these to be realized, developing countries must first identify their priorities and also realize the economic importance of medicinal plants that abound within their countries. This will at the long run encourage investors in the area of production of pharmaceuticals to invest their resources. While this will boost the economic status of such low-income countries, it will also improve the healthcare delivery system by making available essential pharmaceuticals at affordable prices to the majority of the population. The place of plant-based pharmaceuticals in global economy and also as component of healthcare delivery system is critical and this makes research on medicinal plants crucial.

Medicinal plants play an important role in the treatment of diseases and health disorders for thousands of years and still important in traditional medicine system around the world (San Thandar & Ohm Mar Tun. 2015). *Tadehagi triquetrum* is a species of flowering plant in the family, Fabaceae. It belongs to the sub family Faboideae (Efloraofindia, para 1). It is widespread in all South Asian, East Asian, and Southeast Asian countries (India Biodiversity Portal, para 1). Medicinal uses attributed to *T. triquetrum* ranged from treating urinary problems, stomach ache, and diarrhoea to applications as general restorative and tonic. *T. triquetrum* has a potent repellent effect, and a moderate larvicidal effect on *Chrysomya megacephala* fly larvae. This species is used extensively in the traditional preparation of fermented products. In Laos it is widely used in the preparation of fermented fish by placing it on top of the fish in the mouth of the earthenware fermentation jar (De Boer et al., 2010). In Traditional Chinese Medicin *D. Triquetrum* is considered to have the ability to remove stagnancy and destroy parasites. It is also being promoted for use in treatment to lung diseases. (Anmin, 2003; Kimura, 1996). In Myanmar, it is reported in the traditional production of fermented fish as an effective additive in producing fly larvae-free nga-pi (Lwin & Tu, 1968). Traditional medicine practice in Myanmar covers a continuum: the bulk of micro-practitioners operate at different points of the informal economy, while a smaller number of larger businesses operate within the formal economy; in some instances entrepreneurs operate in both. Scientists from developing countries need to put more interest and efforts than the present interest in research on medicinal plants, instead of doing so for immediate personal gratification as appears the case currently in many developing countries.

### **Botanical Aspects of *Tadehagi triquetrum* (L.) H. Ohashi**

Scientific Name -*Tadehagi triquetrum* (L.) H. Ohashi

Synonym -*Desmodium triquetrum*(L.) DC

Family -Fabaceae

Myanmar Name -Lauk-thay

Plant part used -Leaves



**Figure 1. *Tadehagi triquetrum* (L.) H. Ohashi leaves**

According to WHO, it is for this reason and many others that the traditional medicine (TM) program of the WHO is based on the reality that:

- i. Majority of the world population depends on TM for primary health care.
- ii. The manpower represented by practitioners of TM is a potentially important resource for the delivery of health care.
- iii. Medicinal plants are of great importance to the health of individuals and communities.

To underscore the growing economic importance of plant-based pharmaceuticals, it was shown that developed countries dominate their import and export either as raw materials or finished products. The aim of this study is investigation of phytochemical constituents, biological activities on the locally grown *T. triquetrum* and current situation of Myanmar Traditional Medicine by upgrading the sector of traditional medicine in its economic development.

## **2. Methods**

Health economic studies provide information to decision makers for efficient use of available resources for maximizing health benefits. Economic evaluation is one part of health economics, and it is a tool for comparing costs and consequences of different interventions. Health technology assessment is a technique for economic evaluation that is well adapted by developed countries. The traditional classification of economic evaluation includes cost-minimization, cost effectiveness analysis, cost-

utility analysis and cost-benefit analysis. Systematic studying and investigation of uses *T. triquetrum* in local market that leads to socio-economic development for local peoples' health and well being. By saving in medical expense, local people can live life long and they can do their work peacefully.

### **Collection and Preparation of *T. triquetrum* Sample**

The leaves of *T. triquetrum* were collected from Patheingyi University Campus, Patheingyi Township, Ayeyarwady Region in Myanmar, during January to February 2017. The collected leaf samples were identified as *T. triquetrum* (Lauk-thay) at Department of Botany, Patheingyi University. A total of 5 Kg of *T. triquetrum* fresh leaves samples were collected and cleaned with water. For dry material, the leaves of *T. triquetrum* were left to dry for a week away from direct sunlight. They were then air dried at room temperature. The dried material was ground into powder using grinding machine. The powdered leaves material obtained was stored in clean air tight container. 50 g of dried powdered sample was extracted with 150 mL of PE (60-80 °C) for 6 h by using soxhlet extractor. The filtrate was concentrated by removal of the solvent under reduced pressure to give pet-ether crude extract. Preparation of ethyl acetate extract, 95% ethanol and watery extracts were also prepared by similar manner mentioned in above procedure. Each extract was dried at normal pressure on a water bath and stored under refrigerator for screening some bioactivities.

### **Qualitative Screening of the Phytochemicals**

In order to classify the types of organic constituents present in leaves samples, preliminary phytochemical tests on samples were carried out by the series of test tube tests.

### **Bioactivities**

#### **Determination of acute toxicity of the leaves of *T. triquetrum* (Lauk-thay)**

To determine the consequence of the plant and to determine the nature and degree of toxicity produced by these extracts and to find out the medium lethal doses (LD<sub>50</sub>) of the extracts, acute toxicity test was done. Usually the acute lethality of a compound is determined on the basis of deaths occurring in 24 h but the survivors should be observed for at least seven days in order to detect delayed effects. In this study, acute toxicity effect of ethanol extract of *T. triquetrum* (Lauk-thay) leaves (two doses) were determined on albino mice at Laboratory Animal Services Division, Department of Medical Research (DMR), Yangon. Acute toxicity of different doses of ethanol extracts of *T. triquetrum* leaves was evaluated by the methods of OECD Guidelines for the Testing of Chemicals 423 (OECD, 1998; OECD 2000). After administration of extract, each group of animals was observed first 6 h continuously for mortality and behavior changes. Then the animals each was checked in 24 h for fourteen days (Table 1).

## **Screening of antitumor behaviors of crude extracts by potato crown gall test or potato disc assay method**

The antitumor activity screening of different crude extracts such as pet-ether, ethyl acetate, 95% ethanol, and watery extracts of leaves of *T. triquetrum* (Lauk-thay) was carried out against *Agrobacterium tumefaciens* by Potato Crown Gall test or Potato Disc Assay method at the Pharmaceutical Research Department, Ministry of Industry, Yangon, Myanmar (Moh Moh Aye, 2009).

### **Local Uses as Indigenous Medicine in Myanmar**

• **Root:** The liquid from stewing the root with a bit of pepper can cure blood in the urine.

• **Leaf:** Eating leaves can cure dysentery, bloated stomach, stomachache in children due to worms, and feeling of fullness and indigestion.

• Taken as a tea, the leaves can cure urinary and skin disorders.

• The leaves of the plant and the leaves of the dawai-hmaing (*Combretum indicum*) can be lightly boiled in water to cure urinary disorders, dysentery, bleeding hemorrhoids, and hemorrhaging during menstruation.

• The dried leaves of the plant and the dried leaves of hpalan-taung-mwei (*Cheilocostus speciosus*) can be mixed in equal amounts, made into a powder, dissolved in coconut oil, and kept in the sun; the clear top oil can then be used as ear drops to cure ear infections with pus and earaches; if used as an ointment, the oil can cure scabies, impetigo, erysipelas, open sores and seborrhoeic dermatitis of the scalp.

• If the leaves are mixed with dried flowers of saga-sein (*Cananga odorata*), steeped in sesame oil and the oil used as hair oil, it will cure headaches, fever, dandruff, itching of the scalp, and head lice.

• **Plant:** Used to kill worms.

Agricultural Corporation (1980), Perry (1980), Forest Department (1999) source: The medicinal plants of Myanmar 26/02/19 (Tadehagi triquetrum, para 7)

### **Commercial Uses of *T. triquetrum* in Myanmar**

Due to the high cost in demand of medical expense today, role of indigenous medicine is one of crucial sectors. Bacterial infections of respiratory tract are very common diseases in all ages of population worldwide. WHO has performed many strategies in the treatment of this disease. In Myanmar, bacterial infection of respiratory tract is one of the National Health Problems. Scientists have reported the effectiveness of herbal medicine in combating against bacterial respiratory infections. The medicines are effective as Western medicines, least side effects and inexpensive, besides they have less chance of emerging into resistant strains. Now, Fame

Pharmaceuticals has made many efforts to produce a potent herbal medicine with the extracts and powder from medicinal plants such as *Acorus calamus*, *Alpinia galangal*, *Azadirachta indica*, *Tadehagi triquetrum*, *Emblica officinalis* and *Ginseng* (Fame Pharmaceuticals, 2010). Now, this effort leads to socio-economic development for people lived in Myanmar.

### 3. Results and Discussion

Traditional medicine continues to be widely practiced by the majority of population, partly as a supplement and partly as an alternative to modern medicine. By the preliminary photochemical investigation of the leaf extract of *T. triquetrum*, the presence of alkaloids, carbohydrates, flavonoids, glycosides, phenolic compounds, reducing sugar, saponins, steroids, and tannins were observed and  $\alpha$ -amino acids, starchs, cyanogenic glycosides, and terpenoids were absent. Acute toxicity screening of 95% EtOH extract of *T. triquetrum* (Lauk-thay) leaves, was done with the dosage of 2000 mg/kg and 5000 mg/kg body weight in each group of albino mice. The condition of mice groups were recorded after fourteen days administration (Table 1). The results show that no lethality of the mice was observed up to fourteen days administration. Each group of animals were also observed still alive and did not show any visible symptoms of toxicity like restlessness, respiratory disorders, convulsion, aggressive activities, coma and death.

**Table 1. Acute Toxic Effect of Ethanol Extract of *T. triquetrum* (Lauk-thay) Leaves on Albino Mice Model after Two Weeks Administration**

No	Group	Extract Administration	Dosage (mg/kg)	No. of death	% of death after 14 days
1	Group A	95 % EtOH	2000	Nil	0
2	Group B	95 % EtOH	5000	Nil	0
3	Group C	No administration	Nil	Nil	0

The antitumor behaviours screening of different crude extracts (PE, EtOAC, EtOH and watery extracts) of the leaves of Lauk-thay were carried out against *Agrobacterium tumefaciens* by Potato Crown Gall test or Potato Disc Assay method. Among the tested crude extracts of the leaves of Lauk- thay, only pet ether crude extracts exhibited antitumor activity against *A. tumefaciens*.

Traditional knowledge of indigenous medicine is handed down through ancestors, and was developed according to personal experiences and traditional

beliefs on the action of medicinal plants. Fame Pharmaceuticals (Fame) continues to use modern technology in its research and development programs to innovate quality organic medicines under the guidelines laid out by the Declaration that treat many common disorders. Partnership and collaborations are also used to facilitate the development of new medicine, and Fame works with scientists and researchers from the University of Yangon, Yangon Technological University and Department of Medical Research of Ministry of Health. It has also cooperation with Laboratories with cutting-edge technology in Germany, Switzerland and the United States for the testing and quality control processes. Therefore, it was observed that the success of any health system depends on the ready availability and use of suitable drugs on a sustainable basis. Medicinal plants have always played a prominent role in healthcare and plant-based medicines are used in all cultures.

### **Manufacture of Traditional Medicines in Myanmar**

Herbal concoctions as home remedies are prepared by hundreds of families, based on knowledge passed on from generation to generation. On a mass scale traditional medicines are manufactured by both the public and private sector. The public sector units come under the purview of the Department of Traditional Medicine which ensures the good manufacturing standards are followed. The private sector units export a large amount of their production. FAME is the largest and only well known manufacturer in the private sector. Some of FAME pharmaceutical products are as follow.



### **4. Conclusion**

From this study, it is obvious that there is growing economic value of medicinal plants that the developing countries need to harness in order to improve their economic and health care delivery systems. The “pharmerging” nations appear

to understand this economic dynamics and are living up to the challenges. In particular, developing countries from Asian region need to put in more effort in order to face these health and economic challenges especially in the face of resurgence or emergence of resistant strains of pathogenic micro-organisms and cancers that have become serious threat to our collective survival. The present study on the leaves of *T. triquetrum* provides the following information. The leaves of *T. triquetrum* possess various chemical components such as alkaloids, carbohydrates, flavonoids, glycosides, phenolic compounds, reducing sugars, saponins, steroids, and tannins. The constituents (alkaloids and steroids) present in the sample may contribute to its bioactivities such as antimicrobial, antioxidant, anticancer, antitumor, antipyretic, and antiulcer properties. According to the screening of acute toxicity activity of the 95% EtOH extract of leaves of *T. triquetrum*, the results showed that no lethality of the mice was observed up to fourteen days after administration. From the acute toxicity test on leaves of *T. triquetrum*, leaves extracts were found to be free from acute toxic. Moreover, due to its antitumor activity, non polar extract of leaves of *T. triquetrum* may be used to prevent the diseases related to tumor and cancer. The result obtained from this study indicated that tested crude extracts of *T. triquetrum* may play an important role in medicinal properties and may be used safely. On the other hand, Fame Pharmaceutical Product from *T. triquetrum* has been manufactured under controls established by the integrated management system that meets the requirements of ISO 9001: 2015, OHSAS 18001: 2007 which have been independently certified by BVQI and Good Manufacturing Practice (GMP) laid down by the Ministry of Health of Republic of the Union of Myanmar. Commercialization FAME's products has had a positive social impact on the populations ability to access medicine in Myanmar because while the imported Western medicine is prohibitively expensive, people have access to affordable alternatives of traditional medicine to meet their health care needs. With the utilization of traditional medicine growing every day, safe, high quality products are essential. Through commercializing its products, Fame has been able to meet a very important social issue in Myanmar and provide for the health and well being of many people, who would otherwise have gone without any form of medical care.

## **5. Acknowledgements**

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# IMPROVING THE EFFICIENCY OF BANKING CAPITAL SOCIAL POLICY REGARDING DIFFICULTIES THROUGH STRENGTHENING TRAINING FOR MARKET ECONOMY AND REVOLUTION 4.0

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## **Abstract**

*Vietnam Bank for Social Policies (VBSP) mobilizes capital and lends capital to poor households and policy households through officials of 4 organizations: Farmer's Association, Women's Union, Former Association warriors and Youth Union in villages and rural areas throughout the country. Therefore, in order to improve the efficiency of loan capital of the Vietnam Bank for Social Policies, it is necessary to strengthen training on market economy knowledge and revolution 4.0 for this staff. Through secondary data sources and reports of Vietnam Bank for Social Policies, the article focuses on analyzing and evaluating that situation and proposing proposals according to the set objectives.*

**Keywords:** *knowledge training, market economy, cadres of ethnic minorities, minorities and disadvantaged areas*

## **1. Introduction**

Undoubtedly, the current technological revolution, especially the revolution of technology 4.0, the strong ongoing trend of Fintech brings many opportunities and challenges in business activities. In general, in the development of services of banks around the globe as well as in Vietnam, of the Bank for Social Policies in disadvantaged provinces, such as: Northwest, Central Highlands, Dong Me Khmer, ... collected attracting and meeting the needs of customers' increasing products and services, especially payment services, in order to maximize the bank's profits, promote regional socio-economic development. hard. However, it is also posing great challenges by Fintech companies in competition to attract customers, expanding market share, especially in online loan transactions, financial management, and portfolio management, ... taking place in the country and in difficult regions in the context of the 4.0 revolution that is taking place today.

Theory and practice in the world as well as in Vietnam have shown that ethnic minorities and people living in disadvantaged areas are those with the highest demand

for social policy loans. The highest rate of social policy credit debt balance compared to commercial bank credit. To improve living conditions, improve incomes for ethnic minorities and people in disadvantaged areas, implement socio-economic development goals, contribute to solving security issues. To protect and protect the environment, it is necessary to continue to expand and raise the efficiency of social policy credit capital in the same difficulties, mountainous, deep-lying, commune, border and island regions.

In practice, economies with many similarities like Vietnam today, provided that the investment capital of the budget is very difficult, ODA capital for developing and developing countries is increasing. narrow and tight, capital of non-governmental microfinance institutions is very small, investment capital of enterprises as well as foreign investment capital comes to ethnic minorities and disadvantaged areas If not, then the credit capital of Vietnam Bank for Social Policies (VBSP) is of prime importance.

However, in order to continue expanding the ability to absorb capital, expand lending, and effectively use the Bank of Social Policy's capital for people in disadvantaged areas, especially ethnic minorities, it is necessary to dig create market economy knowledge for them: how to choose and access financial services of VBSP? where? What are the specific benefits? What production or service, where to sell or sell, to whom or who uses it? How to use capital, at what cost, how long is the capital rotation? How to accumulate small amounts of money? where to send How to use transactions on mobile devices dealing with banks? How to use the Internet? ... These are the very practical contents of knowledge that are necessary for people in disadvantaged areas, especially ethnic minority cadres to be equipped.

Access to financial services of VBSP needs to be understood as to know, familiarize, effectively use, and regularly use modern financial services in the current 4.0 revolution of officials and ethnic minorities. number, of people in difficult areas in life, in economic activities effectively.

In Vietnam, ethnic minorities often live in difficult socio-economic regions, such as the northern mountainous region. The Central Highlands, many central provinces, remote and remote areas of the Mekong Delta, ... are often particularly difficult areas.

Vietnam Bank for Social Policies is a type of business in a market economy that is also grasping the trend of the era, grasping achievements, advances of the industrial revolution 4.0 to improve efficiency. his activities. VBSP is a financial institution of the Government, non-profit activities, providing state credit for socio-economic development, solving social security and poverty reduction. The contingent of political-social-professional organizations in the whole country in general and disadvantaged areas in particular, are officials of savings groups, which should be

considered as human resources to act as agents for VBSP in credit activities, should improve the quality of this human resource.

## **2. Research Methods**

Research articles on practice, using qualitative research methods. The author is based on practical observations, exchange of experiences and direct interviews with officials of the Bank for Social Policy at localities, the Head of the Savings and Loan Group (TTK & VV), some experts. The author is also based on secondary data, based on the report of the Vietnam Bank for Social Policies. On that basis, the author synthesizes, analyzes, compares, evaluates and draws out comments.

## **3. Results**

### ***3.1. The objective need to equip with knowledge of market economy, revolution 4.0 for people in disadvantaged areas, ethnic minority officials derive from practical requirements***

*One is the viewpoint of "giving more fishing rods to fishing" in the implementation of state credit policy and microfinance.*

In terms of awareness and viewpoint, it is necessary to promote access to financial services of VBSP, on that basis, contribute to improving goods production capacity, production and business capacity, capital utilization capacity of people. Ethnic minorities, remote areas, communes and regions are particularly difficult, so the issue of cadres must be top priority. The question now as well as in the years to come is to pay special attention to solutions to expand and improve the efficiency of VBSP's financial services for the above-mentioned subjects. In order to expand credit capital, it is associated with ensuring the absorption of capital, ensuring the effective use of capital, ensuring people get used to sending and withdrawing money at VBSP, depositing savings. idle money, small amounts of money into savings and loan groups (TTK & VV).

Accordingly, it is necessary to continue to improve market economy knowledge, the meaning of depositing small amounts of money, retailing, saving money, depositing idle money into TTK&VV entrusted by VBSP; understand the regulations on borrowing and using capital for people in general, especially ethnic minority cadres and cadres in extremely difficult areas, raise the people's intellectual standards, promote activities agricultural promotion, transport development, development of crops and livestock with high productivity and quality assurance; innovate farming techniques, reduce production costs. In order for ethnic minorities, as well as ethnic minority officials and regions with special difficulties to improve their capacity to produce goods themselves, rather than just relying on state subsidies.

*Secondly, improving professional qualifications and challenging information on the Internet for staff is the school of savings groups borrowing capital from the Social Policy Bank, local officials.*

To transfer credit of VBSP to people to the northern mountainous areas and provinces in the Central, Central Highlands, remote and remote areas in the Southwest region, the Khmer region,... implemented through savings groups borrowing from socio-political organizations:

Women's Union, Farmers 'Association, Veterans' Association; Youth Union, ... in villages and Representatives of VBSP's Boards in localities, through clues of microfinance institutions. Currently there are tens of thousands of savings groups borrowing from the 4 organizations mentioned above, with most of the staff being ethnic minorities, the Khmer,... In order to lend to VBSP, saving groups. loan to confirm the list of member households, reference to monitor the use of loans, ... Therefore, the leaders of the team must be equipped with general market knowledge and knowledge of bank credit. private. *SBV (2018)*

Because the general practice in the period from 2009 to the end of December 2018, Social Policy Bank (VBSP) attracted nearly 7 million poor households and other frequently used policy beneficiaries. Financial services provided by this financial institution. By the end of 2018, the total policy credit capital reached 194,420 billion VND, an increase of 19,038 billion VND compared to 2017. Total outstanding loans of credit programs reached 187,792 billion VND, an increase of 16,003 billion VND (+ 9.3%) compared with 2017, with nearly 6.7 million poor households and policy beneficiaries are getting loans; in which, the credit debt outstanding under the Prime Minister's plan reached 165,141 billion VND, an increase of 12,938 billion VND, completing 100% of the plan. Particularly in 2018, the total lending volume of VBSP reached 62,078 billion VND with more than 2.1 million turns of poor households, near poor households and other policy beneficiaries getting loans. Social policy credit activities have contributed to more than 300 thousand households overcome poverty threshold; supporting capital for production and business, creating jobs for more than 245 thousand employees; help more than 6 thousand workers to work abroad for a definite time; help more than 51 thousand students with difficult circumstances to borrow money to study; build over 1.3 million clean water supply and sanitation facilities in rural areas; building nearly 30 thousand houses for poor households to stabilize their lives, more than 2.8 thousand houses of social housing according to Decree 100/2015 / ND-CP. Attached to the growth of outstanding loans, credit quality is increasingly raised. As of December 31, 2018, the ratio of overdue debt and frozen debt accounted for 0.78% of total outstanding loans, of which overdue debt was VND 736 billion, accounting for 0.39% of total outstanding loans. *VBSP (2018)*

Scale of loan outstanding Poor households in the Khmer, remote and deep-lying areas of VBSP also have a growth rate of over 11% / year, tens of thousands of households escape poverty, including the role of officials ethnic minorities. *Ethnic Committee (2018)*

In the process of bringing capital to the poor and social policy beneficiaries, to ensure the safety and efficiency of loan capital, VBSP has regularly cooperated closely with Party committees, local authorities and key organizations. trustee society - focussed to strengthen and improve the quality of policy credit in the area. In the contingent of executive committees, authorities and socio-political organizations at grassroots level, the majority of officials are ethnic minorities, Khmer people, .... *SBV (2018)*

VBSP has a wide network to reach district level, but people borrow money without having to come to the Bank's office to get a loan, but VBSP provides capital to the commune People's Committee headquarters to disburse, collect debt, collect interest. , witnessed and supervised by local authorities, socio-political organizations receiving fiduciary, Head of Savings and Borrowing Group. In addition, the VBSP also cooperates closely with these agencies and organizations in supervising and managing loans, guiding borrowers to use loans effectively ... Most of them are people. ethnic minorities, Khmer people, .... *Ethnic Committee (2018)*

*Thirdly, in order to effectively transfer capital and use capital sources, it is necessary to well implement agricultural and forestry extension, study market information and scientific and technological advances in the Internet.*

Officials working in agricultural and forestry extension activities in the Northern mountainous areas, Central Highlands, Khmer villages, etc. are mostly ethnic minorities. With the training to improve the level of agricultural and forestry extension, learn about experiences in high-tech agriculture, clean agriculture, apply scientific and technological advances to the production, processing and preservation of agricultural products,... create conditions for the use of donated capital sources and effective credit capital sources of farmers and local people. *Ethnic Committee (2018)*

***3.2. Proposing the content of training and retraining knowledge of the Industrial Revolution 4.0 in order to improve the accessibility of VBSP's services to people in disadvantaged areas, ethnic minority officials to improve the efficiency of using credit capital, contribute to sustainable development in the Northwest, Central Highlands, Khmer villages, ...***

*Firstly, training market knowledge in general and the ability to grasp the trend of industrial revolution 4.0*

People in disadvantaged areas, ethnic minorities in the Northwest, Central Highlands, and Khmer people.... need to vigorously transform market economic

thinking, industrial revolution trend 4.0. Does that mean what to produce, where to sell, to whom, to sell at what price, how much it costs, how it costs, how to access market information, how to apply scientific progress What is the technology? ... It means that production, livestock or what needs to be based on market demand, consumption capacity, and profit accounting. It also means that it is impossible to produce, move according to the resolution, to make massively without taking into account the ability to consume, the trend of using safe food, clean agricultural products, and applying use high technology.

That means getting used to the sense of saving, sending small coins to formal financial institutions, getting used to borrowing and repaying, and costing. It must also adhere to and respect the principle of appraising plans of the Bank for lending, including Social Policy Bank, banking transactions and seeking information on mobile devices, on the Internet.

*Secondly, training knowledge on agricultural, fishery and forestry extension*

This content should also be linked to the first content mentioned above, but it will go into intensive cultivation and application of advanced scientific and technical advances in production, animal husbandry, aquaculture as services, ... new varieties, new techniques, new cultivation tools, etc. are required to meet the requirements of the new situation, the trend of industrial revolution 4.0.

*Thirdly, firmly grasp the regulations on formal financial service activities, especially banking credit activities, microfinance activities.*

This content includes the methods of depositing money, the sense of saving small amounts of money deposited in authorized C&S of VBSP; bank loan application procedures; observance of credit principles: what to do, specific objectives; using capital for the right purpose and using capital effectively; There is a specific plan to use capital to ensure repayment of the loan in time both principal and interest as committed. Demanding people in disadvantaged areas, especially ethnic minority officials, have a basic knowledge of financial plans to recognize and guide people: how much capital, how much capital they have, calculating the possibility of profit loss including interest expense, ...

*Fourth, equip the necessary legal knowledge*

This content includes basic knowledge of market economy laws, such as land, housing, property, property ownership and use, distribution and mortgage, transfer, ... This knowledge also avoids people, officials being deceived, causing property disputes in the process of production, animal husbandry, service ...

*Fifth, training knowledge about sustainable development*

In addition to the 4 contents of the above-mentioned training for sustainable development, improving access to financial services of the Social Policy Bank, people in difficult areas, especially ethnic minority and deep-lying cadres and remote areas should be equipped with knowledge about forest protection, environmental protection, regulations and practices on prohibiting the use of chemicals and banned substances in livestock, cultivation, fisheries, processing and in doing services as well as doing business honestly, avoiding law violations.

#### **4. Discussion and Conclusion**

The Government should continue to invest in projects on transport infrastructure, health, schools, clean water and environmental sanitation, information technology infrastructure, internet,... in regional areas. Northern mountains, Central Highlands, Khom Me ethnic minority people, etc., through specific programs and projects on capital sources of the State budget, capital of microfinance institutions, international aid capital; capital of commercial banks; coordinating with the capital sources of the Ministry of Agriculture and Rural Development, the Committee for Ethnic Minorities, the Ministry of Health, the Ministry of Education and Training, ... Enterprises continue to have direct assistance on welfare. society for people in disadvantaged regions.

Vietnam Bank for Social Policies needs to regularly organize training courses for savings group leaders; There should be programs to introduce credit activities, credit policies, use of mobile devices, exploit information on the Internet at the People's Committees of communes.

The above training and retraining contents should be compiled in detail, specific and updated to be included in training programs for commune officials and officials of mass organizations; local seminars and seminars.

For localities in the Northern mountainous region, Central Highlands and Khmer villages,... in practice, coordination among agricultural and forestry extension, technical assistance and technology transfer activities , information on consumption market of output products ... of State organizations, non-business units, enterprises and socio-political organizations with VBSP's policy credit activities in almost all localities in the northern mountainous region, the Central Highlands, the Khmer people and not yet properly concerned, has affected people's sense of saving and sending small amounts of money regularly, to effectively use borrowers' loans. Therefore, agricultural extension, technical assistance, new seed supply, improvement of farming and animal husbandry techniques,... should have specific contents on the basis of lessons learned in the past time and funding. used for ineffective training, poor and sketchy training content, ...

In the market economy in general and in industrial countries in particular, the Government still uses state credit tools in combination with the effective use of credit policies of commercial banks and VBSP's banks to implement the objectives and strategies for their socio-economic development. In Vietnam, right from the beginning of the renovation, the Party and the Government have established the Bank for the Poor, now the Social Policy Bank. Vietnam Social Policy Bank; some microfinance institutions are also licensed to operate; In addition, commercial banks are competing to expand credit in the Northern mountainous region, the Central Highlands, the Khmer people,.... So far, it has been confirmed that a large number of people, including ethnic minorities, have access to formal financial services; the successes and correct guidelines of the Party and Government in this field, especially the role of poverty reduction, sustainable development in the country in general, the Northwestern region, the Central Highlands, the Khmer people,.... in particular. However, it is necessary to continue to strengthen, develop and improve the operational efficiency of financial services of Vietnam Bank for Social Policies in the above-mentioned areas.

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# A STUDY ON SOCIAL CAPITAL AND JOB ISSUES OF GRADUATES IN A TRANSITIONAL ECONOMY OF VIETNAM

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## **Abstract**

*In this study, we argue that although social capital plays a critical role for graduates as a job-seeking channel, its role is differently presented in various kinds of job in a transition context of Vietnam's economy. This paper will analyze the ways in which social capital have impacts on the job of graduates through the whole process of job seeking. In doing so, we use a mixed methodology which includes (i) quantitative method with 549 observations; (ii) qualitative method with a sample of 13 respondents involved in 1-1.5-hour in-depth interviews. We conclude that the use of network in many different forms is still fruitful for job seekers.*

**Key words:** *Graduate employment; social capital; family bonds*

## **1. Introduction**

Lyda Judson Hanifan was the first author to use the concept of "social capital" to refer to friendship, mutual understanding in social life in 1916. In the book "Death and Life of Great American Cities" Jacobs said that social capital is not a property of land, personal property or cash, but real values in life that affect most people's daily lives like goodness, ideas, solidarity, empathy, social exchange in a group of people or families - the main social units of rural communities. After nearly half a century has passed, in 1960, the concept of social capital was mentioned by American writer and activist Jane Jacobs in his research from the perspective of "social capital is a complex system of human relationships built over time, with the function of supporting each other in the time it takes to ensure the safety of the streets and foster a sense of civic responsibility".

By the 1980s, the concept of social capital was introduced into Fukuyama's social science dictionary, but before that in the early 1970s, Bourdieu had used this concept in his studies. However, the concept of social capital only became an important scientific concept in Bourdieu's work of "Forms of Capital" in 1986. As he

wrote "Social capital is an attribute of individuals in the social context. Anyone can collect some social capital if the person tries and attends to it, and moreover anyone can use social capital to bring about economic benefits. But the ability to do that depends on social responsibilities, connections and social networks. Bourdieu also supports Hanifan's view that social capital is the entire resource (actual or potential) that comes from a network that has been known for a long time and has been partially institutionalized.

When studying social capital, it is impossible not to mention American sociologist James Coleman. In 1988, he had an article that attracted a lot of attention on social capital. Accordingly, Coleman analyzed the importance of "social capital in the formation of human capital". In the first post, it shows that the views of Coleman and Bourdieu are completely opposite. Coleman defines social capital as "social structural resources that individuals can use as an asset." He affirmed that social capital is the "derivative product" of other activities, through interpersonal relations. People establish and maintain such relationships in search of benefits.

In 1995, American politician Robert Putnam published a brief, novel and important discovery with which Putnam used the phrase "social capital" like Coleman and attached his social capital ideas to the issue of "civic ethics". Putnam cares about the close relationship between citizens. Putnam emphasizes social capital bringing mutual support, cooperation and trust. Not only did he provide views on social capital, he also proposed some indicators to measure social capital. By going further, Fukuyama asserted that human capital and social capital are mutually reinforcing. According to his perspective, "social capital is the standard, the value is shared to promote social cooperation. That is proved by real social relations", emphasized on the social norms.

In 1999, the World Bank, an international organization, was very active in studying a definition of social capital including social institutions: "Social capital relates to institutions and associations." relations, standards that shape the quality and quantity of social interactions in society. There is much evidence that social cohesion is very important for societies that can become economically prosperous and develop sustainably. Social capital is not only a total of institutions that make up a society - it is also a glue that binds them together".

#### *About empirical measurement of social capital*

In 1974, Granovetter introduced the work "Searching for a job: Researching relationships and careers". This is one of the first important works explaining how individuals seek jobs through social relationships. Following the birth and publication of the thesis in Granovetter, there have been more researches developed as Marsden's

research also explains that social capital is more useful for job seekers or employees. with jobs that require expertise and skills and especially jobs that require employers to invest in training. Further, Richard Rose (1998) uses a separate classification to determine the scope of orthodox and non-formal networks as well as their interactions. He draws conclusions through the marginal distribution of answers from many different questions.

According to the World Bank in 1999, two authors, Anirudh Krishna and Elizabeth Shrader, developed questionnaires covering all aspects of social capital. The questionnaire is divided into 4 levels: individual / household level, neighbor / community level, regional level and national level. Also, in an economic aspect, with "Endogenous growth model" Paul F. Whitley measured social capital in the form of explanatory variables. He found that economic variables always precede the measure of social capital. This assumes that Putnam thinks that social capital changes very slowly.

In one of his studies in 1999, Grootaert considered social capital as a productive element of households. He analyzed the relationship between social capital and prosperity - poverty of households in Indonesia. From there, find the cause of prosperity or poverty that is difficult to go from social capital to income. In 2004, the Australian Bureau of Statistics published the "Analytical Framework and Social Capital Measurement Indicators" document based on a number of evaluation criteria: trust, cooperation, social participation, mutual support, power relations, ...

In Vietnam, the direction of empirical research marks major contributions from sociologists. First to mention is the good work of Stephen. J Appold and Nguyen (2004) in research projects to identify the role of social capital in the operation of small businesses, economic transactions in the family. The author indicated that social capital plays an important role in helping leaders of enterprises borrow capital to start a business. Notably, the case studies of the author are placed in the correlation between the two countries Vietnam and South Korea to draw the difference in social capital on different cultural backgrounds as a basis for shaping network of social relations.

According to Le's (2008) research "Social capital, human capital and social networks through a number of studies of Vietnam" referring to different notions of social capital. The article uses the integrated model of social capital, human capital and social networks. On that basis, the author mentioned more results of a number of specific studies in terms of: social network of people, enterprise information network, migration network. In the same direction of empirical research, Thomese and Nguyen (2007) used the concept of social capital to study the phenomenon of accumulating agricultural land in the grave of the Northern Central's village through the study of "Relational relations with land consolidation and land use under the view of social

capital in a North Central's village ". More recently, in 2010, researcher Nguyen Tuan Anh had more results to study the role of social capital in rural areas of North Central Vietnam. With this research, the author has clarified the role of social capital in kinship relations.

In Banking Magazine, author Le Khac Tri assessed and assessed the existence of social capital and the role of this capital source in the situation of socio-economic development of Vietnam, especially in Banking industry through the article "Social capital to improve competitiveness and operational efficiency of the banking industry" in 2007. Knowing to write "About measuring social capital" by author Dinh Thi Thom (2009) also approaches measuring social capital through a number of case studies in the world. From that point out the points to note when using social capital measurement in the evaluation study.

Nguyen Thi Anh Tuyet (2012) with the study "Social capital in management and rural development in our country today" has emphasized the application of promoting the role of social capital in the management and social development. with the aim of ensuring stability and sustainable development in all aspects of life in rural areas. Research on measurement indicators, in 2015, Nguyen Le Hoang Thuy To Quyen and colleagues measured the social capital of migrant workers to Ho Chi Minh City using the PLS-SEM model.

## **2. The relationship between social capital and student employment**

The market mechanism is gradually replacing the centralized and bureaucratic mechanism in the field of employment. Currently, the labor market is no longer "waiting for people" but every individual must actively find jobs to earn income to ensure life. It means that passive people will easily become unemployed and unemployed.

In 1974, Granovetter announced the "Job search: Research on relationships and careers", which is one of the important works that first explains how individuals seek common jobs. through social relationships. He showed three main points in his research paper. First, the researcher thinks that many people find their jobs through social relations, not just through formal channels. Next, the social network allows job seekers to gather much better information about the availability of jobs as well as the specifics of the job. Finally, the author hypothesizes that weak links can yield more useful information than strong links. Do not stop at finding a job, social relations are also a bridge to help new graduates get a job suitable to their abilities, desires and bring better remuneration.

After Granovetter's views were made, there were many development studies as well as critical arguments, thereby contributing to the identification and interpretation of the influences and relationships between social capital and jobs of

students in particular and the labor market in general. Nan Lin, professor of the American Department of Sociology, has many studies and articles related to social capital and social networks associated with job search. Lin's view is quite similar to Granovetter. However, Lin emphasized that direct and indirect social relations are social resources that play an important role in enhancing the status of the subject and that becomes an individual source of capital that can be used during job search. For example, through our friends, we can find a job that suits ourselves. Lin's views are evidenced by many studies of different scholars in the world such as Wegener (1991), Barbieri (1996), Hsung and Sun (1986),... and in Vietnam, two authors Van Ngoc Lan and Tran Dan Tam (2005) also supported the argument. Through the analysis of the actual survey data, Franzen and Hangartner also point out that the work thanks to the support of friends, colleagues or relatives has a higher relevance to training expertise. Marsden also through his studies explains that social capital is more useful than graduates in particular and job seekers in general with skilled and skilled jobs.

The study of the relationship between social capital and employment in Vietnam is also concerned by some Vietnamese scholars like Trinh Duy Luan in the analysis of human resources, labor and employment in Vietnam, the shortage of social capital in the process of finding births of births. This topic is also concerned by other authors such as Nguyen Quy Thanh, Nguyen Anh Tuan, Hoang Ba Thinh, ... mentioned in the research works when referring to the role of social capital affecting the opportunity to find suitable jobs.

Researchers also point out that with the characteristics of Eastern culture, relationships with parents, relatives and relatives are one of the social sources that have important implications for life and opportunity. career of new graduates. In addition to blood relationships and media search ways, graduates can take advantage of the relationships from teachers, friends, and participants. organizations and clubs to find information and create opportunities to find jobs for themselves.

### ***Methodology***

In this study, the authors used mixed research methods including quantitative research and qualitative research. Quantitative research methods are used to find important factors affecting students' job search process. Qualitative research methods are used to further explore the underlying causes of the use of network relationships of graduates in the job search process. Specifically, this study uses multivariate regression (OLS) and probit functions. In addition, the authors used in-depth interviews for the cases selected from the survey questionnaire.

The sample size of the quantitative analysis of 549 observations was collected using a convenient sampling method. In-depth interviews were conducted for 5 typical cases selected from the answer section through the questionnaire. Interview

time lasts from 1.0 to 1.5 hours and details of the survey participants are kept confidential. Further, 5-point Likert scale is used in the questionnaire.

## ***Results and Discussion***

### **Correlation between sources of job information and job type**

		Public sector	Private sector (domestic)	Foreign-owned enterprises	Family enterprise	Others (start-up...)	Cramer's V (Sig.)	
Mass media	Used	10.2	31.6	25.7	20,4	12.1	0.233	(0.001)
	Non-used	20.3	11.5	10.7	35.6	19.2		
Social media	Used	15.0	25.5	13.6	15.7	30.2	0.211	(0.000)
	Non-used	11.2	20.7	50.2	38.6	13.2		
University lecturer	Used	35.3	20.6	14.5	1.3	28.3	0.185	(0.045)
	Non-used	18.0	29.8					
Family bonds	Used	37.2	20.1	10.5	30.1	12.1	0.399	(0.003)
	Non-used	19.2	43.1	29.4	16.0	23.3		
Job centers	Used	1.4	32.7	30.3	2.6	33.0	0.267	(0.000)
	Non-used	18.2	15.0	29.1	18.2	30.9		
Friends	Used	19.6	36.4	20.3	3.5	20.2	0.301	(0.000)
	Non-used	40.7	23.4	30.1	8.5	2.6		

- *Family background play an important role for those working in public sector*

Family relationships become a very important factor in finding jobs as well as the type of jobs of graduates, especially in the public sector. Among the sources of information and support for graduates, family background is the most important factor for respondents who are working in the public sector.

*“Although my parents work in the public sector in a middle-class position, they really want me to work in the public sector. The reason is that this area is more stable and I can take advantage of my parents' existing relationships. This is good for my future career development. On the other hand, the state sector is quite mysterious for many people because of the existence of unspoken laws. If a person does not understand this area in terms of how to access the source of information as well as the 'hard' requirements, it is easily removed from the recruitment process.”*

(Hung – public official, aged 30, Hanoi)

This result is similar to many other studies on the role of social capital (family bonds and family background) for the jobs of new graduates in Vietnam and China.

Family relationships will create employment opportunities by creating advantages in information, support or even the impact on the recruitment process in countries where reciprocity principles are still common (Wen 2006).

Similar to the role of the family, the relationship with the school (particularly with the teachers at the university) also affects the type of work and the intention of finding graduates. In this study, we found that students who have a strong relationship with university teachers, especially those with good academic results tend to choose jobs at the institutions. The department of education and the public sector is higher than the other group.

*“Teachers, especially university teachers, are the ones who inspire me to choose a job as a teacher. In the past, I didn't think I was suitable for this job because I thought it was very tough and very difficult. When I said my intention to become a teacher, my teachers said that I had the ability to do that because my academic results and scientific research were good. Teachers also share opportunities and challenges with the role as a teacher and provide the information and conditions needed to meet the demand of this profession.”*

(Thanh - teacher, aged 28, Hanoi)

- *Friendship-based network is critical to job seeking in private sector*

In contrast to the public sector, the process of finding employment in respondents in the private sector is heavily influenced by friendships. These relationships do not provide significant financial support but are a source of useful information about the hiring process and the nature of the job. Despite the explosion of information technology, the use of friendships in finding jobs and intentions of private sector workers.

*“Information technology helps to provide fairly complete information about the labor market but that information is common and accessible to everyone. My friends and I believe that the recruitment process as well as the nature of the work will not be fully displayed on the website of the business or on social networks. I asked the information of many friends, especially close friends to find out if the job was right for me. In addition, we were affected and in the group of friends when one of us found work that collected high expectations of the private sector.”*

(Hang – sales consultant, aged 31, Hanoi)

- *Media provides a good source of information and connection for job seeking of graduates.*

A high proportion of the survey participants use media, especially social networks, in finding employment opportunities. In this study, social networking

became an important factor for the private sector and the ‘start-up’ group. Using technology elements to connect in the job network becomes important for start-up groups because of the strong development of social networking (Facebook, Zalo ...) and websites.

*“The era of information technology has developed so strongly that the connection between people becomes easier and more convenient. Relationships through connections via Facebook or websites are also reliable and important. Of course the relationships that arise through social networks cannot replace other relationships but who take advantage of the power of information technology in building networks, that person will have an advantage because of many concerns more. Especially for startups and new business managers like me”*

(Phuc – entrepreneur, aged 35, Hanoi)

### ***Conclusion and Implication***

Different types of social capital have different roles for the professions. For public sector groups, family background becomes a very important factor because the family foundation creates advantages of available relationships and power to the public sector. Meanwhile, the relationship of friends, schools and social networks plays an important role in the private sector, the public sector and the start-up group respectively. Thus, in addition to the factors of professional knowledge, occupational skills, employment trends, relationships (social capital) also become an important factor affecting the type and intention of work. of workers.

Some policy implications of this study include:

- Information transparency and process of the recruitment process become an important factor to limit the "advantage" of people with strong family background - which affects the fairness of the recruitment process
- Promote connectivity and limit risks in using social networks as a tool to build network.

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# EDUCATIONAL PHILOSOPHY IN TRAINING TOURISM HUMAN RESOURCES IN VIETNAM

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## **Abstract**

*The essay comes from the thesis: Labor is the decisive factor in the success of all social processes. Labor resources must be respected and used effectively in the humanities; must be trained first. By method of analysis - synthesis; history - logics; combined with qualitative and quantitative research, the essay analyzes the actual situation of tourism human resources and the training process of tourism human resources. From that, the essay has pointed out the necessity and direction of building the educational philosophy in training human resources in tourism in Vietnam.*

**Key words:** *educational philosophy; human resources in tourism; tourism; training*

## **1. Introduction**

In fact, the tourism industry has made great contribution to the socio-economic development. However, the tourism industry in Vietnam has some limitations, not corresponding to the potential, strengths and social expectations. It's both lacked and weakened in tourism human resources. Tourism business is small; limited capital, human resources and management experience.

The main reason is: "The training and development of tourism human resources have not been properly considered" <sup>[1]</sup>. Therefore, training human resources should be paid attention. One key content is the development of educational philosophy. Starting from perfecting theories of educational philosophy; the role of educational philosophy in training tourism human resources; and based on the fact that determines the basis and direction of building the necessary educational philosophy.

## **2. Research objectives and methods**

### **2.1. Objectives of the study**

(1) Contribute to perfecting the theory of the role of educational philosophy in education in general and tourism human resource training in particular..

(2) To study the practical construction of educational philosophy in training human resources for tourism

(3) Introduce some corresponding solutions

### **2.2. Research Methods**

The article uses a combination of appropriate methods: analysis - synthesis; history - logics; combined with qualitative and quantitative research (to the extent necessary).

## **3. Research results**

### **3.1. The status of training tourism human resources in Vietnam**

From the potential and really interested in tourism, Vietnam has many training institutions for tourism human resources.

**Table 1. Training institutions of specialized in tourism (2016) <sup>[2]</sup>**

<b>No.</b>	<b>Nature of the training institutions</b>	<b>Quantity</b>	<b>Percentage %</b>
1	Total	156	100.00
2	Universities	48	30.77
3	Colleges	43	27.56
4	Trade schools	40	25.64
5	Companies	02	1.28
6	Centers	23	14.74

The institutions include public and non-public, domestic and foreign investment; full time and in service, short-term and long-term systems with: 4 levels of university, professional college, 6 levels of college and vocational trade school, 2 post-graduate levels including tourism and tourism economy. In fact, the training institutions have been trying to meet the requirements of the industry and the society but there are many limitations. Lack of professionalism, vocational guidance for target training identifications and needs, very high proportion of women (80%). The facilities, techniques, curriculums and materials in the training did not meet the training requirements (except for funded Luxembourg and funded EU projects). Learners lack practical access conditions, there is no opportunity to promote initiative and

creativity. Lack of qualified and specialized teachers. The qualification and ability to use foreign languages, information technology is limited. The training program is very academic, imbalance between theory and practice, there is no strategy for linking, cooperating with employers. Lack of objectivity in the examination, assessment and recognition of training qualifications. Therefore, the quality of tourism human resources is not high, not meet the requirements of professionalism of integration, competition; unevenly distributed in the regions and between the tourism industries. Most of the trained workers work in tourist resorts and large tourist centers. Highlight characteristics of training tourism human resources in Vietnam is spontaneous, subjective, inconsistent due to lack of appropriate EDUCATIONAL PHILOSOPHY. The status of tourism human resources as the following table:

**Table 2. Tourism human resources in Vietnam 2016**

No.	Criterion	Persons number	Percentage %
1	Total	2.250.000	100
2	Under Elementary SC	462.000	20
3	Elementary, trade school, college TC	1.503.000	66, 8
4	University and post graduate ĐH	7.200	3,2

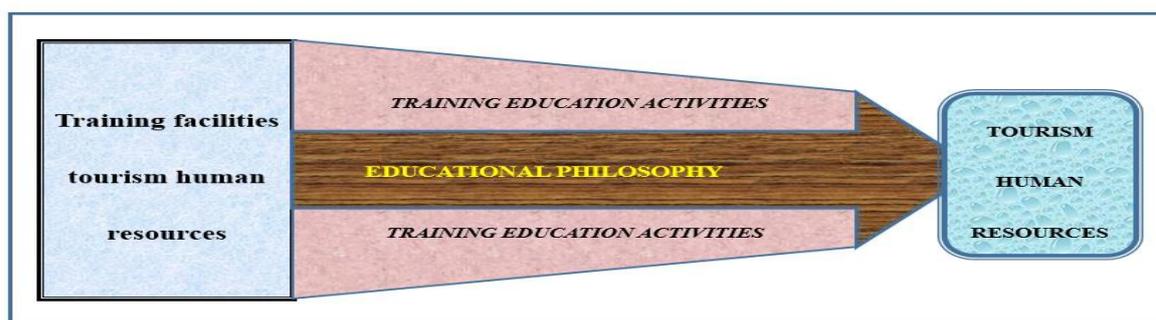
(Source: VITEA)

### ***3.2. Educational philosophy***

Actually on demand, building EDUCATIONAL PHILOSOPHY - the foundation of all training processes - solutions to improve the quality of training tourism human resources. Humans are always working towards the goal and drawing the right, most effective and most justified argument for the chain of behavior - making up the philosophy <sup>[3]</sup>. Nowadays, building the educational philosophy reflecting the right strategy of education development is the leading concern of the society, missionary designation; Educational orientation, in response to educational issues: What is it? for whom? How? Educational philosophy is the philosophy of education, the study of the general rules of education. At the same time “is the viewpoint, orientation and direction of education in line with the current economic situation, political regime, social life and cultural level of the time” <sup>[3]</sup>.

It is “a system of ideas and concepts that govern the whole operation of an educational structure. Actually, after all, the educational philosophy of a society depends on the social philosophy of that society” <sup>[4]</sup>. The philosophy of education is the era, suitable with the conditions of social progress. The educational philosophy is one of the socially normative corridors to direct education and training activities towards educational objectives.

**Chart 1. The role of education philosophy in training Tourism Human Resources**



*[Source: The authors construct]*

Educational and training establishments; educational philosophy; education and training activities; tourism human resources.

The educational philosophy is formed spontaneously or self-consciously from the whole national education system. Formulation and implementation the educational philosophy has become the task of educational forces and educational institutions around the world.

Finland educational philosophy: “Absolutely believe every child has his own ability” through the motto “Faith - Equality - Cooperation, uphold the motto of teaching to study, not to promote examination...”

Success in Japanese education is based on the following educational philosophy: “Human = morality”; upholding disciplined and self-reliant spirit and building the people who contribute to the country with the foundation of “steel discipline” and the sharing of responsibility with the surrounding.

American education has developed through educational philosophy: “self-reliance – independence” , creating a diversity of talents, and establishing economic and social prosperity. "Independence" attaches “respect” and “responsibility”, the school is autonomous - students have many options

According to Jacques Delors (1996), UNESCO mentions four cores: learn to know; learn to do; learn to survive; learn to live together. UNESCO recognizes, demonstrates and implements the philosophy of social relations between education and culture; civil rights; social cohesion; job; development; science.

The education of Vietnam has gone through many historical stages. Feudal stage: accepting the ancient Chinese education. The French domination stage: receiving the semi-feudal colonial education. But in it there are elements of the new education: propagation of national language, movement to open people’s knowledge, reviving national technology. When the country gained independence and implemented a people's democratic education with the motto “nation-science-mass”;

After 1954, Vietnam approached the model of Eastern European education, meeting the requirements of building the North and unifying the country. In the South before 1975<sup>[5]</sup> recognized three principles: humanistic, nationalistic and liberal. They are the foundation for the educational philosophy.

Vietnam affirms: humans has important status; It is not the means, the education must be expanded and received the world scientific and technical knowledge, the spirit of democracy, social development, cultural values of humanity to contribute to the modernization of the country and society. But in the period of innovation, education has shown expressions such as not catch up with the times, not meet the market requirements, reaching low in the region.

**Table 3. Education index of Vietnam in and some countries in the region**

HDI Rank	Country	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013
15	<u>Korea</u>	0.797	0.837	0.843	0.848	0.854	0.856	0.862	0.865	0.865	0.865
17	<u>Japan</u>	0.767	0.785	0.790	0.792	0.795	0.800	0.802	0.808	0.808	0.808
121	<u>Vietnam</u>	0.434	0.470	0.478	0.486	0.494	0.502	0.509	0.513	0.513	0.513
136	<u>Cambodia</u>	0.400	0.478	0.485	0.491	0.494	0.495	0.495	0.495	0.495	0.495
139	<u>Lao</u>	0.352		0.390	0.395	0.403	0.414	0.422	0.436	0.436	0.436

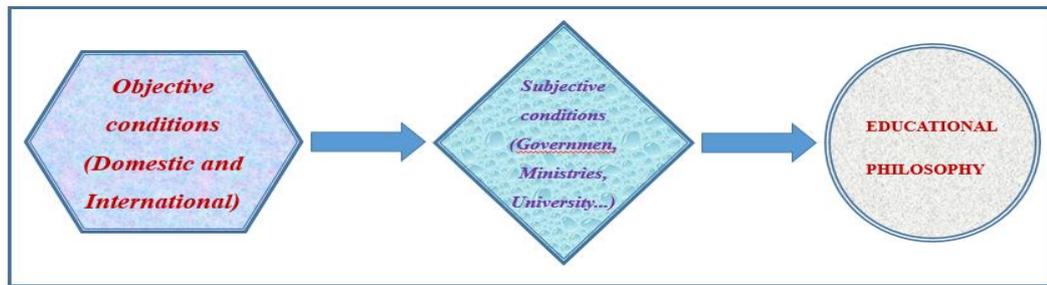
*[Source: UNDP]*

From that fact, it is necessary to build a new suitable educational philosophy, serving the Vietnamese educational system including education in tourism human resources. This philosophy allows learners to integrate into the world. In the process, attention should be paid to normative issues.

The interaction between the fundamental factors to form the educational philosophy.

From domestic objective conditions, international contexts, educational needs and trends through subjective factors of government, of ministries and ministry agencies, universities and institutions at the same level, together with other agencies that form the characteristics and content of the educational philosophy, means forming the educational philosophy.

**Chart 2. The interaction between the fundamental factors to form the educational philosophy**



*[Source: The authors construct]*

From there, the educational philosophy has the characteristics of “people-nation”; “Science – modern”; legal; ideology; trend and movement in education.

The basic principles of educational philosophy building

- Inheriting and promoting creativity of educational philosophy in the history of the nation.
- Towards educational goals.
- Feasibility, and verifiable.
- Linking social unification, trust and commitment to implementation.
- Democracy - humanities in education

Basic contents of the educational philosophy:

The educational goal: “To re-establish a different education in order to create free people, to dare and to know ourselves to find the truth, to live and work according to the truth we have chosen, to be responsible for that choice. The unity of society will be the unity of the self-reliant, self-reposable for ourselves and for society, full of self-control and creativity ...” [6]. The Law on Education of Vietnam is formulated with the contents on objectives of education and human development.

The motto of educational development in the renovation period is: standardization - modernization - democratization. Accordingly, Prof. Pham Minh Hac proposed an educational philosophy: “Educate self-values” [7]; Based on the knowledge of the Vietnamese people, the educational history of the country, the world trend, the requirements of the country for education, factors affecting the education of Vietnam.

According to Prof. - Dr. Vu Minh Giang [8], the Vietnamese educational philosophy is summarized in 5 words: who, respect, micro, important, public

### ***3.3. Building the educational philosophy in training tourism human resources***

Basis: Theory of educational philosophy; legal development education and tourism; the status of tourism industry; the status of training tourism human resources; world trend.

Direction of educational philosophy construction:

(i) To concretize on the cultural aspect of education and training establishments in compatibility with tourist establishments and the whole society

(ii) Educational philosophy guides building corporate culture, school culture with three elements: Vision, Mission and Core Values.

(iii) Educational philosophy guides the implementation of solution of tourism human resources in Vietnam to 2020, vision to the year of 2030

- Develop and implement national and local development planning of tourism human resources.

- Develop a network of training and retraining establishments for tourism to meet increasing demands on the population of t tourism human resources.

- Standardization building and implementation tourism human resources.

- Building, enforcing and implementing the school standard to improve the capacity of tourism training and fostering gradually integrating vocational standards in the region.

(iv) Training tourism human resources and tourism activities including deep cultural content, creating corporate culture.

(v) Developing an educational philosophy in dialectic and revolution: The educational philosophy must be maintained, controlled, improved and changed when necessary.

(vi) Some suggestions about habits, mindset needs to form in the training audience and tourism human resources: Nothing helps develop intelligence like traveling (Emile Zola); Let's see the world. That's better than any dream (Ray Bradbury); Life is a daring adventure or nothing (Helen Keller); There is a kind of magic that is going further then returning and completely changed (Kate Douglas Wiggin); Travel will kill prejudice, persistence, and conservatism (Mark Twain); Going further, closer to yourself (Andrew McCarthy); because travel teaches you tolerance (Benjamin Disraeli) [9]; All in to: love the human and love the earth.

#### **4. Conclusions and recommendations**

Improving the quality of tourism human resources training needs to develop and implement the educational philosophy with historical depth, approaching the trend of the times from practical needs, to integrate into the quintessence of the nation and the times; so that each of the subjects involved in tourism is imbued and expressed with the spirit of humanity and tourism culture.

Therefore, we have to:

(1) Promote the spirit of self-reliance, creative initiative of tourism human resources training institutions.

(2) Build school culture and progressive corporate culture; At the same time, the training program has been upgraded in terms of capacity approach and specific value promotion in order to shorten the distance between training and using the tourism human resources”;

(3) In training should guide learners to develop skills that are beneficial for lifelong learning; improve the passive attitude of the learner in training; to cultivate the rational labor of science, have a wide professional knowledge, high culture, attention to cultural behavior and foreign languages

(4) Improve standards for training quality evaluation of tourism human resources according to the educational philosophy.

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**PART 5: ENVIRONMENTAL ECONOMICS  
AND MANAGEMENT**



# A COMPARATIVE STUDY ON SOCIO-ECONOMIC AND ENVIRONMENTAL DEVELOPMENT OF MYANMAR AND VIETNAM

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## **Abstract**

*The objective of this paper is to compare and analyze human resources of Myanmar and Vietnam based on socio-economic development and environmental management. Myanmar and Vietnam are the late members of ASEAN. Vietnam joined ASEAN in 1995 and Myanmar in 1997. Both countries are the developing countries in the southeast Asia region. They have seen to have similar socio-economic situations. Both economics started market oriented policies in late 1980s. In addition, both countries have more or less the same factors such as background experiences of colonialism, location, natural resources, economic structure, export structure, culture and custom. Religious, etc. Therefore, more efforts are need to put on enhancing human resources development. If they take the right moves at the right time by improving the quality and capacity of human resources their people enjoy prosperity and pursuit of happiness in the coming days.*

**Key Words:** *ASEAN; Human resources, Socio-economic, Environmental, Urban- community*

## **Introduction**

Kingdom of Myanmar was terminated by the three successive occupations of the British in 1824, 1852 and 1885. However, Myanmar King's idea to modernize the country through industrialization led to failure by British invasion. The first British rule ended in August 1943 when the Japanese agreed to declare Myanmar's independence. But it was not a real freedom. Thus Myanmar's had to attempt military defect on Japan, and ask new British Rule for independence. On 4 January 1948 Myanmar regained her independence. After a parliamentary government was formed in 1948, Union (Pyi Daung Su) Government attempted to make Myanmar a welfare state. In the late 1988, the new military government took the state responsibilities and announced establishment of new modern developed country through market-oriented economic system.

Vietnam's independence ended in the mid-1800, a when the country was colonized by the French. The French maintained control of their colonies until World War II, when the Japanese war in the Pacific triggered the invasion of French Indochina in 1941. After liberalization movement against Japan, Viet Minh occupied Hanoi and proclaimed a provisional government which asserted independence on 2 September 1945 but severe war continued up to end of French administration in Indochina and separation of South and North. Since reunification of South and North in 1975, the economy of Vietnam has been plagued by enormous difficulties in production, imbalances in supply and demand, inefficiencies in distribution and circulation, soaring inflation rates, and rising debt problems. Vietnam is one of the few countries in modern history to experience a sharp economic deterioration in a postwar reconstruction period. Its peacetime economy is one of the poorest in the world and has shown a negative to very slow growth in total national output as well as in agricultural and industrial production. In a historic shift in 1986, the Communist Party of Vietnam implemented free-market reforms known as Doi Moi (renovation). With the authority of the state remaining unchallenged, private ownership of farms and companies, deregulation and foreign investment were encouraged. The economy of Vietnam has achieved rapid growth in agricultural and industrial production, construction and housing, exports and foreign investment. Vietnam achieved around 8% annual GDP growth from 1990 to 1997. Vietnam entered ASEAN in 1995 as a full-fledged member.

### **Aim and Objectives of the study**

Based on the idea of the important role of socio-economic and environmental development in developing economies, major objectives of this paper are:

- ❖ to study the profile of socio-economic and environmental development in Myanmar and Vietnam,
- ❖ to compare the status of Small and Medial Enterprises sector in the two countries, and
- ❖ to find out the major factors to develop Small and Medial Enterprises sector in Myanmar and Vietnam economy.

### **Methodology**

In compiling this paper two approaches were attempted namely study of socio-economic and environmental on the subject. Necessary data and information are compiled from such main sources as Central Statistical Organization (CSO), Ministry of Industry. Moreover, SME seminars, class lectures and various internet websites are also desirable to acquire relevant information.

## **Results**

The evidence on small firm performance in developing countries especially in terms of cross sectional studies in very sparse flexibility, enhanced by subcontracting and the exploitation of economies of scale, meant these enterprises were able to adapt and operate successfully in niche markets away from the direct competition of large competitors. According to the studies, whether firm size is in itself a determinant of enterprise performance might be determined by other factors such as natural resource, endowments, technology, policies and institutions. This seminar paper intends to describe not only the development of social life of urban communities but also the changes and important role of socio-economic to be prosperous as town.

## **Discussion**

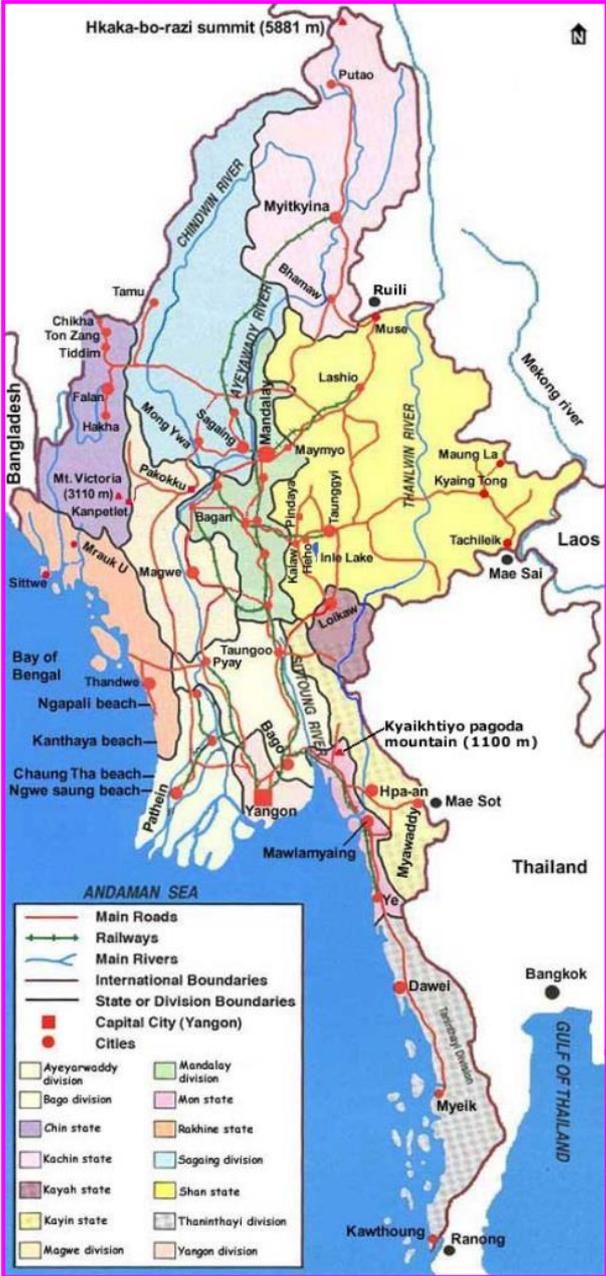
Numbers of establishment of SMEs dominate most of Myanmar's economic sectors, accounting for 90 percent of the industrial sector and 99 percent of the manufacturing sector. SME development has become especially important since Myanmar claimed industrial objective in its 30-year industrial development master plan with intention to modernize and reach the same levels of industrialization as advanced Asian nations in 2015. To catch up such objective, SMEs plays more important role than large enterprises which has very limited founding and employment opportunities. Growth of private-own registered small and medium industries within industrial zones is still much higher than that of large scale industries even though their percentage share gradually increased.

Between 2002 and 2006, total numbers of registered private industries from various industrial zones increased all the time. During this period, share contribution by large and medium industries increased from 6.0 percent to 8.0 percent and from 11.3 percent to 14.9 percent respectively. Small industries in term of absolute number increased from 31852 to 33455 but relative share decreased from 82.7 percent to 77.1 percent. With regard to job creation, small and medium industries from different industrial zones could absorb 80 percent of total labour employed although outputs and investments were less than 70 percent in 2006.

Along with first point of Myanmar's national economic objective about the development of agriculture as the base and all-round development of other sectors of the economy as well, industrial focus also pays much attention on food and beverages. Consequently, very large part of small and medium industries were established in food and beverages sub-sector.

Food and beverages sub-sector sharing as large as more than 80 percent was intensively produced within SMEs. About 60 percent of food and beverage industries were invested by SMEs. Not including miscellaneous items, establishment followed

to produce or process construction materials, clothing & apparel, and mineral & petroleum products. Electrical goods production is lowest emphasis with 0.1 percent.

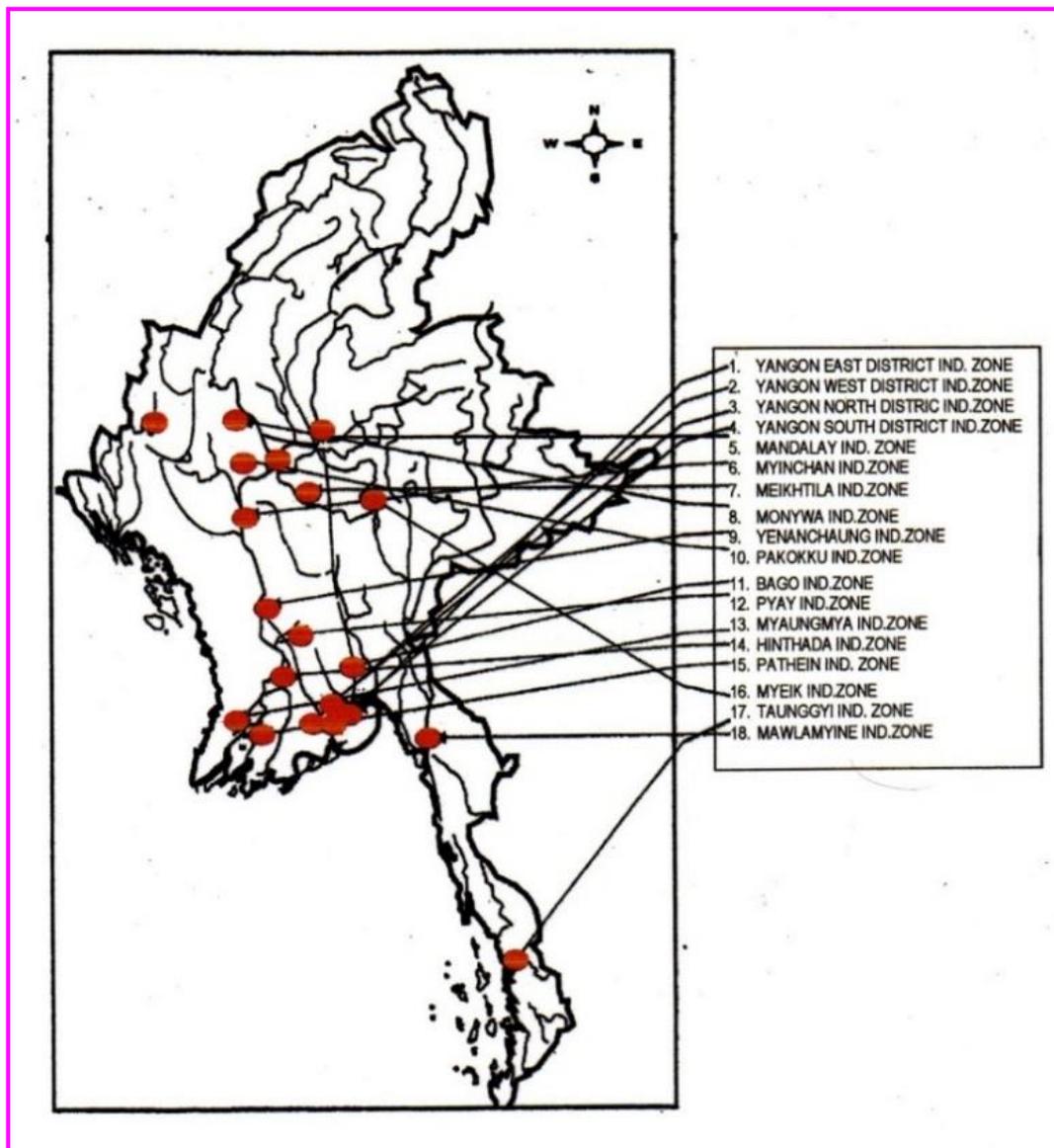


Myanmar Map

For the case of Vietnam, its renovation movement known as *Doi moi* pushed up SME development because transition from a centrally planned economy to a market economy depressed to reduce the size of state-owned sector, and private sector has emerged in this process. As a result, numbers of private-owned SMEs became a dynamic force in the development of Vietnam economy. Success of Vietnam's development strategy also depends to a large degree on the development of private sector which consists mainly of SMEs. Vietnam's entry into the WTO by 2006 contributed SME sector to have a great opportunity to expand clustering

and exporting. Amount various initiatives to improve the competitiveness of Vietnam's SMEs, innovation policy attracted attention from policy makers, researchers and the business community. It was based on the assumption that innovation can affect firms' competitiveness and hence export status by increasing productivity, by reducing costs, and by developing new goods for international market. Such innovations were also expected to occur from mostly private sector. Thus, progress of privatization encouraged to expand private sector as well as total number of SMEs.

**Figure 1. Industrial Zone in Myanmar**



*Source: Industrial Development and the Role of Private Sector*

After a period of 5 years up to 2000, the numbers of SMEs increased more than double with the average growth rate of about 25 percent per year. The ownership structure of SMEs indicates that most of SMEs are non-state owned. The number of

SMEs in State sector decreased due to the successive privatization process. In 2000, there was 11 percent of state-owned SMEs and 3 percent in foreign owned. In 2004, the shares of SEMs in these two sectors stood at equally 3 percent each and non-state sector occupied the remaining 94 percent. In this regard, in the year 2002, the government established the SME Development Agency under the Ministry of Planning and Investment, and Vietnam has introduced a lot of measures as following to promote SME sector development.

- ❖ to private some kind of tax exemption for SME.
- ❖ to establish a development assistance fund for providing SMEs and with special credit;
- ❖ to establish a credit guarantee fund for SMEs;
- ❖ to interest local authorities to assist SMEs for getting the land for doing business, especially building industrial zones for SMEs.
- ❖ to strengthen the responsibility of the local authorities and to govern for supporting SMEs in accessing market information, promoting their products and marketing, to use state budget for procuring goods produced by SMEs; and
- ❖ to promote SMEs to invest in supporting industries and to link with big enterprises, to support SMEs in labour training.

According to the estimation of the Ministry of Planning and Investment, the contribution of SMEs including those owned by the State and foreigners accounted for 24 percent of the economy in 2004. Although there were no accurate publicly available data on employment creation, the Ministry's survey showed that more than 90 percent of total firms were SMEs even though number of employees for them was defined less than 200.

**Table (1). Classification of Vietnamese Enterprises by Number of Employees (2007)**

Ownership	Number of Employees			
	Less than 100	100-199	200-499	More than 500
State-Owned	5067	190	263	1333
Foreign-Owned	457	15	33	238
Private-Owned	10908	165	351	2280
Joint Venture	102	3	3	20
Limited Company	4195	105	142	719
Cooperative	1849	38	97	636
Household	1879402	-	-	-

*Source: Industrial Department, Ministry of Planning and Investment, Vietnam.*

Unlike Myanmar, sectoral structure of registered SMEs in Vietnam highlighted on manufacturing, trade and services rather than primary sectors such as agriculture, fishing and mining.

### **Opportunities for SME Development in Myanmar**

As boasting since very earliest days, Myanmar is rich in variety of natural resources. Recently, most of these resources are exported in the forms of raw materials such as round logs, rough precious stones, and raw gas. There are numbers of rooms for SMEs to engage in the value-added production by using abundant resources.

One of the most important points to grow SMEs in Myanmar is location of the country. Myanmar is surrounded by the most populous and emerging countries namely China and India. If Myanmar SMEs were able to penetrate certain products into these markets, their sizable demand could uplift rapid expansion of the sector.

Size of domestic market also should not be ignored because its import demand for various types of consumer products is very significant in the country's external trade. There are number of small markets which are still unable to fulfill consumers' needs and wants.

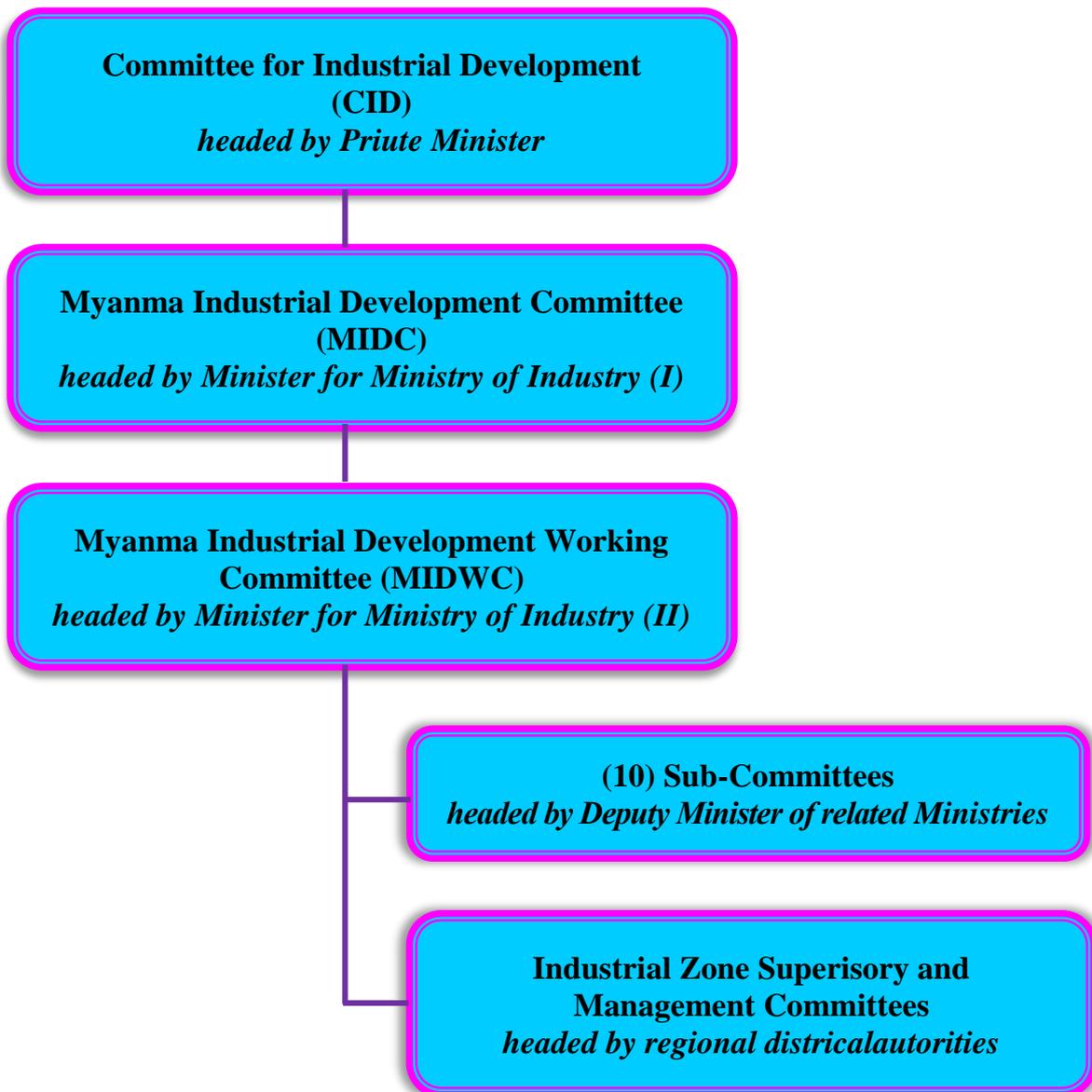
Relatively cheap and abundant labour force may be another occasion to operate the business in a lesser cost although most workers have limited skill. If formal and extensive trainings were given to unskilled workers, the SMEs would have potential efficiency gains.

A good chance to encourage SMEs is export promotion by using multilateral and bilateral trade agreements which favor one-way or two-way tariff deduction. Since Myanmar is member of ASEAN, Common Effective Preferential Tariff (CEPT) scheme and tariff reduction programmes of other counterpart countries such as China, Japan, Korea and India are fruitful to Myanmar SMEs.

### **Major Constraints for SME Development in Myanmar**

All SMEs, in general, are very fragile due to their nature of low capital investment, out of reach of bank loans, small market share, low level of technology, insufficient machines and equipments, etc. SMEs in Myanmar have relatively more constraints than those in Vietnam because of its underdeveloped industrialization and external barriers. It was found that exposure and culture, access to finance, high inflation rate and competition are major problems that new entrepreneurs in Myanmar have to contend with.

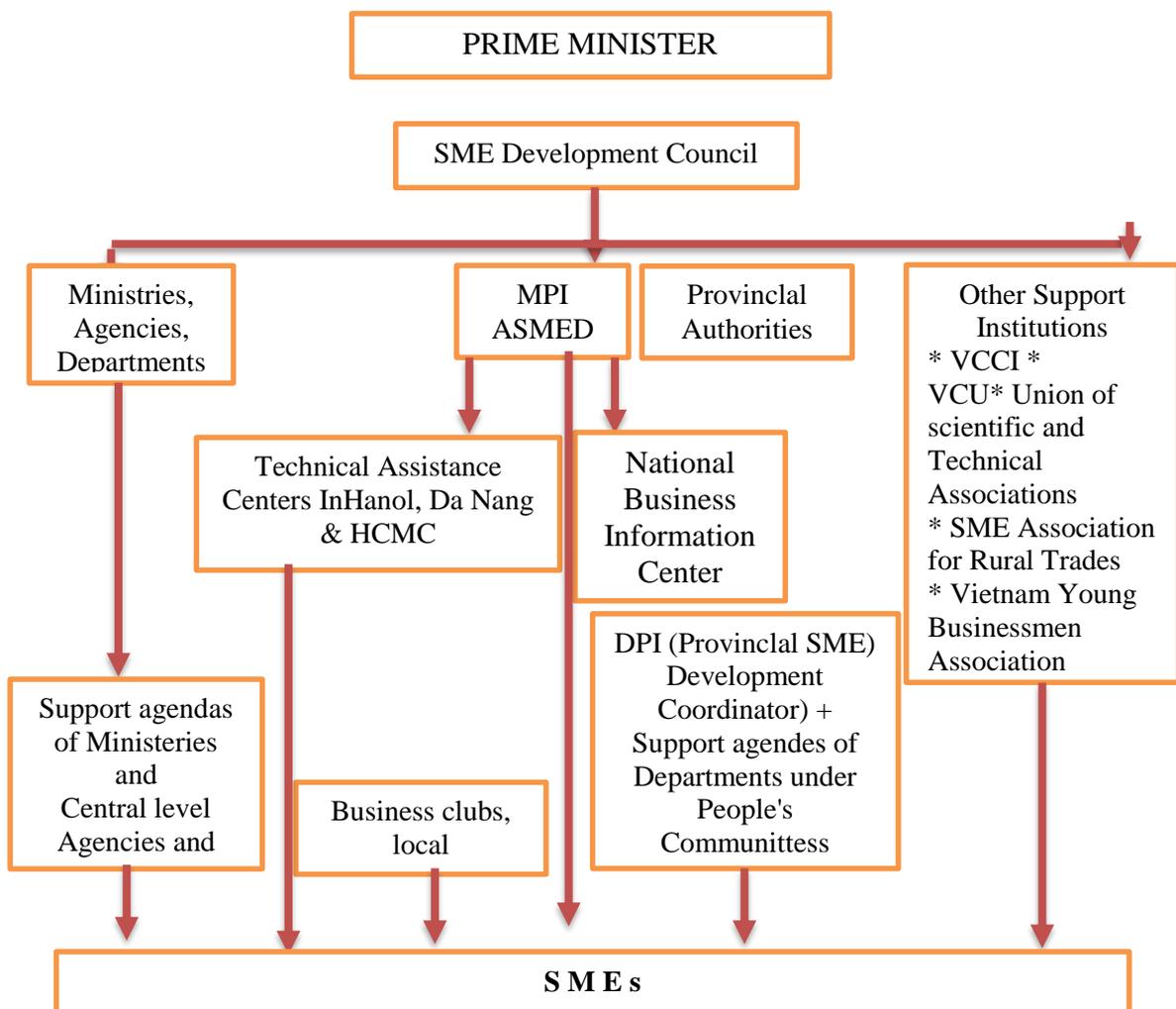
**Figure 3. Institutions for SME Development in Myanmar**



Very common and foremost problem is shortage of electric power supply. According to the ASEAN Statistical Yearbook 2006, proportion of household with electricity was 40.4 percent in Myanmar while 77.8 percent in Vietnam. One survey conducted on type and magnitude of constraints in industrial zones in Myanmar also showed electricity supply as the severest constraint. Nowadays, power meter boxes are easily accessible in the industrial zones and household residents. National grips and local cable extensions are also improved and newly installed throughout the country but shortage of electricity, unstable voltage, and frequent blackouts are still frequent problem. Other constraints in the series from most to less were concerning with raw material, labour, transport, financial assistance, technology, communication, market, sanitation and water supply, and revenue.

Among the constraints other than shortage of power supply, lack of financial sources is an obvious problem. SMEs are unable to acquire bank financing because of lack of adequate collateral. In Myanmar, only real estates are eligible to be offered as the collateral to the banks. Inability to attain loans from financial institutions forces them to borrow from informal lenders who usually charges much higher interest rates compared to bank interest rate. Unofficial money lenders charge very high interest rates, from 10 percent to 20 percent per month, depending on the quality of collateral property. An option to have loans by offering the properties such as cloth and furniture as the collateral (these properties are unacceptable by then banks) is the borrowing from pawnshops. Pawnshops, which acquire licenses from city and township municipal authorities, scatter all over the country. They charge monthly interest rate on small loans about 4 percent or 5 percent on average.

**Figure 4. SME Support Institutions System in Vietnam**



The SME Development Agency undertakes the SME policy coordination at the central level as well as the standing secretariat of the SME Development Council. The ultimate objective of SME Development Agency is to collabourate closely with

private sector representative organization and public and private service suppliers to assist SME to improve their competitiveness. Several fundamental features between Myanmar and Vietnam are believed to be more or less the same. But there are differences mostly in policy formulation, policy implementation, economic environment and external impacts. The comparison of basic features is shown in Table (2) .

In Vietnam, a common evaluation framework of financial institution is the five C's namely Capacity, Capital, Collateral, Conditions and Character. Capacity refers to the cash flow and profitability of the firm. Capital is the money invested in the business. Collateral is a form of security for the lender. Conditions refer to the intended purpose of the loan. Character is the obligation that a borrower feels to repay the loan, which is acquired from payment history. Unlike Myanmar, SME banks in Vietnam accept firm equipments, buildings, accounts receivable, and inventory as the forms of collateral. Thus, Vietnam SMEs have easier access for loans. More or less, economic sanctions made by U.S and E.U countries are not neglected blockades to hinder development of industrial sector including SME in Myanmar. The most significant sector is CMP manufacturing, mainly garments. Vietnam, in contrast, is supported by the U.S with trade openness of its market and injection of its investments. In view of major constraints both internal and external, those in Myanmar are much considerable compared to those in Vietnam.

**Table. 2 Basic Features of Myanmar and Vietnam**

<b>No</b>	<b>Particulars</b>	<b>Myanmar</b>	<b>Vietnam</b>
1.	Location	Southeast Asia	Southeast Asia
2.	Total land area	677,000 sq:km	331,668 sq:km
3.	Population (2007/08)	57.5 million	87.3 million
4.	Number of national races	135	54
5.	Size of GDP (current price) (2006/07)	13,894 billion kyak	837,853 billion dong
6.	Structure of GDP (2006/07) (%)		
	Agriculture	45.3	20.9
	Industry	18.5	41.0
	Services	36.2	38.1
7.	GDP growth rate (2006)	13.6%	8.4%
8.	External trade (2005)*		

No	Particulars	Myanmar	Vietnam
	Export (US\$ Mil)	3,810	32,233
	Import (US\$ Mil)	1,772	36,881
	Trade volume (US\$ Mil)	5,582	69,114
9.	Growth of external trade (2005)*		
	Export (%)	12.7	21.6
	Import (%)	(-)3.1	15.4
10.	Price Index (annual change %) (2006)	10.74	4.8
11.	International reserve (US\$ Mil)(2005)*	782.3	7041.5

### Conclusion

With the assumption of State power, the military government officially announced in March 1989 to adopt market-oriented economic policy in Myanmar with invalidation the 1965 Law of Establishment of the Socialist Economic System. The Communist Party of Vietnam led the free-market reforms also known as *Doi Moi* in 1986. So, both Myanmar and Vietnam can be said that they initiated change of their economic system from planned or centralized to market oriented economy almost at the same time. The two countries encouraged the development of private sector in the economy and achieved rapid growth rate in the region. Reform measures in Myanmar were inconsistent because, for example, private sector is encouraged to promote export but high export tax is levied on exports of private sector. Vietnam could implement export promotion, for example, in rice export by using tax policy as a tool.

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# GREEN FINANCING IN THE TRANSITION TO CLIMATE - RESILIENT ECONOMY IN VIETNAM

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## **Abstract**

*Greening the economy involves improving the quality of the environment and tackling climate change, and is a major policy, economic and financial challenge. Key issues that have emerged in this context relate to financing climate change mitigation and adaptation and how to close the financing gap to fund the needed low-carbon investments. Beyond such capital mobilization there is the more general challenge of whether and how the financial system can enable capital reallocation consistent with the “green” transition and for the long run, and what risks, opportunities and incentives are involved. This paper provides a brief overview and summarizes a Vietnamese case discussion on these issues.*

**Keyword:** *Climate finance, green financing, resilient economy, economic instrument, low carbon economy*

## **1. Introduction**

As climate change is posing increasing risks for both human and natural systems, a shift toward low-carbon and green economic development is needed to meet future challenges. In order to switch from the sole pursuit of economic growth to a sustainable development path, transformational changes in both public and private sector investments are of much importance. Climate finance, defined as capital flows targeting low-carbon and climate-resilient development with direct or indirect greenhouse gas (GHG) mitigation or adaptation objectives, offers a great opportunity that should not be ignored.

Significant investments are needed to support the global transition to a low-carbon climate resilient future in line with the 2015 Paris Agreement. Financial

instruments play a critical role in creating incentives and in triggering financial flows towards these investments. Governments have put various financial instruments in place to drive climate change mitigation, backed by funding from a variety of sources.

This paper brief analyses some financial innovations in support closing the financing gap to fund the needed low-carbon investments and climate change in Vietnam, with some trends and solutions we can draw for future applications.

## **2. Literature Review**

The transition to an economy with low carbon and climate resilience requires significant economic investment in the areas of green sector. UNEP (2015) estimates that the annual investment needed to provide a green economy in the 2010-2020 period will be about 2% of global GDP. One of the most suitable features of environmentally sustainable investment is to include many technologies at different stages of maturity; each of these technologies may require a different type of finance (Ruppel 2013). Furthermore, funding requirements for sustainable transformation can significantly exceed the capacity of the public sector, requiring significant participation from existing private financing and capital use. From this point of view, GF plays an important role in promoting environmentally sustainable investment companies, supporting countries to reduce emissions and adapt to the consequences of climate change (Nakhoda 2014).

GF can be defined as the entire flow of financial investments into sustainable development projects and initiatives, environmental products and policies to promote sustainable economic development. Accordingly, GF is not limited to climate finance (i.e. the set of financial tools specifically aimed at mitigating greenhouse gas emissions and adapting to climate change), but includes all financial products and services aimed at a wider range of environmental objectives, such as industrial pollution control and water, sanitation and biodiversity protection. Moreover, it comprises the “operational” costs of green investment, costs that are generally not included within the definition of green investment (e.g. project preparation and land acquisition costs) but can pose relevant financing challenges (UNEP 2018)

GFs include many financial instruments, such as public funds, venture capital, business angels, project finance, equity, debt, retirement funds and green infrastructure bonds. Many people are adjusted to a specific development stage of a green project: venture capital is used with unproven and unproven technologies; Project funding is used for mature technologies and green infrastructure bonds are used in later stages of the project (e.g. refinancing operations). A key feature of all the tools of GF is that they make investment and lending decisions according to environmental screening and risk assessment in order to meet environmental

sustainability standards (Tukker 2015). In other words, GF takes into account the environmental factors during the lending and investment decision making process, the old post monitoring and the risk management process. In this regard, investors should be directed to green investment for a variety of reasons, including ethical considerations, beneficial profit profiles, legal or regulatory constraints and improved reputation of investors (Bracco et al 2018).

### **3. Vietnam and climate change**

Vietnam is one of the five countries most severely affected by climate change. In Vietnam, natural disasters are increasing in both scale and repeat cycle. In the period 2002 - 2010, about 9.500 people died and went missing due to natural disasters. The lowest damage caused by natural disasters in the whole country is 0.14% of GDP (in 2004) and the highest is 2% of GDP (in 2006). On average in the past 15 years, natural disasters have damaged about 1.5% of GDP annually (Tran Tho Dat, Dinh Duc Truong and Vu Hoai Thu 2013). Under the climate change scenario, at the end of the 21st century, the average temperature will increase 2-3 degrees celsius, the sea level will rise by nearly 1 meter (the highest scenario). If the sea level rises by 1 meter, the Mekong Delta will flood 39% of the area, Ho Chi Minh City is flooded with 20%, the Red River Delta provinces have and the Central provinces 10% and 30% flooded respectively. An one meter rise in sea level could have a direct impact on the lives and livelihoods of about 20% of the population and losses could reach 10% of GDP each year.

The Government of Vietnam is well aware of the challenges facing climate change and has responded strongly through institutional policies and agendas to address the vulnerability to climate change and promote less carbon emission and green growth path. In 2013, the Party Central Committee issued Resolution No. 24 / NQ-TW on Proactive responding to climate change, strengthening natural resource management and environmental protection. The resolution identified the fight against climate change as "one of the most important tasks of the whole political system". Before that, the Government promulgated the National Strategy on Climate Change (2011) and Green Growth (2012), which is the focus of Vietnam's policy to respond to climate change.

After the Government approved the Paris Agreement on October 31, 2016, Vietnam was obliged to fulfill its commitments under the Paris Agreement. As one of the countries heavily affected by climate change, Vietnam has actively and positively built its proposed Contribution of its own decision (INDC). According to Viet Nam's INDC, by 2030, by domestic resources, Vietnam is committed to reducing 8% of greenhouse gas emissions compared to the normal development scenario and

can further reduce it to 25% if it receives support internationally. At the same time, Vietnam will implement many adaptation activities to increase resilience to climate change, creating conditions to contribute more to reducing greenhouse gas emissions. ”To implement the tasks of responding to Climate change from now to 2030, Vietnam will need about 30 billion USD from state resources, international support and both domestic and foreign enterprises (MPI 2015).

#### **4. Overview of climate finance in Vietnam**

##### **Public spending**

Public spending is an important part of climate finance. In Vietnam public spending has some characteristics:

Firstly, the budget spent on responding to climate change of the Government remained stable from 2010 to 2013, while the total expenditure decreased slightly. Calculated as a percentage of GDP, spending on climate change response is still low, estimated at only 0.1% of Vietnam's GDP. In order to transform from the conventional development model (BAU) to the road of low carbon emission and climate adaptation, Vietnam needs to increase this rate.

Secondly, spending on responding to climate change focuses on large-scale infrastructure projects to increase resilience, but the budget for carbon reduction actions is also increasing. During the period of 2010-2013, the government allocated about 88% of expenditure on climate change response to projects that created a large number of simultaneous benefits on climate change adaptation. Direct funding for light reduction from recurrent expenditures tends to increase. In the period of 2010-2013, the proportion of direct spending to reduce slightly only accounted for 2%. By 2013, the budget for mitigation increased to 3.9%, mainly due to the increase in recurrent expenditure through the National Energy Saving Program.

Thirdly, most of the budget expenditure is devoted to investment in responding to climate change, and only a small amount is spent on scientific, technical and social capacity, policy and governance activities. A large percentage of ministerial-level expenditures (89%) are for investment in climate change. Only a small percentage of spending on climate change response is allocated to capacity building for science, technology, society and policy and governance, each of which has important implications in creating lips. The school promotes investment in responding to climate change. Spending on science, technology and social capacity accounts for 9% and policy and governance only account for 2% of total expenditure on climate change.

## Private investment and international funding

In recent years, the Government has issued many policies to encourage enterprises to protect the environment, minimize and respond to climate change. Typical regulations are tax exemption and reduction for enterprises operating in the field of environmental protection (Law on Corporate Income Tax); preferential capital for environmental protection investment projects (Decree No. 04/2009 / ND-CP dated January 14, 2009 by the Government). At present, there are few systematic studies on the spending and investment of the private sector for climate change. According to MPI (2017), investment and regular costs for environmental protection account for a very small proportion of total investment and production and business costs of enterprises. Approximately 40% of businesses invest in environmental protection activities and have regular costs for environmental protection. In particular, the ratio of regular expenses for environmental protection of enterprises only accounts for more than 1% of the total production costs.

**Table 1: Sources of finance for climate change in Vietnam**

Financial source	Billion VND	%GDP	Percentage contribution within total budget
<b>PUBLIC SECTOR</b>			
National spending for natural disaster relief and restoration	11.000	0.25	
National spending for climate change response (capacity building, resilient, mitigation, research)	4.500	0.1	40%
<b>NON PUBLIC SECTOR</b>			
Mobilization from Disaster Reserve Fund	Depends on provinces	Not significant	
Private company investment (%)	18.000	0.4	60%
<b>Total</b>	<b>33.500</b>	<b>0.75</b>	<b>100%</b>

*Source: Authors synthesize from sources (2019)*

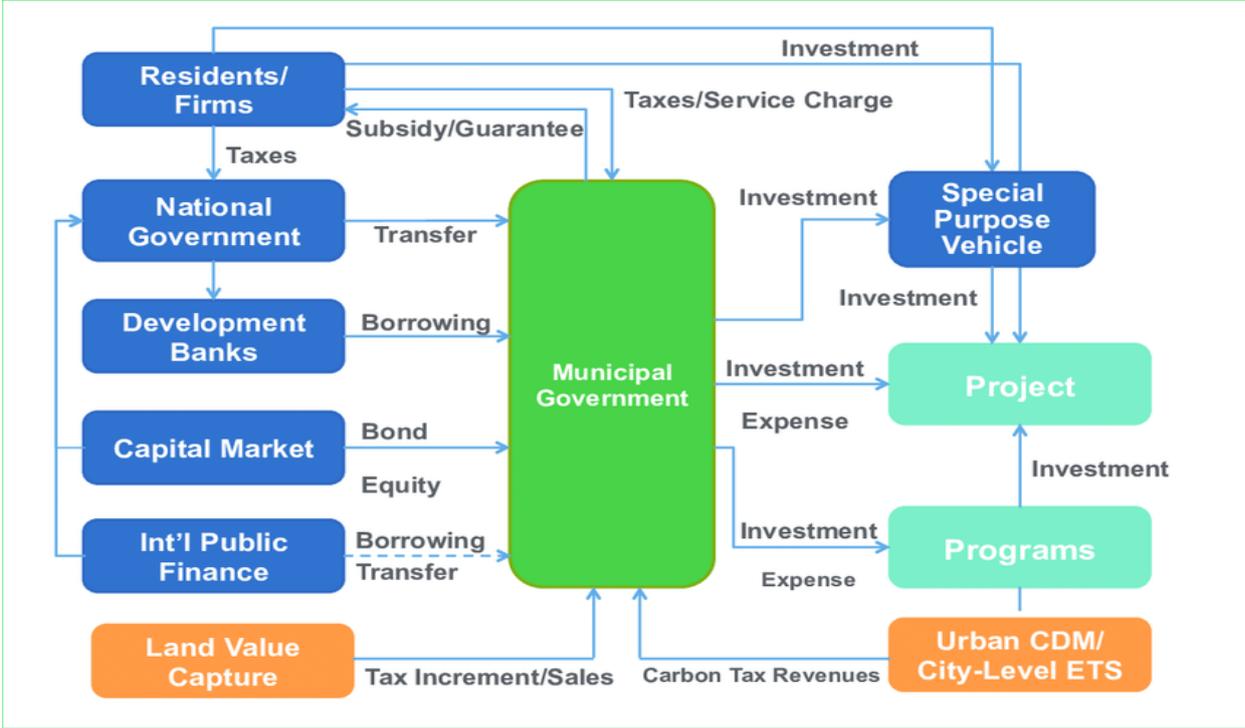
In Southeast Asia in particular and Asia in general, Vietnam is considered a key country in regional cooperation programs such as the Asia Region Low Carbon Development Strategy Forum. On the other hand, with a long-term cooperative relationship with major partners and sponsors interested in the fight against climate

change such as the World Bank (WB), Asian Development Bank (ADB) or Development Agency United States International (USAID), Vietnam has been receiving a lot of financial, technological and capacity building support. According to the report of the Ministry of Finance, in the period of 2010 - 2015, Vietnam received about USD 1.3 billion (equivalent to VND 26,000 billion) through the SP-RCC Program, including a part of non-refundable aid from Canada, Australia and most of it are concessional loans from WB, JICA, AFD, Korea. It can be seen that the financial support for climate change in Vietnam plays a very important role in the models of climate change response in the locality, especially in the context of limited budget and the need to pay for climate change.

**4. Some policy implications for Vietnam on mobilizing and using financial resources for climate change**

After the COP21 agreement, experts estimate that in the period of 2016 - 2030, the world needs about USD 6,900 billion in investment each year, to achieve the goal of keeping the temperature not exceeding 2 degrees celsius by year 2100. Vietnam alone needs a capital of about USD 30 billion in this period to cope with climate change, of which 70% comes from non-state sector. If the rate of 0.5% of GDP is reported, Stern (2006) reports that at least one country must invest in responding to climate change, the capital demand for the 2016-2020 period is about 5.86 billion USD (MPI 2017, WB 2015).

**Figure 1: Financial resources can be mobilized to respond to climate change**



Source: UNEP (2015)

## **Policy implications for the government sector**

### *Tax increment*

In the current context, it is necessary to continue reforming the environmental tax system to increase budget revenue to create resources to respond to climate change, limit production and consumption of products causing harm to the environment and climate change. Environmental protection tax is considered as one of the tools that can overcome market failures and defects because it changes the behavior of pollution.

In Vietnam, the Law on Environmental Protection Tax comes into effect from January 1, 2012, after achieving 5 years of implementation, a number of objectives have been achieved, including significant financial resources contribution to the state budget, increasing revenue, ensuring expenditure needs for the state budget. However, there are still two big points of environmental protection tax that can be reformed to increase revenue for the budget, contributing to the response to climate change. Firstly, current taxes are levied on 8 groups of subjects such as petroleum, coal, plastic bags, chemicals, while these 8 objects are only a small part of many goods and products that cause too much pollution in production and consumption processes (such as computers, phones, batteries, tires, cleaning chemicals, paper production, food processing, chemical fertilizers, ...). The second is that the tax rate is still low and can be adjusted to increase in the direction of more accurately reflecting the social costs that pollution causes, and integrating with the region and the world.

### *Application of environmental protection fees with emissions*

Environmental protection fee is a charge on the behavior of discharging air polluting gases, collected based on the volume of air pollution discharged into the environment. As with other environmental protection fees, the purpose of the emission fee is to regulate the behavior of the organization and individual towards reducing the discharge of emissions causing environmental pollution, while generating revenue for environmental protection. This is a direct economic tool to bring environmental protection costs into product prices on the principle that "polluters pay." In terms of charge-bearing subjects, it is still common for SO<sub>2</sub>, NO<sub>x</sub>, CO gas even CO<sub>2</sub>, which is significant in the context of the current climate change.

### *Promotion of public-private partnership (PPP) in climate change response projects*

With the role of providing public services in general and environmental services in particular, the state is always the main person responsible for financial security to provide the above services. However, the way to mobilize investment

capital for climate change is mainly from the current budget and foreign aid (ODA). Theory and practical experience show that it is not necessary for the state to be a direct provider of public services to consumers. Recognizing that, Vietnam has many orientations and policies to promote socialization of environmental protection, such as Central Party Resolution 41; Law on Environmental Protection 2014; many documents under the Law such as Decree No. 69/2008/ND-CP on policies to encourage socialization of activities in the fields of education, vocational training, health, culture, sports and environment; and recently the Government's Decree No. 15/2018/ND-CP on investment in the form of public-private partnerships.

To improve the ability to apply PPP in climate change projects, some aspects need to be improved: (i) Complete the general legal environment system for PPP: need a state management agency for PPP; to ensure the guarantee of the Government as clear as the time of transfer and ownership of BOT projects; dealing with the conflicts between existing legal documents (such as the Decree on BOT, the General Investment Law, the Law on Corporate Income Tax), the initial support of the Government and advantages for climate change projects. (ii) Implementing the project: improving uncertainty about the role of government (project development agencies) and private investors in bearing costs and risks when developing projects; Real priorities of projects are developed according to PPP model in the field of climate change; make provisions on procurement procedures including signing contracts through negotiation with priority businesses. (iii) Project funding: providing strict regulations on foreign exchange reserves and exchange, and foreign currency transfers; guarantee loans and lender's right to intervene in case of late repayment or when the project is poorly operating.

### **Mobilize capital for climate change from the private sector**

Addressing the impacts of climate change requires strong efforts and actions of the state and community, in which the private sector plays a very important role and meaning. With solutions, priority areas identified in the implementation of the Paris Plan and "Contribution decided by the country" (NDC) in Vietnam, many opportunities are also created for the private sector, which are opportunities for research, creativity and investment in greenhouse gas emission reduction and climate change adaptation activities. Promising areas include renewable energy; smart urban, eco-friendly; smart traffic; works and solutions to adapt or increase the ability to adapt to climate change. Supporting private sector access to climate change investment funds, the State Bank is developing a Green Credit Program to encourage commercial banks to provide more loans to support businesses to implement green growth. Currently, there are 4 banks participating in the pilot program: Agribank, BIDV, Sacombank and VCB. Accordingly, banks will support production and

business plans and projects in the field of new energy/ renewable energy, waste treatment/recycling and organic agriculture.

In addition to macro policies, businesses can access many support funds for climate change. For example, the Green Credit Trust Fund (GCTF) encourages private investment in cleaner production systems and energy saving solutions, along with a performance-based grant. When the project is successfully implemented, businesses can receive bonus payments on debt: If new technologies help reduce emissions by at least 30%, borrowers will be entitled to 15% of the service debt financed from the Fund. If emissions are reduced by 30-50%, the subsidy rate will be 25%. So far, the Fund has supported more than 100 businesses in Vietnam.

### **Develop green bonds to mobilize capital for climate change**

Green bonds are defined as fixed income securities to attract capital for projects with environmental benefits. Accordingly, the proceeds from this bond issuance will be committed to investment in climate change adaptation and mitigation programs, including clean energy projects, efficient energy use, public transport and clean water ... Green bonds can be issued by government, commercial banks, development banks, international financial institutions, companies. On the government side, policies to encourage green investment such as tax incentives, preferential loans, and procedures will be the main actors. Individual investors gradually demand more for businesses, not only does it require effective business but also has positive environmental and social impacts. Institutional investors also gradually increased their portfolio to investments that positively influence; share a portion of profits between traditional investors and "green" investors through compensation mechanisms. When increasing investment capital (demand for green bonds), it is necessary to have more green projects (supply side of green bonds).

### **Attracting international capital for climate change response**

In the Paris Agreement (2015), 195 out of COP21 member states agreed to limit the increase in global temperature by no more than 2 degrees Celsius compared to the pre-industrial era, and will try to bring this number to 1.5 degrees. This is the most important point about the goals to be achieved by COP21. To achieve this goal, developed countries will provide finance to help developing countries convert to renewable energy, as well as enhance their ability to cope with natural disasters, such as droughts or floods. Vietnam is a member of the Paris agreement and can access all financial funds to support climate change - Access criteria and evaluation criteria are different in funds - Some funds can receive project documents and provide direct financial support, a number of funds provide financial support through commercial banks or trust funds.

Although Vietnam has initially formed mechanisms to mobilize international cooperation resources to cope with climate change such as the Program to Support Climate Change Response (SP-RCC) or the National Target Program. But with climate change, policies and mechanisms are still incomplete and inconsistent. Therefore, in the coming time, the Government should review, update and perfect the system of legal documents related to financial policies as well as new capital mobilization mechanisms. Recently, the World Bank and the United Nations Development Program have jointly implemented the Climate Finance Options Forum to support countries and localities in accessing financial information for Climate change. This is an effective tool to synthesize, screen and share information about possible financing sources for climate change mitigation and adaptation.

The development of a complete Monitoring, Reporting and Evaluation (MRV) system is also one of the tasks to be implemented immediately in the coming time. MRV is part of climate change mitigation approaches, a system to assess the contribution of climate adaptation investments to development goals. Along with this, Vietnam needs to increase transparency, efficiency and accountability in mobilizing and using funding sources for climate change to create trust for donors and ensure a solid financial mechanism to be proactive in the fight against climate change, economic growth and sustainable development.

## **5. Conclusion**

In order to successfully manage climate challenges in relation to sustainable transition, the implementation of green agendas in conjunction with GF is necessary at both national and international levels. This requires an open and sustainable debate in each country about the opportunities, bottlenecks and priorities of the GF for national action. In this framework, the present paper analyzes the opportunities and levels of challenges affecting GF in Vietnam. To fulfill the objectives such as commitments in the Paris Agreement and respond effectively to climate change, Vietnam needs a smart policy system, which allows attracting resources from businesses, communities and international donors. In addition, it is important to improve public financial systems to increase financial income from activities that cause environmental pollution. PPP is also a solution that has been successful in many countries and can be applied in Vietnam if there are adequate facilitation institutions.

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# LAO PDR'S ELECTRICITY PRODUCTION AND EXPORTS WITH ENVIRONMENTAL SUSTAINABILITY

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## **Abstract**

*Hydropower is one of the very important energy sources, contributing to the socio-economic development of Lao People's Democratic Republic (Lao PDR) over the years. However, in addition to the positive effects, hydropower plants in Lao PDR have caused serious effects such as reducing forest areas, changing flows and ecosystems of rivers and causing environmental pollution. Therefore, in order to achieve the sustainable development goals by 2030, these problems need to be addressed by the Lao PDR government itself with supports from neighboring countries such as Vietnam and international organizations.*

**Key words:** *Hydropower. Electricity exports. Environmental sustainability.*

## **1. Introduction**

Lao PDR is a land linked and mountainous country. The country is located in the middle of the Mekong Sub-Region, bordered by the Kingdom of Cambodia, the People's Republic of China, the Republic of the Union of Myanmar, the Kingdom of Thailand and the Socialist Republic of Vietnam. It has a total area of 240,000 square kilometers (Jica Laos Office, 2018).

Lao PDR has changed its economic policy from centrally - planned mechanism to market economy since 1986. The economy has been developing and expanding rapidly. As a result, over the last decade, Lao PDR had remarkably achieved economic growth among the Association of Southeast Asian Nations (ASEAN) countries, averaging 7.7%, with GDP per capita reaching \$2,577 in 2018. In the mid-2018, the country suffered the flooding – related disasters, but its economic growth still remains robust at 6.5% (World Bank, 2019). At the same time period, Lao PDR has achieved significant progress in in poverty alleviation, with poverty rates decreased from 46% in 1992 to 23.2% in 2017. However, the country still depends

on agricultural sector (accounting for 17.3% of total GDP, and 70% of total population - 6.85 million people in 2018) (Jica Laos Office, 2018).

Lao PDR's economic growth rate of 7-8% has been driven primarily by robust construction, resource development and electricity generation (Jica Laos Office, 2018); and supported by increased resource development and electricity generation, growing opportunities in the non-resource sectors from closer regional economic integration, and economic reforms to improve the business environment, its GDP growth rate is expected to continue to growth in 2019-2020 (World Bank, 2019).

Lao PDR has many advantages and is considered an ideal place in the region to produce and export electricity. Due to its special geographical terrain, Lao PDR is richly endowed with hydropower resources and is becoming more urbanized and better integrated within ASEAN, as well as the Greater Mekong Sub region (IHA Central Office, 2017). With the advantage of many rivers, mountainous terrain (80% of the entire land area) and low population density (27 person/km<sup>2</sup>), Laos is very strong in hydropower development (Jica Laos Office, 2018). In particular, tropical monsoonal rainy season (May-October) comes from two different directions: the first one is from Gulf of Thailand and the second one is from Gulf of Tonkin, resulting in high precipitation and creating favorable conditions for hydropower generation. The Mekong River, which flows through Lao PDR, contributes an estimated 35% of the Mekong's total inflows, resulting in one of the main sources from where hydropower energy is extracted (IHA Central office, 2017).

According to the International Hydropower Association (IHA), Lao PDR belongs to one of the ASEAN countries with most abundant hydroelectric resources. It has about 26.5 gigawatts (GW) of theoretical hydroelectric power capacity. In 2016, Lao PDR has an installed capacity of only 4.17% GW, accounted for 15.7% of the total in unrealized power potential (Angaindrankumar Gnanasagaran, 2018). Laos, one of Asia's poorest countries, hopes to become the "Battery of Southeast Asia" by selling power to neighbors through a series of hydropower dams (Bangkok Reuters, 2018)

However, Lao PDR is highly vulnerable to the impacts of climate change and natural disasters. For example, from 1990 to 2015, Lao PDR had 21 floods and storms. In particular, most of floods occur in the central and southern parts of the country along the Mekong plain (The Government of the Lao PDR in consultation with National and International Partners in Lao PDR, 2018). Global temperatures have been on growing up which has increased the amount of water vapor in the atmosphere. This has resulted in more intense downpours. Together with substandard construction materials, it could lead to a plausible reason for hydropower dam's

failure. The rapidly increasing number of hydropower plants in Lao PDR already raised many environmental and social concerns. *The objective of this paper is to identify problems and challenges related to hydropower planning and development with environmental sustainability considerations in Lao PDR.*

## **2. Method and Conceptual Framework of Sustainable Development**

The article uses the method of data statistics, synthesis and analysis. Based on the data collection, statistics and synthesis regarding the impact of Lao PDR's electricity production and exports with environmental sustainability which are found in reputable articles, scientific journals, archives and mass publications of Lao PDR as well as other related organizations, the authors then analyze the relationship of electricity production and exports with environmental sustainability in Lao PDR.

This paper is based on the theoretical framework of sustainable development to study Lao PDR's electricity production and exports with environmental protection throughout the years. The term "sustainable development" was first mentioned in the early 1980s in the International Union for Conservation of Nature and Natural Resources (IUCN) World Conservation Strategy report. In 1987, the Bruntland Commission published its report namely "Our Common Future", in an effort to link the issues of economic development and environmental stability. This report defined the term: "sustainable development" as: "Development that meets the needs of current generations without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987, p. 43). This concept has become a popular and important concept, widely used in academic, global and national level (UNECE/OECD/Eurostat WGSSD, 2008, pp.13).

So far, the concept of sustainable development, though different in scope, reflects the general nature of development, which is the combination of economic development with social and environmental issues. Harmonious and flexible manner, Vietnam's Agenda 21 was promulgated by the Government in accordance with Decision 153/2004/QD-TTg dated 17 August 2004, aimed at sustainable development of the country on the basis of strict integration, rationality and harmony between socio-economic development and environmental protection.

Broadly, the integration of environmental, social, and economic concerns into all aspects of government decision making processes is the key principle of sustainable development. *More precisely, this paper refers more on the concept of sustainability in terms of Lao PDR's electricity production and exports in order to increase its economic growth rate and protect natural environment without affecting the capabilities of future generation.*

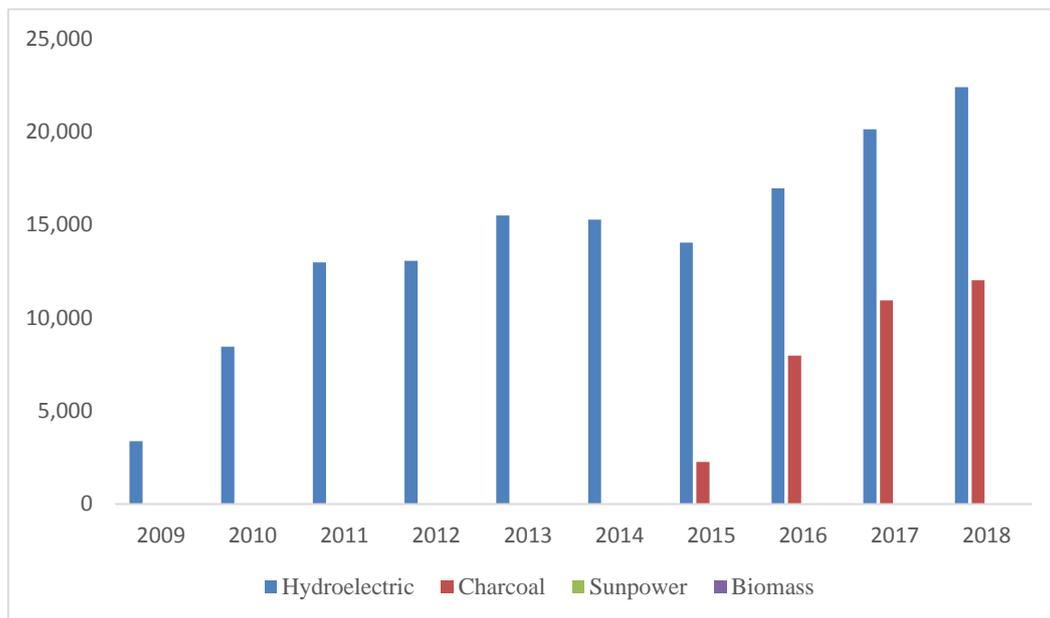
### 3. Electricity production by source in Lao PDR

Hydropower is the main primary energy sources of Lao PDR, using abundant water resources from Mekong River and its tributaries. In the period of 2009-2018, hydropower was the second increase (after coal), at an average rate of 9.8%, higher than average annual growth rate of the total primary energy supply of Lao PDR of 7.5%<sup>1</sup>.

Between 2009 and 2015, hydropower accounted for 98.8% of the total annual electricity production in Lao PDR. Until 2013 and 2014, several biomass and solar power plants were established, and since 2015, coal (as anthracite and lignite) has been consumed to produce electricity only for export purposes (see Figure 1).

**Figure 1: Electricity production by source**

*Unit: GWh*



*Source: Ministry of Energy and Mines, Lao PDR (2018); ERIA (2019)*

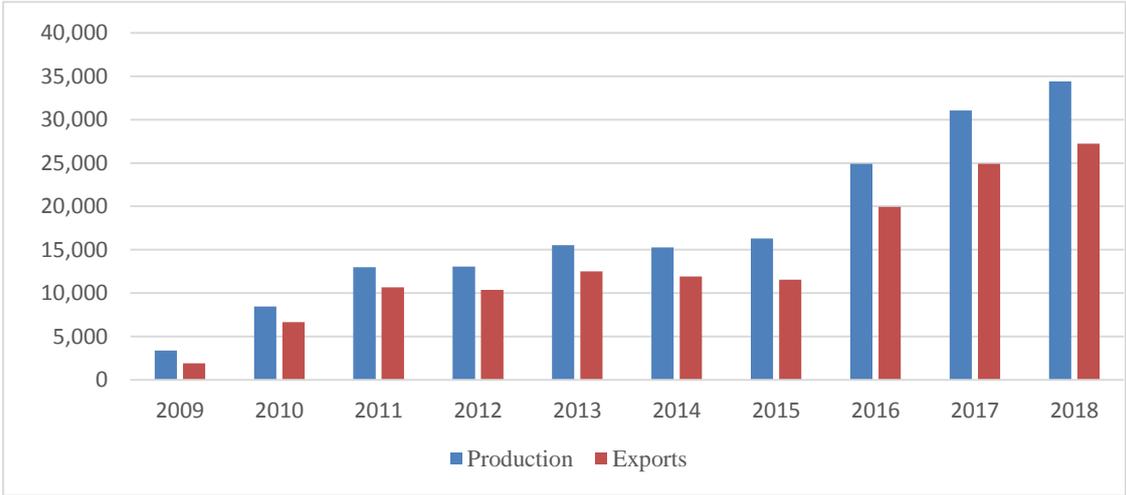
In 2017, Lao PDR had 46 operating hydroelectric power plants, with 54 more planned or under construction. Lao PDR currently has 53 hydropower plants with 7,082 megawatts of installed capacity. However, on July 23, 2018, an auxiliary dam, part of the Xe-Pian Xe-Namnoy hydropower project in the southern province of Attapeu, collapsed, killing at least 39 people and more than 90 are still missing. Following this loss, the Lao PDR government decided to suspend approval of new dams and review all existing and under - construction dams (Lao PDR Ministry of Energy and Mines, 2019).

<sup>1</sup> The primary energy sources of Lao PDR consist of coal, oil, hydro, and biomass. Between 2000 and 2015, the highest increase of the primary energy sources of Lao PDR during the period was coal at 42.2% per year. One of the main reasons was the Hongsa power plant started its production in 2015, resulting in a significant increase of coal supply that year.

A large proportion of existing Lao PDR’s electricity products is produced for exports. Lao’s electricity export accounted for 80% of the total production in 2000. However, it declined and accounted for 68% of the total electricity production in 2015 and 79% in 2018 (see Figure 2).

**Figure 2: Electricity production vs electricity export**

*Unit: GWh*



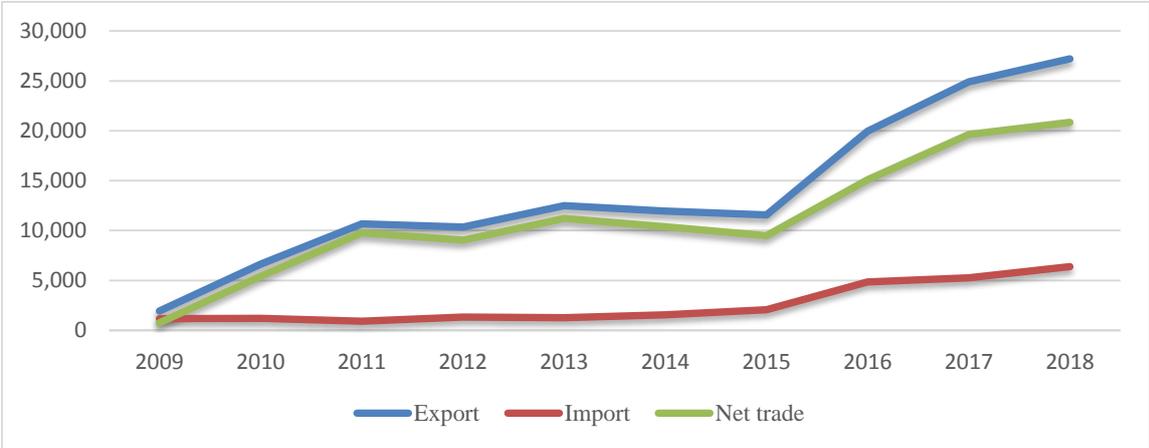
*Source: Ministry of Energy and Mines, Lao PDR (2018); ERIA (2019)*

**4. Electricity exports – imports of Lao PDR**

Lao PDR is a net electricity exporting country (Figure 3). According the report of Ministry of Energy and Mines, during just the first nine months of 2017, Lao PDR exported more than 18,832 GWh of electricity, worth more than US\$975 million, an increase of 25% compared to the samr period in 2016. In 2018, electricity exports reached 27,216 GWh, increased from 1,921 GWh in 2009 (by 14 times), accounting for almost 30 percent of its total exports.

**Figure 3: Lao PDR's Export and Imports of Electricity**

*Unit: GWh*



*Source: Ministry of Energy and Mines, Lao PDR (2018); ERIA (2019)*

The Lao PDR exports most electricity products to the neighboring countries including Thailand, Vietnam and Cambodia. Of which, Thailand is the largest importer of energy from Lao PDR. In December 2007, according to a memorandum of understanding signed by Lao PDR government and Thailand government, the Lao PDR government agreed to sell electricity to Thailand with the amount of 5,000 MW by 2015 and 7,000 MW by the end of 2020 (EPD, 2009). In October 2017, the Ministry of Energy and Mines informed that Lao PDR has agreed to sell 100 MWh of electricity to Malaysia via Thailand's power grid. The country is aiming to export 100 MWh of electricity to Singapore and 200 MWh to Myanmar by 2020 (Angaindrankumar Gnanasagaran, 2018). Lao PDR is looking for to export 15,000 MWh of electricity by 2030, of which 10,000 MWh exported to Thailand, and 5,000 MWh to Viet Nam, Cambodia, and Myanmar collectively (Kouphokham, K., 2016).

The Lao PDR also imports electricity mainly from Thailand, China and Vietnam to meet its domestic demand during the dry season, especially in areas near the border that are not connected to the grid.

### **5. Official goals of the Lao PDR government and policies on hydropower**

In accordance with the national development goal of graduating out from a least-developed country status by 2020, the Lao PDR government has determined plans for the electricity subsector. The official goals to 2020 for the power sector are: (i) expanding access to low-cost, reliable, and sustainable electricity; (ii) for so doing and earning foreign exchange, tapping the country's rich hydropower potential; and (iii) becoming the power battery of the Greater Mekong Sub region (ADB, 2010).

Since 2006, there are many private investors and developers have involved in hydropower business in Lao PDR<sup>1</sup>. Because most of these projects are currently in various stages of development in the country, the government has been forced to improve its policies for individual projects including requirements for feasibility studies, resettlement plans, compensation, environmental impacts, etc. These improvements have been motivated by the multilateral banks (notably Thai and Chinese banks) and international organizations (mainly the WB and ADB), and international NGOs who are interested in the potential negative impacts from hydropower development in Lao PDR (ADB, 2010). However, most of investors have revealed limited commitments to implementing best environmental and social performs. There is often more than one hydropower project established on the same river, coupled with mining and irrigation schemes struggling for the same water, resulting to cumulative impacts on the river basins.

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<sup>1</sup> Regional investors (companies) and financiers (notably Thai and Chinese banks) are the main owners and investors of Independent Power Producer (IPP) hydropower projects in Laos (source: Mattijs Smits (2012), *Hydropower and the Green Economy in Laos: Sustainable Developments*, Wageningen University & Research.

In addition, there has been no systematic planning of the location of the hydropower projects in Lao PDR. Once a company gets the green light from the government to start project implementation process, there are no clear dates associated with it. This means that the Lao PDR's independent power producer strategy is led by private investors and developers as well as Memorandum of Understands (signed by the Lao PDR government and other neighboring governments) rather than by the plans of the government. In other words, there is still lack of a strong institutional, policy and regulatory framework for energy efficiency and sustainability in Lao PRD. As a result, these underway projects do not necessarily correspond to the rural electrification plans, nor does the government have much control over on environmental protection commitments when they start producing electricity (Mattijs Smits, 2012; Global Green Growth Institute, 2017).

## **6. Conclusion and recommendations**

Lao PDR is rich in natural resources such as land, forest and river. The Lao government has identified the development of hydropower as a key way to promote economic growth and reduce poverty. Developing hydropower, however, puts pressure on the environment and local people's livelihoods. In order to achieve the goals of sustainable development, the Lao PDR's government needs to implement a number of solutions as follows:

To achieve sustainable development for future hydropower development, Lao PDR needs to manage its hydropower development to ensure social, economic and environmental sustainability through developing of legal, institutional environment, policy and fiscal framework; strengthening of the institutional capacity of the energy sector; improving knowledge and data management skills; and developing institutional and coordination mechanisms across the government agencies.

Focusing on adjusting energy development plans so that it is in line with the natural conditions, domestic and regional demands; reviewing the implementation of all projects, especially focusing on safety inspections of all dams that have been building; Inspecting and adjusting power production projects to be suitable to the actual needs; Strengthening the management and administration of water flows in each dam to ensure safety for the dam and at the same time to help combat drought and flood.

Obviously, Lao PDR's sustainable management of hydropower can be achieved by maintenance of adequate renewable energy resources for sustainable electric power generation. In particular, the main objective of sustainable management of hydropower is to maintain adequate renewable hydro resources for

sustainable electric power generation, and therefore, to ensure sustainable revenue for the government. In addition, public participation (local communities) in planning and monitoring process of hydroelectric power plants are also needed to contribute to identifying mitigation measures and opportunities for regional development as well as environmental sustainability.

In a country with inadequate human resources and capacity in both public sector and private sectors, Lao PDR needs technical and financial supports by international organizations (WB, ADB), and neighboring countries such as Vietnam to contribute to sustainable development of the natural resources that the country will long be dependent on.

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# OVERVIEW OF VIETNAM'S ENVIRONMENTAL LAWS

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## **Abstract**

*Environmental protection has got much attention and been prioritized in policy making for economic – social development of countries worldwide, including Vietnam. The policies have been gradually institutionalized into law. Environmental Law comes into existence as late in Vietnam as in other developing countries, which could be affirmed the latest legal field. Before Environmental Protection Law was issued as an independent legal document by the National Assembly, other environmental regulations in Vietnam have covered some aspects of environmental protection, to meet the authority's management need without targeting at protecting environmental factors. Regulations on environment or environment-related have been found in many separate legal documents. In order to meet the growing demand for integration, Vietnam needs to continue to reform environmental regulations. The paper analyzes the Vietnamese environmental regulations and practical implementation, thereby giving some suggestions.*

**Keywords:** *Environment, environmental regulations, environmental protection law, sustainable development.*

## **1. Introduction**

The paper uses a number of theoretical foundations such as: The theory of environmental economics, the theory of basic principles regulating the conflict between economic development and environmental protection in a market economy, the theory of sustainable development and views of the Socialist Republic of Vietnam on sustainable socio-economic development, ensuring social progress, building a consistent and transparent legal system. There are environmental laws to meet the integration needs and implement international commitments stemming from international treaties that Vietnam has participated in.

On the basis of assessing the legal regulations and practical implementation, the paper interprets and proposes solutions to improve Vietnam's environmental law.

## **2. Method**

During the study, the author uses many specific methods such as systematic methods, analytical and synthesized methods, comparative law methods, statistical methods, especially analytical methods breaking the law.

### 3. Result

#### 3.1. *The development of Vietnam's environmental laws*

Environmental protection in Vietnam has become the real concern since the 1990s of the 20<sup>th</sup> century with the official institutionalization into the Constitution. Article 17 and Article 29 of the 1992 Constitution are the constitutional bases for the incorporation of environmental protection obligations into other fields of economic life<sup>1</sup>. Articles 43, 53, and 63 of the 2013 Constitution also provide for environmental protection<sup>2</sup>. The appearance of Environmental Protection Law 1993 (later replaced with the Environmental Protection Law 2005 and the Environmental Protection Law 2014), as an independent legal document on environment, continued to confirm the deep concern of Vietnam Government to environmental protection. The regulations on environmental protection are not only found in Environmental Protection Law, but also in other legal documents, governing every human activity which has effects upon on nature, causing certain impacts on living environment. The system of legal documents in environment in Vietnam is categorized into two groups: (i) Group of documents on environmental protection, and (ii) group of documents on exploitation and management of environmental factors (including statutes issued by the National Assembly; Decrees issued by the Government; Circulars, Decisions issued by the specialized Ministries)<sup>3</sup>.

General as well as specialized legal documents in Vietnam impose obligations to protect environment on every relevant individuals and organizations. When mentioning to environmental protection, specialized legal documents normally refer to measures to prevent, to fight, to overcome environmental pollution, environmental degradation, and environmental incident as being regulated in Environmental Protection Law, or apply

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<sup>1</sup> According to Article 17, The 1992 Constitutions: *"The land, forests, rivers and lakes, water supplies, wealth lying underground or coming from the sea, ... and all other property determined by law as belonging to the State, come under ownership by the entire people"*; According to Article 29, The 1992 Constitutions: *"State organs, units of the armed forces, economic and social bodies, and all individuals must abide by State regulations on the rational use of natural wealth and on environmental protection. All acts likely to bring about exhaustion of natural wealth and to cause damage to the environment are strictly forbidden"*.

<sup>2</sup> According to Article 43, The 2013 Constitutions *"Everyone has the right to live in a clean environment and has the obligation to protect the environment"*; According to Article 53, The 2013 Constitutions: *"Land, water resources, mineral resources, resources in the sea and airspace, other natural resources, and property managed or invested in by the State are public property, owned by all the people, and represented and uniformly managed by the State"*; According to Article 63, The 2013 Constitutions: *"1. The State shall adopt environmental protection policies; manage and use natural resources in an efficient and sustainable manner; conserve nature and biodiversity; and take the initiative in preventing and controlling natural disasters and responding to climate change. 2. The State shall encourage all activities for environmental protection and the development and use of new energy and renewable energy. 3. Organizations and individuals that cause environmental pollution, natural resource exhaustion or biodiversity depletion shall be strictly punished and shall rectify and compensate for damage"*.

<sup>3</sup> See Law on Cultural Heritage 2001 (amended in 2009); Law on Minerals 2010; Law on Food Safety 2010; Law on Water Resources 2012; Law on Environmental Protection 2014; Law on Natural Resources and Environment of Sea and Islands 2015, Law on Forestry 2017, Law on Fisheries 2017.

environmental quality standards, environmental impact assessment provided for in implementing documents of the Environmental Protection Law.

From constitutional principles of Constitution 2013, the come out of Environmental Protection Law, the basic changes in environmental protection awareness are manifested through criminalization of conduct of destroying environment under Criminal Code 1999 (amended in 2009)<sup>4</sup> and Criminal Code 2015<sup>5</sup>. It can be concluded that Vietnam has initially established a system of legal documents on environmental protection with the target to contribute into the protection of natural resources, environment purity, and sustainable development.

### ***3.2. Dealing with environmental violation exemplified with a specific case***

Setting up an environmental court in Vietnam is quite a new question. This originates from the aversion of litigation of the majority of Vietnamese people. Conflicts, disagreements are usually resolved by negotiation or mediation. Legal responsibilities impose on breach of environmental law depend on the level of such breach and include: (i) Administrative responsibility; (ii) Civil liability; (iii) Disciplinary responsibility; (iv) Criminal responsibility. Accordingly, it is popular to apply administrative sanction to deal with environmental breaches. Vietnam Government has issued quite many Decrees on administrative sanctions for breaches on environment protection, exploitation of natural resources, environmental hygiene, and destruction of heritages... However, the application thereof is not thorough (due to lacking of mechanism to ensure the enforcement of law; no effective measures in dealing with violations of environmental law - especially in dealing with administrative violations);

The case of Vedan Corporation discharging waste water to Thi Vai River is a typical example. This is a case of environmental pollution which was jointly uncovered by the Environmental Policeman Agency - the Ministry of Police and the Ministry of Natural Resources and Environment in September 2008. The installation of the waste exhausting system by Vedan is a serious violation of environmental protecting regulations. The investigation has published 10 violations by Vedan, including: exceeding waste water discharges standard, not fully implementing environmental monitoring, not registering the commitment to protect the environment, not doing the report on environmental impact assessment, not complying with regulations on hazardous waste management... A weak administrative sanction of 267.5 million VND<sup>6</sup> imposed on these violations shall lead

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<sup>4</sup> Chapter XVII, from Art. 182 to Art. 191a.

<sup>5</sup> Chapter XIX, from Art. 235 to Art. 246.

<sup>6</sup> Chief Inspector of Ministry of Natural Resources and Environment made decision on sanction against Vedan's administrative violations in the field of environmental protection with the amount of 267,5 million VND, collecting environmental protection fee arrears of more than 127 billion VND

many other companies to cause serious environmental pollution and accept the sanctions instead of investing in waste water treatment systems because of manifold high cost in operating these systems. This rooted from the application of Decree 81 in 2006 by the Government on administrative sanctions for violations against the environmental protection. Accordingly, the highest fine imposed on a violation is only 70 million VND. After this case, Decree 81 was replaced by Decree 117 in 2009, Decree 179 in 2014 and Decree 155 in 2016 on dealing with violations against the environmental protection, providing the administrative sanction up to 2 billion VND<sup>7</sup>.

Vietnamese Prime Minister had urgently and decisively directed the functional bodies to implement the measures in dealing with environmental protecting violations towards Vedan Corporation. However, the case had continued to 2011 with the issue of compensation by Vedan to residents along Thi Vai River. This was a long-lasting environmental dispute due to the disagreement of the parties on the value of damages as well as the joint responsibility by Vedan. 220 billion VND compensation by Vedan to residents in Dong Nai, Ba Ria - Vung Tau and Ho Chi Minh City had reflected the intervention of the authorities and the pressure by the mass media instead of voluntary agreement by Vedan.

In Vietnam, environmental disputes are settled by one of three methods: (i) Negotiation, mediation; (ii) Court hearing; (iii) Arbitration, among which negotiation, mediation are commonly referred. There is no separate procedure for environmental cases but trials are done mainly by civil proceedings in Civil Court. Criminal responsibility by Vedan in the above-mentioned case has not been addressed, due to the Vietnam legislation, i.e. no criminal responsibility is applied for legal entities (enterprises) but for individuals (specific person) only. This is an issue debated among legal researchers before the adoption of the Criminal Code 2015.

### ***3.3. Management authorities on environment in Vietnam***

Organizational structure and environmental management apparatus in most countries around the world may be one among four following forms: (i) Environmental Protection Authority is an independent ministry; (ii) Environmental Protection Authority is a ministerial body or under the Government Office; (iii) Environmental Protection Authority under a multifunctional ministry; (iv) no individually specialized agencies for Environment, hence environmental management functions belonging to some related ministries. In Vietnam, the Government is the consolidating management authority on environment. The

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<sup>7</sup> Decree No. 179/2013/ND-CP dated November 14, 2013 on the sanction of administrative violations in the domain of environmental protection, Decree No. 155/2016/NĐ-CP dated November 18, 2016 on the sanction of administrative violations in the domain of environmental protection, being effective on February, 01, 2017 and replacing Decree 179/2013/NĐ-CP).

environmental management function is assigned to many different ministries (such as Ministry of Science and Technology, Ministry of Agriculture and Rural Development, Ministry of Health, etc.). Ministry of Natural Resources and Environment is the Government body directly under the Government, performing the function of state management of land, water resources; mineral and geological resources; environment; meteorology, hydrology; surveying, mapping; general and consolidating management of the sea and islands. Despite the fact that the Ministry of Natural Resources and Environment is considered the body taking primary responsibility for performing the state management function on environment, other Ministries are also in the position of management authority (for example, Ministry of Agriculture and Rural Development manages forest and fisheries resources; Ministry of Culture, Sports and Tourism takes care of Heritages; Ministry of Science and Technology manages standardization...). This leads to the dispersion of management responsibilities and the overlapping in jurisdiction among the competent authorities.

The fact that many specialized ministries perform or coordinate to provide guidelines for the implementation of legal documents in environmental protection results in the overlapping, conflicts in functions and duties or even the status of “tranh công đồ lĩi” (“*Everybody's business is nobody's business*”) in applying law of environmental protection to real life. Even though the law of environmental protection is formed with the reform process of the country, many issues in its management model are not asymptotic to the advanced model of environmental management. In fact, it is still a traditional state management model, in which the enforcement of the law of environment protection has burdened the bureaucratic administrative based government. According to this traditional management model of Vietnam, one ministry not only plays a key role in managing one specialized area but also shares its functions and cooperates with the other ministries to manage other fields. That model is also applied to the local levels, specifically provincial and district levels. The conflicts and overlaps in functions and duties in addition to the lack of coordination are among the challenges arisen from this model. Furthermore, the assurance of unanimity in the interpretation of law of environmental protection by sectors, agencies and localities throughout the country also challenges the performance of this model. Besides, the transparency, explanation accountability as well as the public participation in these authorities' activities should be improved. The self-government and civil society play a quite blur role in guaranteeing the common administrative targets.

From the international experience, environmental issues could be settled effectively not only by state power but also the strength of the whole society, especially the 3 main pillars: the government, the market and the civil society

(including civil society organizations and the communities). However, many legal issues and enforcement measures need to be improved for promoting the synergy of all 3 pillars. For instance, it is necessary to change the mechanism for the communities and civil society organizations to effectively supervise the enterprises' observance of the environmental protection laws as well as to file lawsuits against enterprises to stop their violations and ask for compensation for damages caused. New mechanism to publicize the observance of law (especially the violation of the environmental legislation by enterprises) should be more transparent. The data should be announced publicly and nationally connected to facilitate the update, monitoring and evaluation by the public.

### ***3.4. Participation of Vietnam in international environmental treaties***

In recent years, Vietnam has attempted to implement its obligations as a member of the international environmental treaties, specifically:

#### *- Carrying out legislative activities:*

Before and after participating in international environmental treaties, Vietnam has built a lot of legal documents to protect its environment and, contribute to the implementation of international environment treaties. These documents have created a legal framework to enforce environmental protection activities in Vietnam, implement the international environmental treaties as well as contribute to the global environmental protection. However, a number of obligations arising from the international environmental treaties are not fully stipulated in current legal documents.

#### *- Planning and implementing the protection of environment and natural resources:*

Vietnam has built and implemented programs, short-term and long-term plans to enforce the protection of its environment and natural resources. After participating in the international environmental conventions, Vietnam has adopted the Action Plan on biological diversity in 1995, Action Plan for the implementation of the Framework Convention on Climate Change, National Strategy on Environmental Protection of period 2001-2010... In addition, Vietnam has also established a system of nature conservation areas to protect biological diversity.

#### *- Establishing agencies to implement international environment treaties:*

After participating in these international environment treaties, Vietnam has defined its state agencies as "Vietnam agencies" for specific conventions, eg, Forest Protection Department (FPD) under the Ministry of Agriculture & Rural Development (MARD) is the agency for the Biological Diversity Convention and CITES, Environment Protection Department (EPD) under the Ministry of Natural Resources and Environment (MONRE) is the agency for Basel Convention, etc.

Through legal system, management authorities are given powers to manage the environment and natural resources, contributing to implementation of international treaties on the environment.

*Up to now, Vietnam has become member of about 20 international environment treaties, namely the Convention on the Law of the Sea 1982, Vienna Convention for the Protection of the Ozone Layer 1985, United Nations Framework Convention on Climate Change 1992, The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal (Basel Convention 1989), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1973), The Convention on Wetlands of International Importance, especially as Waterfowl Habitat (RAMSAR Convention 1971), The International Convention for the Prevention of Pollution from Ships (1973 MARPOL Convention), Convention on Biological Diversity 1992, Convention concerning the Protection of the World Cultural and Natural Heritage 1972,...*

Besides, Vietnam has also actively participated in the other international projects and institutions on biological diversity such as the Advisory Board of Science and Technology of the Convention on Biological Diversity 1992, Project on “Reversing Environmental Degradation Trends in the South China Sea and the Gulf of Thailand (SCS), The *Mekong Wetlands Biodiversity Conservation and Sustainable Use Program* (MWBP), Vietnam - Laos - Cambodia biodiversity Forum, Global Tigers Forum (GTF), etc. In addition to the above agreements, Vietnam has also participated in regional and sub-regional forums and organizations, especially treaties of ASEAN, including agreements relating to environment protection in general and nature conservation and biodiversity in particular. Within the ASEAN’s framework of environmental cooperation, Vietnam also participated in other institutions such as the *ASEAN Ministerial Meeting on the Environment (AMME)*, *ASEAN Senior Officials on Environment (ASOEN)* and the working groups of ASOEN on the following areas: multilateral environmental treaties and conventions, marine environment and coastal areas, nature conservation and biodiversity, sustainable development of urban areas , integrated management of water resources and the *ASEAN Haze Technical Task Force (HTTF)*. Vietnam is also an active member of *ASEAN Regional Centre for Biodiversity Conservation (ARCBC)* based in the Philippines.

### ***3.5. Review on the Vietnam legal system on environment and recommendations***

*Firstly*, the legal system on environment in Vietnam has grown in both substance and procedures, covering almost all environmental components. Legal documents on environmental protection have specified functions, duties and powers

of the management authorities on the environment, as well as basic rights and obligations of individuals and organizations in environmental exploitation, use and protection. The system of environmental standards has been promulgated as legal basis for determining legal responsibilities and obligations of stakeholders in environmental protection. Legal documents have focused on global aspects of environmental problems, clearly identifying that environmental protection is the obligation of not only the Government but also the entire population. However, legal documents on environment with regard to each environmental factor or governance of human activities creating impact on the environment have not been issued concurrently and consistently.

*Secondly*, the legal provisions on environmental protection cover relatively all elements, content of which has promptly and fully spelt out the obligations of international environmental protection that Vietnam has committed. However, the mechanism of enforcement of national laws and international commitments are not effective. Generally, the sanctions are not appropriate and strong enough for punishment and deterrence against violations. In addition to active promulgation of legal documents relating to environmental protection, Vietnam has gradually joined the international conventions on environmental protection. The ratification of these conventions is an important prerequisite for the integration of Vietnamese legal system into the international common standards and rules governing human activities creating impact on nature and environment.

*Thirdly*, it is a right decision, yet thorough to have the functions of state management on environment and natural resources assigned to the Ministry of Natural Resources and Environment. The management of natural resources have been assigned to several ministries, sectors while the coordination mechanism for state management is not concurrent and efficient

The building and improving the legal framework on environment should be based on an overall evaluation of legal policies relating to the environment and environmental protection (including the consolidation and analysis of strategies, guidelines, documents, policies and the scientific proposals to perfect the legal system on the environment and environmental protection).

To meet the above specific requirements, the following solutions must be reached, including:

*Firstly*, the establishment of legal framework on the environment in Vietnam must be stemmed from the overall policies and national orientations of socio-economic development, which is determined in two ways: (i) amending and supplementing the existing laws in order to overcome the inconsistency, unspecific, unclear in the

governance of social relations in environmental protection; and (ii) promulgating new regulations to cover other social relations which have not been governed yet

*Secondly*, the trouble of governing scope and actors of environmental legislations must be solved thoroughly. The former must be associated with views on sustainable development, environmental integrity, prioritization of both the prevention and remediation, environmental improvement and conservation of natural resources. The latter should be covered in a large scale, not only in Vietnam, but also in the global and regional interests, not only the State as the main actor taking charge of environmental protection but also many others such as public authorities, those extracting and using environmental resources.

*Thirdly*, comply with the principles of environmental law. Referring to any legal area, it often refers to principle issues. Environmental law is not outside this approach. Completing the Vietnamese law on the environment must comply with the principles of environmental law. The principle of state recognition and protection of human rights to live in a healthy environment requires the fulfillment of environmental law provisions associated with ensuring the right to live in an unpolluted environment. The precautionary principle poses a proactive requirement in risk estimation. The environmental principle is a unified whole that requires the assignment and coordination with the state management agencies on the environment in a synchronous way. The principle of sustainable development is the combination of economic and environmental objectives and ensuring social progress. The principle of polluters must pay for polluters to bear the costs of remedying and treating environmental pollution.

*Fourthly*, international cooperation on environmental should be strengthened. Environmental protection is a global issue, therefore, it is a need to strengthen international cooperation in this area, particularly international cooperation on legislation. Besides, it is necessary to focus and look for an appropriate mechanism to incorporate international environmental treaties which Vietnam has signed into the national legal system. Moreover, it's also essential to determine legal effect of the processes in the international treaties in order to decide which provisions will be directly applied and which one should be incorporated into national legislations. However, the basic issue is to develop a mechanism to ensure effective implementation of international commitments on the environment in Vietnam.

#### **4. Conclusion**

Through the research results, the author concluded that Vietnam's environmental law should continue to be perfected. This perfection is based on the inheritance of previous laws and experiences from Vietnam's current laws and

development conditions. The development of the legal framework on environment in Vietnam needs to be considered in the overall national policies and orientations of the country's socio-economic development and identified in two directions: fix changing and supplementing existing documents to overcome the inconsistency, non-specific, unspecified in adjusting social relations in the field of environmental protection; Issuing new documents to adjust social relations in the field of environmental protection has not been adjusted so far. Specific amendments include increasing administrative penalties for violations of environmental laws, building a unified governmental stewardship of the environment, proceeding to establish an environmental court, continued effective implementation of international environmental treaties in Vietnam participated. Besides, the mechanism to ensure enforcement also changes accordingly. Because of how strict the law is, it is not effective if it is not implemented well.

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# IMPACTS OF FOREIGN DIRECT INVESTMENT ON VIETNAM'S ECONOMY IN A RELATION TO NATURAL ENVIRONMENT

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## **Abstract**

*Recently, foreign direct investment (FDI) has been a vital contributor to Vietnamese national economy. A rapid increase of FDI flows has brought various benefits to the economy such as increasing GDP growth rate, creating jobs, increasing export value,... However, the rapid increase of FDI flows in Vietnam recently has also been leading to many environmental issues that requires more society's focuses on to figure out suitable solutions. This paper assesses the role of FDI in Vietnam's economy in a relation with the environment problems through answering two research questions: What are the economic effects of FDI to Vietnam's economy? And How does FDI related to environmental issues in Vietnam? Qualitative research method was employed to analyze secondary data sources to examine these research questions. Basing on research findings, this paper proposes several recommendations to attract more FDI and to ensure environment protection.*

**Keywords:** *Foreign direct investment, Vietnam, Pollution, Environment.*

## **1. Introduction**

Along with the deeper economic integration into the world economy, Vietnam has signed a plenty of economic agreements, and established free trade relationships with more than 57 countries over the world. The FDI, therefore has been increasing recently. There has been no argument for economic contributions of FDI to Vietnam, but a focus trend of FDI attraction for growth targets based on industries seems to increase a capable of large polluting, over exploitation of natural resources without paying attention to environmental protection of both state management and FDI enterprises. The depletion of natural resources, air pollution, water pollution, environmental degradation, biodiversity reduction in Vietnam nowadays is increasing seriously. Consequently, these environment issues will affect negatively back to the economic growth of Vietnam. According to the forecast of the World Bank, due to the impacts of environmental pollution, Vietnam's GDP will be fell 2.5% each year (Doan Tranh & Nguyen Thi Hoa, 2016). It therefore needs more studies on the impacts of FDI

on the economy and environment in Vietnam to suggest effective strategies for attracting FDI. This study thus aims at investigation effects of FDI to Vietnam with economic and environmental aspects. It answers two research questions: What are the economic effects of FDI to Vietnam's economy? And How does FDI related to environmental issues in Vietnam?

## **2. Literature review**

### ***Definition of FDI***

According to the definition given by the UNCTAD, "FDI is an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in a given economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)" (UNCTAD, 2007: 245).

FDI occurs when an investor in one country acquires an asset in another country with the intent to manage that asset. The desire to manage that asset distinguishes FDI from other portfolio investment, such as investing in foreign stocks, bonds and other financial instruments<sup>1</sup>. FDI is an activity, which is normally run by Multinational Corporations (MNCs), and FDI is considered as the main motivation of their activity. The FDI dynamic involves the transfer of various elements (financial capital, technology, labor skills, etc.) from a country (the source of the investment) to another (the destination or recipient of the investment). This process implies the rise of costs and benefits for the countries involved.

### ***Effects of FDI***

According to the review by Moosa (2002), the effects of FDI on an investment host country can be observed on four following aspects: economic, political, social and a hidden one, environmental. The social issue mainly concerns the changes of cultural and behavioral as a consequence of a sort of "contamination" resulting from the contact between the foreign and local entities. The political effects refer to the question of national sovereignty, particularly true in Less Developed Countries (LDCs), because the management of MNCs can be a threat for the national political autonomy of the host country. In terms of economic effects, they are distinguished in macro and micro effects as shown in Figure 1.

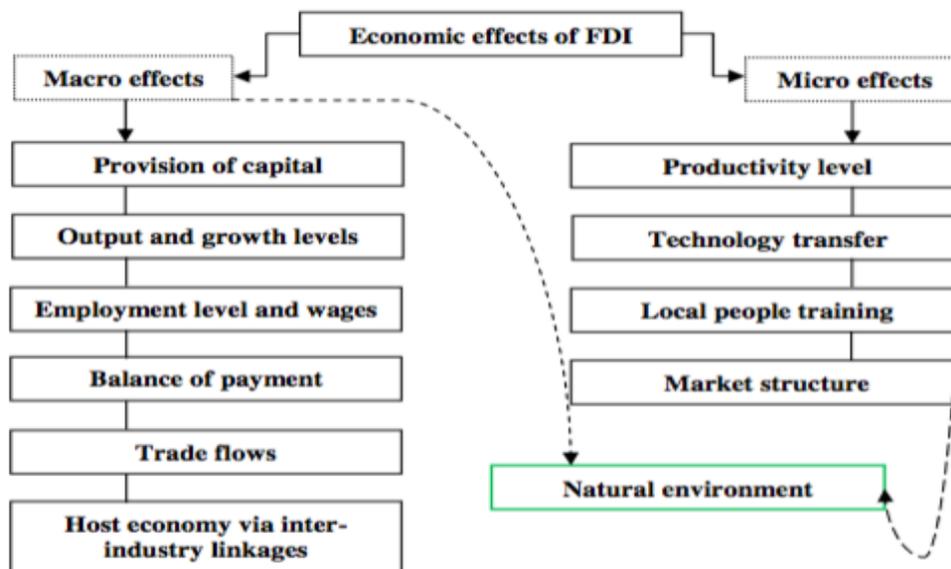
In terms of economic impacts, (1) FDI promotes economic growth and increases the size of the economy and contributes greatly to economic restructuring. FDI capital increases the scale of social investment and promotes economic

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<sup>1</sup> (1996), WTO, "Trade and foreign direct investment,  
[https://www.wto.org/English/news\\_e/pres96\\_e/pr057\\_e.htm](https://www.wto.org/English/news_e/pres96_e/pr057_e.htm)

restructuring towards industrialization. The fact has proved that the proportion of industrial sector is increasing due to the large contribution of FDI, especially in manufacturing. (2) Through foreign direct investment, many new sectors and industries have emerged such as oil and gas, information technology, chemicals, automobiles, motorcycles, steel, electronics and consumer electronics, industrial processing agricultural products, footwear, textiles ... FDI helps quickly promote the technical - technological level in many economic sectors, contributing to increase labor productivity in these sectors and increase the its proportion in the economy. (3) FDI creates millions of direct jobs and indirect jobs, including tens of thousands of highly qualified engineers, managers and skilled workers with increasing incomes as well as bringing advanced labor ways, business and management. In addition, foreign investment plays an important role in improving the quality of labor through the spillover effect for stakeholders. (4) FDI promotes exports and improves the trade balance. FDI contributed significantly to boosting Vietnam's exports through export growth, product diversification and the diversification of export markets. Thereby, FDI also contributes to reducing pressure on exchange rates and improving the balance of payments. (5) FDI also contributes to increasing state budget revenues and causing positive spillover effects on domestic enterprises through backward linkages. Through production linkages between FDI enterprises and domestic enterprises, domestic enterprises have the opportunity to access technology transfer activities. Besides, through the relationship with FDI enterprises, domestic enterprises apply similar manufacturing technologies to produce alternative products or services and other products or services to avoid competition. At the same time, it has the effect of creating other industries and services in the country to support the operation of FDI enterprises (CIEM, 2006)

**Figure 1: FDI, economic issues and natural environment**



*Source: built and adapted from Moosa's (2002) discussion.*

In terms of the effects of FDI on the host country's environment, it can be said that FDI may boost economic growth, generate structural efficiency together with other positive effects, it can also generate environmental degradation as well (CIEM, 2006). There exists a simple hypothesis that foreign investors bring new technologies to receiving countries, and this would enable receiving countries to implement environmental protection projects and actions. In theory, the economic expansion driven by FDI may also generate a generalized improvement in the environmental sphere. However, the fact is that FDI can spread industrial activity, stimulate the production and consumption of industrial polluting goods, all this resulting in an increase of the sources and forms of pollution. For instance, FDI in resource-intensive industry sector are normally expected to be detrimental and negative to the environment. Additionally, we have also learned that FDI often goes with a "hidden aspect", which is not always taken into proper consideration. According to some of the last available reports of the United Nations Conference on Trade and Development (UNCTAD), it can be appreciated that FDI has always traditionally and significantly relied on the use of natural resources (especially in agriculture, mineral extraction, fuel and chemical production). It can be observed that a relevant amount of FDI is still priority to developing countries, especially those sectors primarily based on the use of natural resources. The fact is that, in the last decades, the environmental degradation has also been increasing and accelerating, which are widely referred to in a number of scientific reports and studies. The global warming generated by greenhouse gas emissions seems to be just the result of a variegated series of environmental problems from deforestation and biodiversity loss to ice melting and the change in sea levels (UNEP, 2007). This environmental degradation is recognized and claimed to be the result of widespread economic activities worldwide. It is also recognized that FDI partly contributes to this significant raises. It leads to some concerns on the relationship between FDI and environmental effects, which is one of crucial factors in identifying and implementing appropriate governmental policies.

Indeed, there exist a two-way linkage between FDI and environment: the impact of environmental standards on the location of firms' investment decisions and the environmental effects of international countries' competition for FDI... The first group basically tries to understand whether the existence of different environmental regulations and standards can be a reason for firms relocating their activity. The latter group analyses the FDI - environment nexus which occurs when countries modify

their environmental regulatory systems by lowering environmental standards to attract more FDI or by increasing them to gain a competitive advantage in the longer term. Those works deal with various phenomena associated with theories, whose existence is based on the existence of the following hypothesis: 1) “pollution havens”; 2) “race to the bottom”.

Associate with the “pollution haven” hypothesis, investors relocate their industries in those countries, which have weaker or even absent environmental regulation, thus gaining the maximum advantage from producing at the lowest cost in light of environmental regulatory requirements. The search for pollution havens has widened the debate and has diversified the literature on the FDI-environment relationship. In fact, the published scientific works are still unable to empirically show systematic evidence of the existence of pollution havens, while reaching contradictory results.

Studies indicate evidence supporting the pollution havens hypothesis include the following studies. According to U.S.Congress (1991), a number of manufacturers in the wood furniture industry moved from the region of Los Angeles to Mexico between 1988 and 1990, because here they could use their solvents without considering any air pollution constraint (cited in WWF 1998). By using a statistical test to measure the effect of tighter environmental regulations on financial capital movement, a study which analyzed the FDI outflow from various high and less-polluting US industries (chemicals, primary metals, electrical machinery, non-electrical machinery, food products and transportation equipment) to seven developing and 15 developed countries between 1985 and 1990, found a significantly higher and positive correlation between those host countries with a more lenient environmental regulation and the US outflow of FDI.

The similar evidences which support the existence of the pollution heavens hypothesis for highly pollutant industrial sector such ass chemical, primary metals sector, printing, dyeing, electroplating, even pesticides production were observed and reported by Xing & Kolstad (2002) and some works about FDI flow in China by Guoming et Al (1999) and Yofou (1995). In further researches, among his various analysis focuses and conclusions, He (2006) provides convincing evidence of the existence of the pollution haven hypothesis. He observed that the location and composition of the inward stock of Chinese FDI were highly motivated by pursuing a “production platform” with lower compliance costs of pollution regulation. In the same direction, another study by Spatareanu (2007) observed how firms in industries

with higher abatement costs tend to invest more abroad to avoid high environmental compliance costs.

Meanwhile, one of the earliest works on this issue was an investigation to assess the relationship between the location of heavy-polluting industries in the United States and the dynamic of trade and investment data. As the result, no evidence confirming the existence of firms that moved their investments to pollution havens in less developed countries was found in the study. Then, this evidence was confirmed even for the case of the mineral processing sector, whose average FDI flow was much higher in developed than in developing countries by Leonard in 1988 which was cited in OECD in 1997. In 1990, according to McConnell & Schwab (1990), a study focusing on how regional differences in environmental regulation can affect the car industry location decision did not reach any significant evidence with the exception of those countries characterized by heavy incompliance with air quality standards (cited in Gray, 2002). At the same time, another survey of Sanchez found that 26% of Maquiladora operators in Mexicali cited Mexico's lax environmental enforcement as an important reason for their location there (cited in WWF, 1998). A milestone often recalled in the literature refers to an analysis of the United States Direct Investment Abroad (USDIA) data in 1992. In this work, it is observed how in the considered year developing and transitional economies received 45% of the total flow. However, a very small quota of this flow (5%) went to environmentally sensitive industries, such as those related to petroleum and gas, primary or fabricated metals, and chemical sectors, while a more significant proportion (24%) reached already developed countries with tighter environmental standards. Hence, the conclusion supported the non-existence of the evidence that advanced countries export their “dirty” industries to less developed economies (Repetto, 1995). In a recent analysis carried out to understand whether or not ASEAN countries can be considered pollution havens for Japanese high-polluting industries, Elliot and Shimamoto (2008) provides indication of the non-existence of the pollution havens hypothesis.

The "race to the bottom" hypothesis can be considered as a subset of the “pollution haven” phenomenon. If the "pollution haven" hypothesis exists, then countries might think that by lowering their environmental standards they would result more competitive in FDI attraction. And in fact, the "race to the bottom" phenomenon happens when a country's government undertakes positive actions to lower its environmental standards with the final aim of bringing in FDI.

According to Revesz (1992), some empirical evidence had highlighted that it seems unlikely that countries purposely proceed to lower their environmental standards. In addition, the existence of some factors playing the role of countervailing forces in the race to the bottom should be considered. These might be basically related to the pressure arising from local communities, whose reasoning may follow the "Not in My Backyard" principle (Swire, 1996 cited in OECD, 2002) and a number of other varying factors among which education and income levels can be seen among the most relevant aspects (Zarsky, 1999).

Another study empirically testing "the race to the bottom" hypothesis focuses on the trends of air quality – measured in terms of suspended particulate matter – in the United States and in the three largest recipient countries of FDI in the developing world (Brazil, China and Mexico). The result shows how the globalization era has brought about a decline of the considered pollutant in major cities of all analyzed countries, thus contradicting the theoretical foundation of the “race to the bottom” hypothesis. However, there also exists evidence confirming the existence of the “race to the bottom” hypothesis, which can be observed, especially with regard to case studies from specific sectors. In developing countries with abundant natural resources, where the regulatory experience may be very limited, a preference for foreign investment is often shown. In Zimbabwe, for example, the dominant presence of foreign investors in the mining sector is explained by the national “Mines and Mineral Act” which takes over any other regulation including those related to norms of environmental protection (Gray, 2002). Similar situations can also be observed in Indonesia and Papua New Guinea where, especially in the mining sector, governments have considerably relaxed environmental controls over mining operations in a range of areas. As is referred, in these two countries all mining operations are run under special conditions which require minimal or no regulation thus permitting an extensive detrimental effect on the environment. In Indonesia, mining corporations operate under special Contracts of Work (COW) are being exempt from respecting environmental laws. In Papua New Guinea, Indonesia and the Philippines, governments have provided general or specific exemptions from existing environmental and other laws with the aim of attracting higher flows of FDI (Mabey & McNally, 1998). Some further observations in Canada and Germany also show that governments have simplified their environmental regulation by relaxing its enforcement, and implementing a more business-friendly context for investors (Esty & Geradin, 1998). Another analysis supporting the existence of the hypothesis was about the Costa Rica case study, where

the government actively pursued investment projects in particular polluting sectors by skipping legal requirements, also including environmental aspects.

The impacts of FDI on host country are always expressed in the international literature and especially in those works published by international organizations such as the OECD. It must be highlighted, however, that the issue of the economic effects of FDI has very often failed to consider those associated to the natural environment. It seems that the environmental reflection within the FDI issue has generally suffered from a lack of adequate attention and has often been left aside and unconsidered. Only a few people paid attention to the relationship between international capital flow and the environment. Their aim was to understand the extent to which the huge amount of international finance flown to the countries of that developing region destabilized the ecological foundations of these emerging economies.

### **3. Research method**

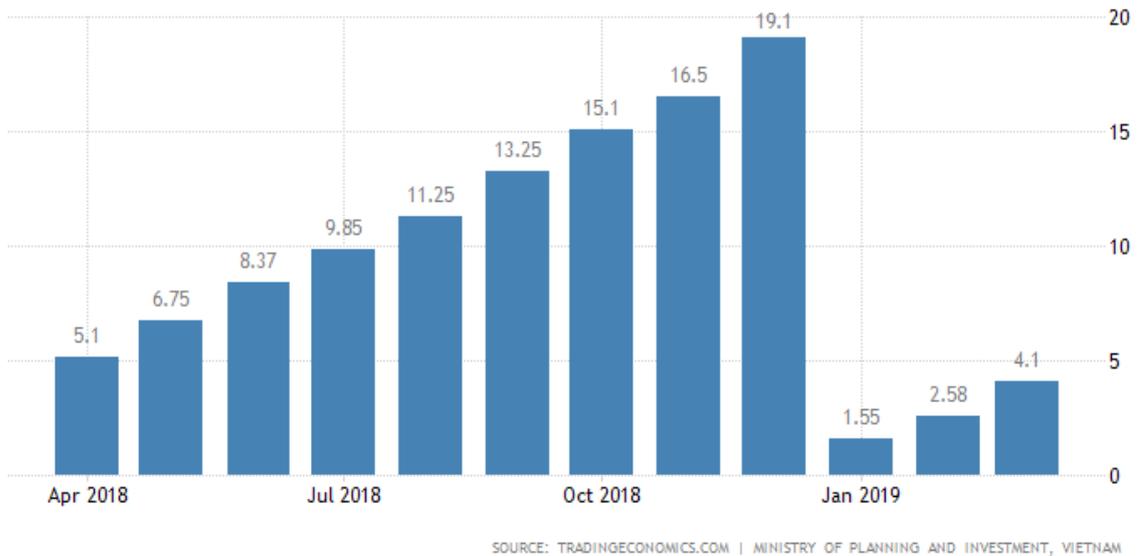
This study majorly employs qualitative research methods that use secondary data sources. By analyzing related data from GSO of Vietnam, information about FDI released via government websites, and previous research outcomes. A technique used to analyze the secondary data collected is content analysis that helps to figure out common themes of FDI impacting Vietnam's economy and environment. Through this content analysis, this study attempts to answer the two research questions and then provide a comprehensive picture about FDI and its economic and environmental effects on Vietnam.

### **4. FDI and natural environment in Vietnam**

#### ***Contributions of FDI to Vietnam economy***

Foreign direct investment into Vietnam rose by 6.2 percent year-on-year to USD 4.12 billion in the first three months of 2019. In addition, FDI pledges for new projects, increased capital and stake acquisitions - which indicate the size of future FDI disbursements - surged 86.2 percent from a year earlier in the January-March period to USD 10.8 billion. The manufacturing and processing industry is set to receive the largest amount of investment (77.7 percent of total pledges), followed by real estate (7.2 percent) and professional activities, science and technology (3.5 percent). Hong Kong was the biggest source of FDI pledges in the first three months of 2019 (47 percent of total pledges), followed by Singapore (13.5 percent) and South Korea (12.2 percent). Foreign Direct Investment in Vietnam averaged 6.31 USD Billion from 1991 until 2019, reaching an all-time high of 19.10 USD Billion in December of 2018 and a record low of 0.40 USD Billion in January of 2010.

**Graph 1: FDI in Vietnam 2018, 2019**



FDI has contributed significantly to the economic achievements of Vietnam recently. The contribution of FDI to GDP growth rate has been high since 2000s, especially in the period 2010-2014, this contribution was 24.4% to Vietnam's GDP growth rate (Table 1). The FDI sector plays an important role in the development of investment capital in Vietnam. In the 2005-2015 period, FDI capital accounted for 22.8% of the total social investment capital (GSO, 2016). Total realized social investment capital in 2017 at current prices reached an estimate of 1667.4 trillion dong, up 12.1% over 2016 and equaling 33.3% of GDP, of which the State sector's capital gained 594.9 trillion dong, accounting for 35.7% of the total capital and increasing by 6.7% from the previous year; the non-State sector's capital obtained 676.3 trillion dong, taking 40.5% and growing by 16.8%; the FDI sector's capital attained 396.2 trillion dong, representing 23.8% and moving up by 12.8% (GSO, 2018).

From the beginning of the year to December 20, 2017, FDI attracted 2591 newly licensed projects with the total registered capital of US\$ 21.3 billion, up 3.5% in the number of projects and 42.3% in the registered capital against the similar period in 2016. Besides, there were 1188 times of license-granted projects from previous years registered to adjust investment capital with the additional capital of US\$ 8.4 billion, a rise of 49.2% from the same period last year, bringing the total of newly registered capital and additional capital in 2017 to US\$ 29.7 billion, increasing by 44.2%. Realized FDI capital in 2017 was estimated to reach US\$ 17.5 billion, going up by 10.8% compared with that in 2016. In 2017, there were 5002 times of capital contribution and share purchase of foreign investors with a total capital contribution of US\$ 6.2 billion, moving up by 45.1% over 2016 (GSO, 2018).

Foreign investment plays an important role in creating and improving labor quality through labor spillover effects for stakeholders. In the period from 1988-2014, the FDI sector generated more than 2.3 millions of direct jobs and millions of indirect jobs, including tens of thousands of highly qualified engineers, managers, skilled workers, with increasing income, labor and business practices.

**Table 1: Contribution of FDI to Vietnam's GDP growth rate**

Sector	2010	2011	2012	2013	2014	2015
State- owned enterprises	1.58	1.29	1.67	1.38	1.16	1.54
Private enterprises	3.14	3.26	2.19	2.06	2.53	2.73
FDI enterprises	1.41	0.99	0.86	1.36	1.51	1.94

*Source: GSO of Vietnam, 2016*

The FDI sector is the key driver for Vietnam's export growth. The FDI sector contributed to trade surplus in the period of 2000-2014 that Vietnam reduced import surplus due to the trade surplus of FDI enterprises. Thereby it reduced the pressure on the exchange rate improving national accounts and the national payments balance. Another direct economic impact of FDI is the contribution to the state budget. Contribution to the state budget of FDI enterprises increased gradually over time. If in 2005, the proportion of state budget contribution is 8.4%, then by 2010 it will increase to 11% and 2014 to 13.9% (GSO, 2016).

Through foreign direct investment, many new sectors and industries have emerged such as oil and gas, information technology, chemicals, automobiles, motorcycles, steel, electronics and consumer electronics, industrial processing agricultural products, footwear, textiles ... FDI helps quickly promote the technical - technological level in many economic sectors, contributing to increasing labor productivity in these sectors and increasing its proportion in economy.

### ***Impacts of FDI on natural environment in Vietnam***

Along with the positive contributions to the economy, FDI sector has been under debates on its negative impacts on the natural environment. Recently, there are a few FDI companies complying with the government requirements of environment protection. Data from Foreign Investment Department on the date 02/20/2016, it had 28 projects in the field of water supply and waste treatment investment in Vietnam (only 0.2% of all projects). The total registered capital of 28 projects is US\$ 710,084,540 out of a total investment of US\$ 199,703,267,764 of all projects in Vietnam, accounting for 0.36% (Dantri, 2016). Many serious environmental pollution cases of FDI projects that has caused bad consequences for the ecosystem and reduced sustainability of economic growth. For example, the Project Formosa in Ha Tinh causes

marine environmental incidents in 2016; Vedan Vietnam was found causing "death" of Thi Vai river; Vietnam Miwon was sanctioned for over discharging wastewater allowable technical regulations; Vietnam Mei Sheng Textiles Co., Ltd. was sealed its dyeing house for illegal construction and discharge emissions polluting the environment or Lee & Man Paper Factory is found to pollute the environment.

There have been various causes considered for these environment issues. Currently, Vietnam has no system of tracking and updating statistics situation of waste, wastewater treatment, environmental protection measures, as well as stub Environmental pollution levels of FDI enterprises (including businesses) Industry, facility, individual in the country). Therefore, it is not possible to evaluate completely on the environmental impact of the FDI sector in current conditions (CIEM, 2017).

It can be seen that Vietnam's low environmental standards are an important factor investment decision of foreign investors. Dinh Duc Truong (2015) conducted a survey with 80 FDI enterprises in highly polluting industries including Paper Production, Real Processing Products, Textiles / Dyeing, Tanning, Chemicals, Steel in three cities attracting the largest amount of FDI in Vietnam-Ho Chi Minh City, Dong Nai and Binh Duong. The study shows that low environment cost is a reason for FDI enterprises considered to invest in Vietnam. According o this study, 20% of enterprises are first investing in Vietnam to save less than 10% of environmental costs compared to mother countries, 68% 10-50% savings are expected and 12% is expected to save 50%.

It is claimed that that environment issues caused by the local state management. Due to the competition of FDI attraction, the local government provided FDI investors many incentives and even preferential treatment frames that ignored environment requirements. It was also pointed that some local government lacks of capacity in appraising licensing with FDI projects, especially lack of environmental control and appraisal mechanisms formally, focusing heavily on pre-examination but not paying attention to post-check ... has caused many FDI projects to reveal inadequate. Besides, the level of foreign investment management is limited (especially with large-scale projects, complex technology), along with untighten control of the environment of localities, authorities have led to many business cases FDI enterprises cause serious and prolonged environmental pollution. Many localities, for the purpose of attracting investment, have been massively licensed for FDI projects to invest in production areas with high risk of environmental pollution (CIEM 2017).

Moreover, it is said that, the link between the ministries, departments and local authorities in the management and supervision of the implementation of enterprises responsibility in the enforcement of environmental regulations is not synchronized and close cooperation. In some localities, the management board of industrial zones and economic zones have not made full powers and responsibilities, being manipulated by investors,

thereby breaking industry planning, territory, not ensuring the National Interest in FDI attraction (Doan Thanh & Nguyen Thi Hoa, 2016). This is considered as an important reason causing inefficient management of FDI of the government.

The structure of FDI attracted unbalanced in the industries, of which focused on industry sectors such as manufacturing, metallurgy easy to pollute and use too many resources. According to a survey by VCCI and USAID/VNCI recently showed that 67% of FDI businesses currently operating in Vietnam related to manufacturing industries with low added value, 80% use of average technology, 14% use low-tech, much energy consumption and high emission capability. This is contrary to one of the top targets of Vietnam's FDI attraction that is attracting projects with strong capital, high-tech and modern. Additionally, FDI Partners from Asian countries, including China, Hong Kong, Taiwan which are claimed to majorly use old technologies polluting host countries. The present FDI projects accounted for 70% of investment coming is relatively high, not to mention to the projects from other countries but originated and driven from China (Doan Thanh & Nguyen Thi Hoa, 2016).

## **5. Discussions and conclusions**

Rising FDI has been a major trend over the world as a certain consequence of strong international integration among countries recently. It seems that host country governments, especially those are developing countries, have considered FDI as an important component for developing their economies. Given such expectations these countries governments are willing to offer foreign investors many incentives, one of those incentive is low environment standards to attracting them. The findings in this study are quite similar to the literature on effects of FDI to the host countries. To Vietnam economy, FDI plays vital roles to develop the country economy such as increasing GDP, creating jobs, and improving export values... However FDI has been blamed for many environment issues in Vietnam recently, for example water pollution, sea pollution, and land pollution,

In order to promote the positive effects and limit negative impacts on the environment of the FDI sector right from the beginning, the Government needs to manage FDI attraction based on a view of environmental protection. Specifically, there several solutions should be implemented in attracting FDI in the following years:

It is necessary to complete the system of laws, policies and regulations on foreign investment. The Government needs to re-examine the entire legal system on investment in general and foreign investment in particular, to change appropriate contents to match the new contexts. In the coming years, it is necessary to make adjustments to amend the Investment Law and the Enterprise Law in order to create a synchronous, clear and regulated business environment.

It is time to adjust preferential policies and investment barriers oriented to attract FDI towards environmental protection. In the short term, it is necessary to amend investment incentive policies towards attracting "clean" FDI projects, but it still does not reduce the Vietnam's competitiveness and investment attraction compared to other countries in the region. State management should take the lead in developing a preferential policy system to ensure consistency and transparency for attracting FDI from the viewpoint of national environmental protection.

Moreover, it is necessary to complete the decentralization mechanism in the governance of foreign investment management. The decentralization of the state management aims to promote the local autonomy in managing FDI projects. With widespread and high pollution risks FDI projects it needs to be unified to manage from the Central to local. The competent authorities are responsible for strictly controlling the compliance with the planning for FDI projects.

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# CORPORATE SOCIAL RESPONSIBILITY IN GUARANTEEING ENVIRONMENTAL SECURITY

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## **Abstract**

*Many decades recently, guaranteeing environmental security, a non-traditional issue, has been attracting concerns of many countries in the world. Therefore, it is very important for businesses to fulfill their social responsibility in guaranteeing environmental security. However, due to different reasons, there have been many limitations and shortcomings in the implementation of social responsibility of businesses. These shortcomings and limitations have been negatively impacting the economy, politics, national security and defense of a country in particular and the whole world in general. The paper aims at explaining the meanings of the implementation of social responsibility of businesses to guarantee environmental security and indicates some typical examples of environmental violations caused by businesses in the world. Then, some recommendations to improve the businesses' performance of corporate social responsibility to guarantee environmental security will be presented.*

**Keywords:** *environmental security; social responsibility of business*

## **1. Introduction**

Environment is all things, natural and manmade around us, which have direct impacts on human life. History has showed that human beings have been increasingly exploited the nature to serve their life. They, however, have also been making the environment polluted. Together with the “hot” and “rapid” development of the economy, environmental pollution and corporate social responsibility have attracted concerns of many countries and international community.

## **2. Research methods and key concepts**

### ***2.1. Research methods***

The first and foremost method is to analyze data to collect secondary information on issues relating to the survey. First, the authors made a literature review on domestic and international publications on environmental security, corporate social responsibility, necessity for guaranteeing environmental security, legal bases to have businesses to perform their corporate social responsibility. Second, the authors present recommendations to encourage businesses to perform their corporate social responsibility in guaranteeing environmental security.

Peer method is the other method to collect responses from experts at University of People's Security, University of People's Police, and Department of Strategy Science and History under Ministry of Public Security.

### ***2.2. Key concepts***

In order to meet targets, the authors focus on two key concepts namely environmental security and corporate social responsibility.

#### **- Environmental security**

There have been many different approaches to environmental security. Hecht (2018) indicates that environmental security is a part of national and international security and that it is a human activity to prevent negative factors from impacting the environment. He also stressed that solving environmental security will contribute to maintaining national security. According to International Institute for Environment and Development (2018), environmental security is the security sustainability, and there is a close relation between environmental security and the security situation in a country. In other words, the reduction of natural resources will lead to instability in security. While there exist differences, most scholars share a common viewpoint that the downfall in environment must be considered as a source of national security as the UN Security Council (1992) puts it the scarcity of natural resources, degradation and environmental pollution and environmental hazards can weaken the economy, increase poverty, increase political instability, and even become a trigger for conflicts and wars. The above viewpoints show that environmental security is a survival issue of all countries and peoples. Environmental security has three typical characteristics. First, it is a concern of organizations, countries, and peoples on the purity of environment. Second, environmental changes lead to instability, social conflicts and wars. Third, environment changes threaten material demands of individuals.

### **- Corporate social responsibility**

There have been many concepts on corporate social responsibility. Corporate social responsibility can be understood as corporate social performance, corporate citizenship, corporate social responsiveness, corporate philanthropy, business ethics, and so on. However, from the authors' viewpoints, the World Bank has the most convincing approach which indicates that corporate social responsibility is the commitment to contributing to the sustainable economic development through activities to improve the quality of life of labors and their families' members, businesses, and the whole society. In other words, corporate social responsibility is not only limited to caring about labors' life but also a commitment to perform businesses' social responsibility.

### **3. Results**

The findings of the survey are showed in three aspects: 1. The performance of corporate social responsibility to guarantee environmental security has been regulated by specific legal bases; 2. Good performance in guaranteeing environmental security has led to significant benefits for businesses; 3. Apart from businesses with good performance in guaranteeing environmental security, many others such as Formosa Plastics Corporation have caused environmental disasters.

#### ***3.1. Legal bases for businesses to guarantee environmental security***

Guaranteeing environmental security is to abide by gaming rules of international organizations. Following are some global important treaties in guaranteeing environmental security that Vietnam participated and signed, Vienna Convention for the Protection of the Ozone Layer 1985, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989, and United Nations Framework Convention on Climate Change 1992. When joining World Trade Organization, states have to abide by six agreements including Technical Barriers to Trade Agreement which clarifies social responsibilities. In the world, goods is not only tested in quality but also in social responsibilities. Some export products have to meet criteria set by the other partners such as ISO 14000, Codes of Conducts of importers and independent organizations such as provisions on juvenile labors, forced labors, race and sex discrimination, environment, health safety, and so on. It can be said that the world legal system has specific provisions on guaranteeing environmental security, and it is the legal bases businesses have to abide by. Vietnam has also issued many legal documents such as Constitution 2013, Law on Environment Protection 2014, Decree No.80/2014/NĐ-CP on handling waste water; Decree No.03/2015/NĐ-CP on determining losses for the environment; Decree No.18/NĐ-CP on planning environmental protection, evaluating strategic

environment, evaluating environmental impacts and plans for environmental protection. These above-mentioned documents are the legal basis that businesses have to abide by to guarantee environmental security.

### ***3.2. Significances of performing corporate social responsibility to guarantee environmental security***

The analyses and evaluation of operations of businesses in the world allow the authors to draw significances of performing corporate social responsibility to guarantee environmental security as follows:

*First*, performing corporate social responsibility to guarantee environmental security is a prerequisite for businesses to attract competent human resources who are loyal to benefits of businesses and commit to long-term serve. This important factor decides the stability and productivity of businesses as well as their product quality. Together with salary and social welfare, businesses need to provide a friendly and safe environment for their employees. Employees, in their turn, will carry out their job well and bring more benefits for businesses.

*Second*, performing corporate social responsibility to guarantee environmental security is an effective tool to improve reputation and position, protect trademark's values and social prestige, create love from the public especially people in target markets for businesses. Besides, this will help businesses have advantages in competition, sell more products, attract and build more supply and demand relations. This invisible advantage will guarantee long-term operations of businesses.

In many businesses, social responsibility reports with criteria of guaranteeing environmental security are released together with annual reports. Many transnational businesses have built codes of conduct for their employees worldwide such as Pentalog group, a well-known firm in processing software's, which has representative offices in France, Germany. The philosophy of Pentalog group in implementing corporate social responsibility includes human activities and strategies for stable development in economics, society, environment, and culture. Daikin, a famous corporation in electronics, has tied its destiny to the philosophy that in all fields. Daikin presents all initiatives to develop and improve the environment. Daikin has also strengthened the development of new products with advanced technologies to build a world of fresh environment. This philosophy has increasingly forwarded Daikin's values and contributed to stable development of the society. Many other businesses have taken environmental security guarantee as a motive to push their prestige and trademark. Multinational groups such as The Body Shop from the UK and IKEA from Sweden have not only been famous for products of high quality and at reasonable price but also for their prestige in protecting the environment.

*Third*, guaranteeing environment helps businesses make a barrier to protect themselves even when they are stuck in manufacturing and business difficulties and mark a difference in their trademark. This means a lot in a very competitive market.

*Fourth*, consumers are likely to prefer products friendly to environment, so businesses have to guarantee that their products are made in accordance with criteria of environment protection. In other words, customers not only care about quality of products but also the ways these products are made. Therefore, the implementation of environmental security helps businesses improve their confidence in customers.

*Fifth*, guaranteeing environmental security is a prerequisite for human security. The Chernobyl disaster killed 30 people and made the other hundreds of thousand of people injured with the total loss of USD 15 billion, and 135,000 people had to escape from the site (Wikipedia, 2019). The Bhopal disaster in India in 1984 killed more than 2,500 people, made other 1,000 people blind and influenced 20,000 others (Wikipedia, 2019). The Minamata disaster in Japan in 1968 was a terrible example for environmental pollution, strongly impacting health and life of many people (Wikipedia, 2019). These are precious lessons for all countries in the world.

*Finally*, guaranteeing environmental security is a very important condition to guarantee national security and social security and order. Recent incidents have showed that many businesses have not guaranteed environmental security, leading to lawsuits and conflicts between businesses and people. For instance, being aware that Thanh Thai Nicotex Joint-Stock Company in Thanh Hoa province buried pesticide, people sent a petition with more than 1,000 signatures to sue the company. The Formosa incident in Ha Tinh province which caused serious pollution to sea environment in provinces of Ha Tinh, Quang Binh, Nghe An, Thua Thien Hue ended up with many demonstrations and riots in Vietnam.

### ***3.3. Practice of environmental security violations of businesses***

It can be confirmed that guaranteeing environmental security is an obligation of businesses associated with legal provisions. With the above advantages, most businesses in the world have implemented many measures and policies to guarantee environmental security. Reality shows that many businesses with CRS have significantly increased their profits. Aserradero San Martin, a wooden producing company in Bolivia, after holding the Forest Stewardship Council Certificate, integrated into the Northern America market and increased 10 to 15% price of their products. General Electrics used USD 2 billion annually to conduct research in technologies to protect the environment, and this led to positive business results.

Many businesses, however, due to different reasons, have destroyed the environment. For instance, in 2010, the incident of oil overflowing caused by British

Petroleum in Louisiana coast the U.S took 11 lives and made the other 17 people injured. Approximately five million oil barrels overflow to Mexico bay, destroying the eco-system and seriously impacting the fishing and tourism industries of this country. The incident also influenced 400 species, and five years later the amount of oil in the sea was higher than the accepting degree. This is one of the worst environmental disasters in the U.S history. In the Southeast Asia, in 2011, the International Rivers considered the responsibility of People's Democratic Republic of Laos in approving the project of Xayaburi Hydroelectricity Dam in the lower section of the Mekong river. Assessments of independent scientists and experts showed that Laotian Government did not meet basic requirements for building a Hydroelectricity dam. They argued that the building of such a dam will seriously lead to the extinction of some species and pose dangers to others. Neighboring countries which share the river such as Thailand, Vietnam, and Cambodia showed their worries and stressed that the dam, if it were built, will have impacts on the environment. It is, therefore, very necessary to meet international environmental security for the project as Xayaburi Hydroelectricity Dam was the first project of 11 projected plans in the lower section of the Mekong river, a river of importance for countries in the Southeast Asia. Laos violated the second international principles of the Rio Declaration on Environment and Development in which States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Another example is Formosa Plastics Corporation (Taiwan, China). This firm has been listed into "black" businesses for causing many environmental disasters. It disposed wastes and destroyed the environment in many countries and territories such as the U.S, Cambodia, Taiwan, and Vietnam. In 2009, Ethecon Fund, a German environment organization, awarded the prize "Black planet 2009" for Formosa Plastics Corporation and its executive board members for disposing wastes into the environment and stressed that this group has to be liable for making the planet black. In a 28-page report released on November 21, 2009 the Ethecon Fund criticizes that Formosa Plastics Corporation not only threatens peace and human rights but also destroys human ecology. For instance, in Texas and Louisiana in the U.S Formosa Plastics Corporation was detected to bury toxic wastes, polluting the underground water source and Mississippi river. In 2000, Formosa paid fine of USD 150.000 in Texas. In the 1980s, Formosa Plastics Corporation was discovered to dispose sixty-three tons of ethylendichloride into residence areas in. In 2004, Formosa factory in Illinois exploded, killing six workers and injured many others. The explosion caused water, air, and soil pollution in the nearby residence areas. In January 2009, farmers in Texas informed scientists who were measuring the air and soil toxic levels in nearby

former Formosa factory that their cows reduced weight and died at very young ages. The U.S Environment Protection Agency also measured the air and soil toxic levels in nearby former Formosa factory and discovered that there were forty-three toxics, many of them could cause cancer. The U.S Environment Protection Agency and Department of Justice fined Formosa Plastics Corporation USD 13 million on September 30, 2009 (Ngo, 2016).

In 1998, Formosa Plastics Corporation buried 3,000 tons of extremely toxic wastes in Sihanoukville city, making sea water and soil polluted and many people sick. The incident led to many riots and demonstrations in Phnom Penh capital with the participation of 1,000 Sihanoukville people. Cambodian Government accused Formosa Plastics Corporation of bribing USD 4 million to the local authority to get the license to take wastes to bury in Sihanoukville. Consequently, forty local officials were forced to resign, and three of them were prosecuted (Ngo, 2016).

In Taiwan, despite its remarkable contributions to economic development and industrialization, Formosa Plastics Corporation was reputed for its environmental destruction. According to The Diplomat on April 30, 2016, Formosa Plastics Corporation was in the top ten list of corporations which cause pollution in Taiwan. In 2010, Taiwan Environment Protection Agency fined Formosa Plastics Corporation USD 4.7 million for causing serious soil and underwater pollution in Kao-Hsiung district. In 2012, Professor Chan Chang-chuan in Taiwan University showed that inhabitants nearby Formosa factories had a higher percentage of cancer than inhabitants in other areas (Ngo, 2016).

#### **4. Conclusion and recommendations**

The authors used the theatrical framework to analyze and evaluate the practice of guaranteeing environmental security and found that guaranteeing environmental security plays a very important role. The authors also present recommendations to improve the effectiveness of guaranteeing environmental security as follows:

*First*, it is necessary to mobilize the capital and resources of the whole society and improve the role and responsibility of individuals in detecting, denouncing, and suing violations in environmental security of businesses. At the same time, it is needed to release violations of businesses in media.

*Second*, strengthening the propaganda in media or symposia to consult people with legal provisions of environmental security and make them understand responsibilities of businesses in guaranteeing environmental security. Thus, people will actively participate in helping authorities detect and handle businesses which have violations relating to the environment. Authorities should have timely encouragement and merits for those who actively participate in denouncing and suing

businesses which have environmental violations. The government should perfect the legal framework to protect those people.

*Third*, mobilizing the strengths of media to encourage businesses to participate in guaranteeing environmental security. Reality have showed that the media played an important role in forcing Formosa Plastics Corporation to compensate for people's losses.

Finally, studying experience from developed countries to build an appropriate policy and guideline for guaranteeing environmental security.

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# THE ROLE OF CORPORATE SOCIAL RESPONSIBILITY IN THE PROCESS OF STARTUP OF SMALL AND MEDIUM ENTERPRISES (SMES) IN THE MEKONG DELTA REGION, VIETNAM

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## **Abstract**

*The purpose of this paper is to identify factors that are affecting startup performance of small and medium enterprises (SMEs) in the Mekong Delta Region, in which this paper also analysis the important role of corporate social responsibility affecting firm's startup performance. The study results indicate the suitability of the research model with data's research as well as the acceptance of the hypothesis in corporate social responsibility (CSR). The intention of this study is to provide the understanding on how people should start their business by looking at all the factors affecting business success hence help to reduce the risk of failure and increase chances of success. The study examined five factors that influence the SMEs business success. The result has shown that startup performance concept is measured by two key factors in the case of the Mekong Delta Region, Vietnam such as the study results indicate the suitability of the research model with data's research as well as the acceptance of the hypothesis in corporate social responsibility and startup ecosystem. Both of them are affected by four variables as the government policy, financial capital, social factors, and human capital. However, the research subject has certain limitations: (i) due to limited resources in conducting research, the sample size consisted of 320 small and medium business in of the Mekong Delta Region, Vietnam, (ii) This study conducted the sampling technique of using direct interview methods from respondents. The theoretical framework has been drawn out and questionnaire was designed based on the factors chosen. The entire hypotheses were successfully tested with SPSS and some hypotheses were accepted.*

**Keywords:** *corporate social responsibility, startup ecosystem, startup performance, SMEs*

## **1. Introduction**

Small and Medium Enterprises (SMEs) play a key role in any the development of economy, especially in some developing countries. Local advantages and market

demand of the Mekong Delta Region, Vietnam is a great opportunity for start-up performance. In general, compared to the whole country, enterprises in the Mekong Delta Region are lower than the national average of 16%, the number of enterprises on average per 1,000 people in the country is 6.05 enterprises in 2017, while in Mekong Delta Region is 2.7 enterprises (*General Statistics Office of Vietnam, 2017*). These enterprises create jobs, contribute to global Gross Domestic Product (GDP) and most importantly, they are fundamental in driving innovation. A startup is an entrepreneurial venture which is a newly emerged business venture that aims to meet a marketplace need, want or problem by developing a viable business model around products, services, processes (*Riitta Katila et al, 2012*). Some of researches have addressed successful entrepreneurs but others looked at the failure small business managers. All these studies were addressing if there are any clear characteristics, which distinguish small business barriers to find out which one is more important for policy makers. In all these studies the main question remain that why some of the small and medium business is successful but other is failed. This situation has caused great concern, as a productive economy is reliant on the startup of substantial business numbers and the growth of such firms. Although the concept of social capital has been in use since at least 1961 (*Jacobs 1961*), it has only recently become applicable in the discourse on networks and relationships in small businesses. Similarly, the work of Bordieu has started to be recognized in the field of small business and entrepreneurship research (*De Freyman et al. 2005; Shaw et al. 2005; Southern 2000*). It is important to analysis some key factors affecting the firm's startup performance beside the government determined that during the social and economic development planning move toward more small business. Establishment of small business also provides more job opportunities for the unemployed people in of the Mekong Delta Region, Vietnam. Therefore, results of this research will help the policy makers in Vietnam with the same economic situation to develop reasonable planning to get advantage of development of small and medium business.

## **2. Literature review**

### **Startup performance**

A startup is a new business venture designed to effectively develop and validate a scalable business model (*Riitta Katila et al, 2012*). This is particularly the case of SMEs focused on providing products and services through startup performance. Startup performance by creating new businesses is a driving force for economic development. International studies by *Radas and Bozic (2009)*, *Zain and Kassim (2012)* show that there is a close relationship between business start-ups and regional and local economic growth.

According to *Audretsch and Keilbach (2004)*, there are four effective factors on business start-up such as material capital, human capital, knowledge and entrepreneurial capital affecting business performance.

According to author' study, there are two main factors including entrepreneurial ecosystem startup ecosystem into entrepreneurs' startup performance of small and medium business in the Mekong Delta Region, Vietnam in terms of spatial dimension.

Social capital and corporate social responsibility (CSR) in small and medium enterprises is relatively recent (Spence et al. 2003). The mainstream discourse on CSR is orientated towards large firms. The interaction of the personal and social with the business in family and owner-managed firms is key to understanding responsible behavior in SMEs. In linking responsibility to entrepreneurship strategy, Wickham (2004) identifies standard constraints operating on the actions of the business, such as legal and economic constraints and suggest that the entrepreneur also has discretion over the responsibility it sets for products or the way it manages the impact on the environment. This perspective implies that individual enterprises will vary in the nature of responsible actions in direct relation to the noble purposes of the entrepreneur. An understanding of social responsibility in small enterprise as being bound to the owner of the business is not the full story. *Graafland et al. (2003)* found that small firms rely relatively more on a dialogue strategy in which they try to learn from stakeholders which aspects of corporate social responsibility are most important to realize. Thus, social interaction with stakeholders appears to form part of the shaping of responsible behavior by SMEs, which is consistent with a social constructionist theory of modern society. As Spence et al point out "business ethics does not operate in a vacuum disconnected from the rest of the world" (*Spence et al. 2003, p 19*). Social control is a powerful form of governance on smaller networked enterprises (*Larson 1992; Leifer & White 1986*), and development of social capital provides the small enterprise with power.

### **Startup Ecosystem (SE)**

The concept of startup ecosystem has been recently widely used in the context of innovation and entrepreneurship. Although there is no single official definition for a startup ecosystem and the term is used in different ways, typically it refers to a specific geographic area with high density of startup companies and entrepreneurs. (*Herrmann et al 2015; Szerb et al, 2013*). Recently *Mason & Brown (2014)*, have highlighted the important role of entrepreneurs within the ecosystem and introduced the concept of entrepreneurial ecosystem instead, to startup ecosystem. *Mason and Brown (2014)* define that entrepreneurial ecosystem is a set of interconnected

entrepreneurial actors both potential and existing, entrepreneurial organizations such as firms, venture capitalists, business angels, banks, institutions and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'blockbuster entrepreneurship', number of serial entrepreneurs, degree of sell-out mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment'. According to *Mitchell (2002)*, entrepreneurial startup is measured by groups of factors such as relevance (satisfaction of internal and external customer management, the involvement of human resource management in the process of implementing the strategic plan, other parts involved in human resource management); the effectiveness (in the leadership style, the strategic management, the relationship between the efficiency of profit and labor growth, between business growth and labor cost) and financial investment (investment in infrastructure and technology issues, investment in human resources); organizational culture, size of workforce, training, retraining. These groups of these factors are influenced by internal and external environment of the business.

Another approach to the success factors of ecosystems is provided *Isenberg (2011)*, who has identified six different domains of entrepreneurship ecosystems such as the policy of leadership and government, finance (financial capital), culture (success stories, societal norms), supportive factors (infrastructure, support professions, non-governmental institutions) and market networks.

### **Social capital (SC)**

The term 'social capital' initially used in community studies, appears firstly in the Jacobs's *The Death and Life of Great American Cities (1961)*, to explain the survival and function of neighborhoods where the development of personal relationships provides the basis for collective cooperation in such communities (*Sorheim 2003*). After Jacobs, the theory has been used to examine the development of human capital (*Coleman 1988*), and is being increasingly surfaced in the entrepreneurship field, for example, intensive knowledge (*Neergaard & Madsen 2004*), venture creation (*Liao & Welsch 2005*), family business (*De Freyman et al. 2005; McKeever et al. 2005*).

### **Human Capital (HP)**

For many years, there are some studies in relation to the factors affecting the startup performance *Elfring & Hulsink (2007)*, *Gilbert, McDougall & Audretsch (2006)*. The most prominent of these studies is the important role of human capital in the development of enterprises, in particular of SMEs (*Coleman, 2007*). In addition, *Ahmad, & Hoffman. (2008)*, based on resource-based theory, argues that human

resources can create a competitive advantage for startups. At another point, Samad (2013) defines human capital as the ability to manage a business and argues that a business that possesses effective management skills will stay in business as well as exploit business meeting. In short, human capital contributes significantly to improving the performance of startups.

Similarly, recent research by *Hisrich & Drnovsek (2002)* shows that management capacity, expressed by education level, management experience, entrepreneurial experience and knowledge business, positive impact on the performance of newly established small and medium enterprises. In contrast, some studies do not provide evidence of a positive relationship between human capital and performance (*Appuhami, 2007*). In addition, the study by *Subramony et al. (2016)*, *Schwarz (2017)* agree that human capital is a direct factor affecting business performance of enterprises.

### ***Financial capital (FI)***

The financial capital of a start-up company usually comes from debt or comes from the own company (*Marshall & Samal, 2006*). However, SMEs or businesses in the agricultural sector have limited access to finance from financial organizations. Therefore, the financial capital of these enterprises is mainly based on debt and equity (*Van Praag, 2003*). Pretorius & Shaw (2004) divide financial resources either inside or outside the business. The majority of SMEs' financial capital depend on internal resource, but this source is often not enough to provide the business to survive and develop, especially as they face fierce competition in the global market. Therefore, external financing becomes very necessary for SMEs. *Bollingtoft, Ulhoi, Madsen & Neergaard (2003)*, *Wiklund & Shepherd (2005)* argue that financial shortfalls are one of the major causes of failure in the operation of SMEs. In general, most of the research argue that the financial capital plays a very important role in fostering startup performance, especially in the case of SMEs.

### ***Cultural factors (CF)***

According to *Gudmundson et al., 2003*, the culture has a profound impact on the success of a company or an organization. Possession of positive cultural characteristics provides the organization with the necessary ingredients. Culture has several elements that may serve to enhance or inhibit the tendency to startup performance. Also, according to another recent research, there exists a strong positive relationship between participative management practices and cultural factors in small companies. *Hurley et al (1998)* emphasize the critical role that a culture of any businesses can play in improving the ability of a successful firm. Cultural factors can encourage or discourage a variety of behaviors and decisions, including those related to startup performance.

## Government Policy (GP)

It has been established that entrepreneurship is a very vital ingredient for job creation as well as economic development as the success of income generation for the major group of both rural and urban inhabitants without recognized paid job highly depends on entrepreneurship (*Ihugba et al, 2014*).

*Kumar and Liu (2005)* study reveal that entrepreneurial sector contribution to employment and GDP is on the increase. For this reason, governments should minimize the constraints on entrepreneurship. In the case of government support policies, it is assumed that since government is in the lead for entrepreneurial development, it should provide the much-needed resources within its capability. Such resources include provision of environment conducive to business that will highly promote entrepreneurship. Government policy in this context is any course of action which aims at regulating and improving the conditions of SMEs in terms of supportive, implementation and funding policies by the government. Based on government policy as it relates to entrepreneurial practice is targeted at encouraging entrepreneurship by making a favorable environment for the entrepreneurs. Furthermore, government needs to enact policies that would be user friendly to the entrepreneurs. *Pals (2006)* argued that there is a need for government policies as they relate to entrepreneurship to be successfully implemented irrespective of which administration is in power in order to achieve the goals of the guideline which often times is always lacking. Government of most countries especially developing countries have in the past invested so much efforts and resources in establishing policies intended to uplift startup performance by the study of *Oni, E.O. and Daniya, A. (2012)*.

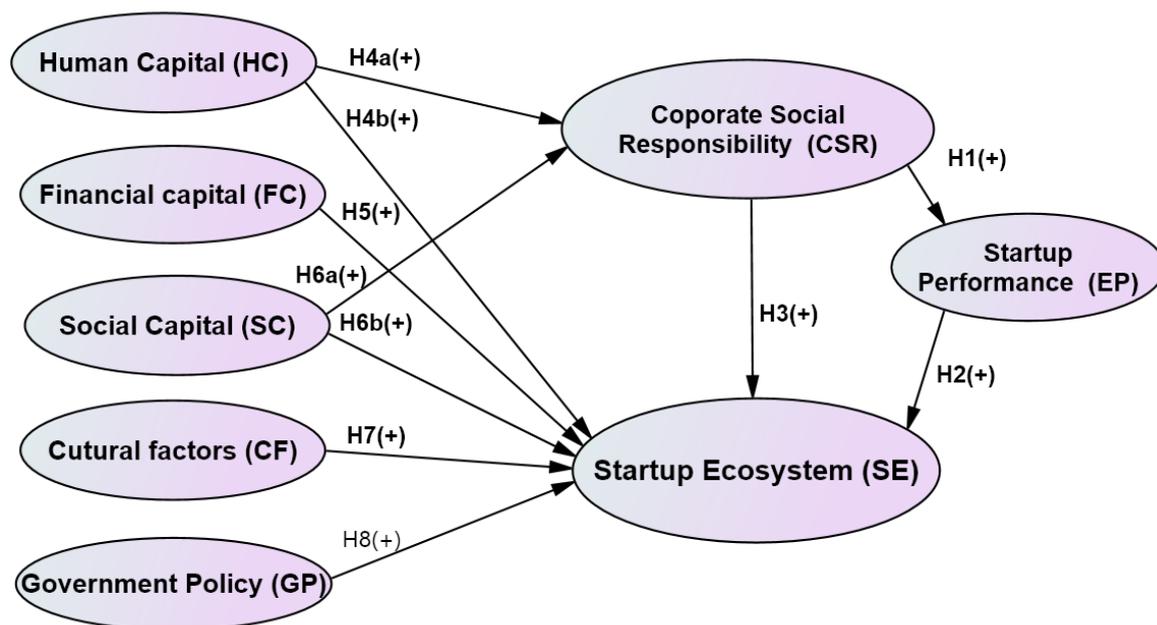


Figure No.1 Model and some hypotheses of authors' study

### 3. Methodology of the Research

**Research process:** This study has combined qualitative and quantitative research methods. Qualitative research method has been conducted by focus group discussions with 10 chief executive officers of SMEs in the Mekong Delta provinces in 05/2018 at meeting room of Statistics Offices to modify observational variables that have been used to measure research concepts. The result has shown that startup performance concept is measured by 02 variables including entrepreneurial ecosystem and startup ecosystem. In addition, both of them are affected by five variables as the government policy (GP), financial capital (FC), cultural factors (CF), social capital (SC), human capital (HC). All items were measured by using 5 - point Likert scale, anchored by 1 = strongly disagree, and 5 = strongly agree. Quantitative research has been conducted through direct interviews (face - to - face interviews) based on a random sampling 320 small and medium business in the Mekong Delta Region, Vietnam with eight local provinces in this region collected from 05 06/2018 to 09/2018 using a detailed questionnaire to test model and research hypotheses.

**Data processing techniques:** Cronbach's Alpha reliability analysis, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) were used to assess the scales. And the structural equation modeling (SEM) was used to test model and research hypotheses.

### 4. Result and discussion

#### *Description of research sample*

Among 350 respondents, 30 people were declined because of too many inappropriate respondents. Data is used by SPSS software 20.0 with 320 valid respondents with 91.5% in all questionnaires.

**Table No. 1 Types of surveyed entrepreneurs**

	Frequency	Percent	Valid Percent	Cumulative Percent
Limited Liability Company	223	69.7	69.7	69.7
Private company	43	13.4	13.4	83.1
Other	54	16.9	16.9	100.0
Total	320	100.0	100.0	

**Table No. 2 Fields of business**

	Frequency	Percent	Valid Percent	Cumulative Percent
Commerce	122	38.1	38.1	38.1
Service	100	31.3	31.3	69.4
Valid Tourism	28	8.8	8.8	78.1
Other	70	21.9	21.9	100.0
Total	320	100.0	100.0	

**Table No.3 Results of the reliability analysis of independent variables**

Cronbach's Alpha	N of Items
<b>.909</b>	<b>30</b>

(Source: author's survey data, 2018)

**Table No. 4 The results analysis of dependent variable' reliability**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SE1	10.1273	4.024	.701	.845
SE2	10.0901	3.777	.761	.820
SE3	10.1180	3.980	.711	.841
SE4	10.1087	3.997	.725	.835

(Source: author's survey data, 2018)

The results presented in Table No. 3 and No.4 show that of the 04 observed variables and 26 independent variables used to measure startup performance concepts are satisfied with the Cronbach's Alpha coefficient (Cronbach's Alpha coefficient > 0.6 and correlation coefficient – total > 0.3, Nunnally & Burnstein, 1994).

### *The results of EFA*

**Table No. 5 KMO and Bartlett's Test**

#### **KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.901
	Approx. Chi-Square	4602.057
Bartlett's Test of Sphericity	df	4355
	Sig.	.000

(Source: author's survey data, 2018)

**Table No. 6 Rotated Component Matrix<sup>a</sup>**

	Component						
	1	2	3	4	5	6	7
HC3	.814						
HC2	.791						
HC5	.791						
HC1	.743						
HC4	.735						
GP4		.782					
GP2		.762					
GP3		.751					
GP5		.751					
GP1		.736					
CF3			.824				
CF1			.798				
CF4			.789				
CF2			.750				
SC3				.802			
SC2				.797			
SC4				.780			
SC1				.735			
CSR4					.796		
CSR2					.768		
CSR3					.748		
CSR1					.711		
FC4						.804	
FC2						.778	
FC3						.752	
FC1						.734	
SE4							.735
SE2							.721
SE3							.673
SE1							.669

Extraction Method: Principal Component Analysis.

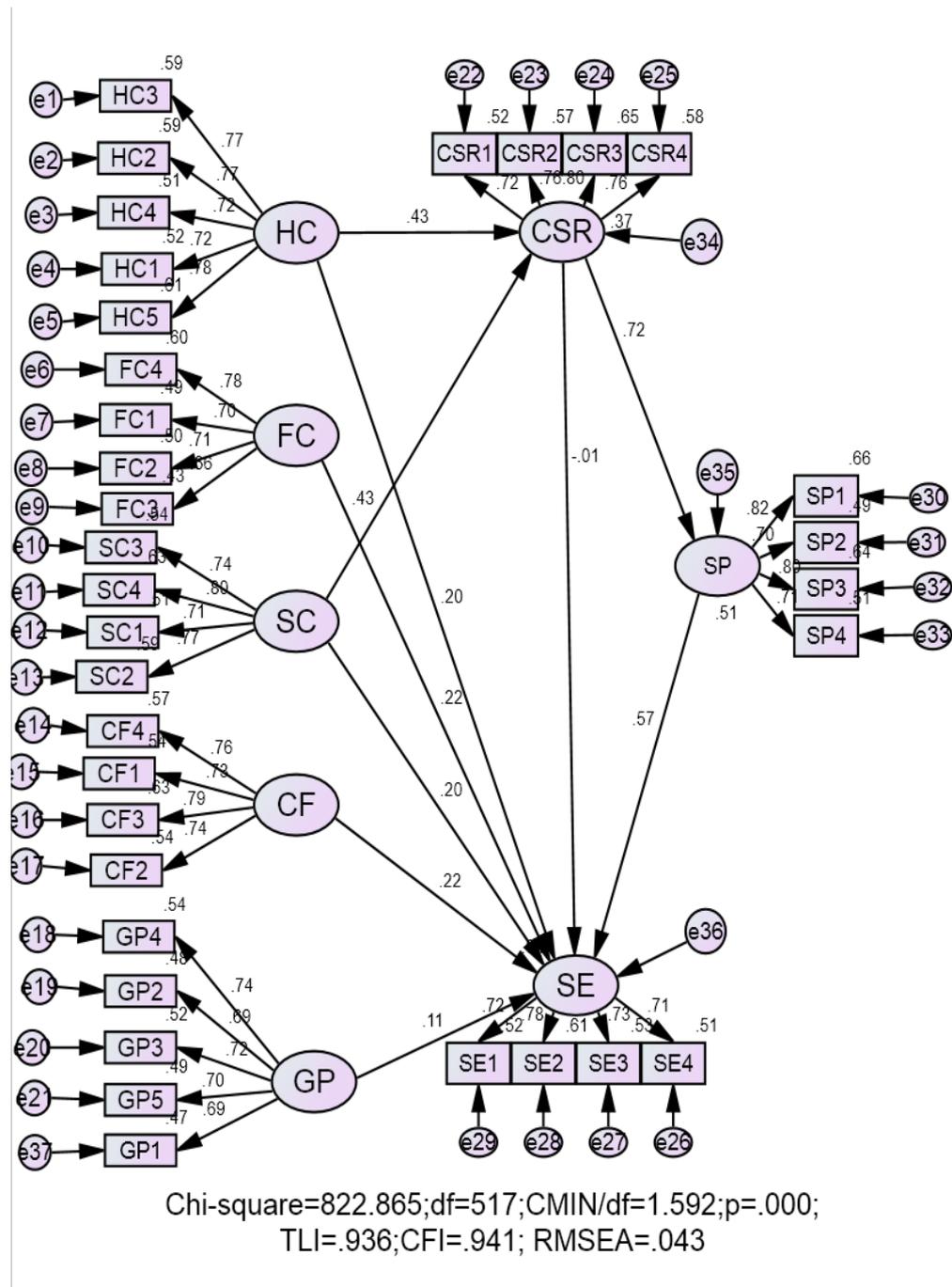
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

*(Source: author's survey data, 2018)*

The results of EFA presented in Table No.5 and Table No.6 show suggested scales which have satisfied the standard. EFA factors affecting the startup ecosystem are respectively extracted into 02 factor groups corresponding to observe variables from 05 concepts. EFA startup performance results have been extracted into 1 factor with an extracted variance of 65.13% at the Eigenvalue of 1.196. The EFA results are analyzed by Varimax rotation method.

*The results of the testing model*



**Figure No.2 The results of the SEM model**

(Source: author's survey data, 2018)

The results of the testing model presented in Figure No.2 showing that the model has  $\text{Chi}^2 = 822.865$ ,  $\text{Df} = 517$ , and  $\text{Cmin/df} = 1.592$  with  $p\text{-value} = 0.000$  ( $< 0.05$ ) was appropriate due to the size of the sample (only 350 respondents surveyed). In addition, other appropriate measures such as  $\text{TLI} = 0.936$ ,  $\text{CFI} = 0.941$  are consistent. Thus, it is still possible to conclude that this model is consistent with data collected from the market.

**Table No.7 The results of the test hypotheses**

			Estimate	S.E.	C.R.	P	Results
CSR	<---	SC	.434	.065	6.626	***	Acceptable
CSR	<---	HC	.447	.066	6.816	***	Acceptable
SP	<---	CSR	.808	.079	10.206	***	Acceptable
SE	<---	CSR	-.011	.081	-.132	.895	Rejected
SE	<---	SP	.434	.068	6.348	***	Acceptable
SE	<---	HC	.175	.053	3.321	***	Acceptable
SE	<---	FC	.177	.042	4.208	***	Acceptable
SE	<---	SC	.172	.052	3.292	***	Acceptable
SE	<---	CF	.207	.048	4.311	***	Acceptable

The results of the test hypotheses presented in Table No.7 show that all hypotheses are acceptable, except hypotheses H3.

#### **4. Discussion and conclusion of the research**

The results testing indicates the suitability of the research model with data's research as well as the acceptance of the hypothesis in this research model has shown the practical meaning for startup performance as follows:

Firstly, the is affected by five variables as the government policy, financial capital, cultural factors and social capital. The research results have identified the priority of the components in the research model. Specifically, corporate social responsibility is the strongest factor effecting on the entrepreneurial performance which might be suitable for the actual situation in the Mekong Delta Region, Vietnam with estimate beta 0.808. Besides, the government has not yet positive measures and effective measures to encourage and support the entrepreneurs so the perceptual people about startup performance. Government policy also should continue to

improve the business environment to create more credibility for enterprises; develop some oriented programs to support start-up performance in priority areas with a higher international dimension; improve start-up ecosystems. Government should intensify the information to build a network of consultancy services to support the start-up projects.

Secondly, the research results have solved the research gap when there is a combination of the corporate social responsibility on the startup performance of small and medium enterprises in Mekong Delta Region, Vietnam. Besides, the government has not yet positive measures and effective measures to encourage and support the entrepreneurs so the perceptual people about startup performance. Government policy also should continue to improve the business environment to create more credibility for enterprises; develop some oriented programs to support start-up performance in priority areas with a higher international dimension; improve start-up ecosystems. Government should intensify the information to build a network of consultancy services to support the start-up projects. The policymakers have now come up with the programs to boost the startup ecosystem in Vietnam. The success of startup performance must be incorporated in policy set up as well. The startup policymaking too will have to follow the same standards that are expected from the entrepreneurs in the case of Vietnam.

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# NECESSARY CONDITIONS TO DEVELOP ENERGY SERVICE COMPANY (ESCO) MARKET IN VIETNAM

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## **Abstract**

*The ESCO concept has been implemented in Vietnam since the beginning of 2000s, up to now there are 17 ESCOs however there is no an official ESCO market in Vietnam so far. By applying in deep interview method, the study finds out that difficulty in financial access, weak legal framework for ESCO contract implementation and lack of government supportive measures are the three common barriers for ESCO market development in the country. These lessons learned in government regulations and supportive measures were considered appropriate in Vietnam to first establish a formal ESCO market in the country and then expand and develop a market commensurate with the potential. Accordingly, the first step the Government should do is to shape the market through legal documents and guidelines for implementation. Vietnamese government should play a role in managing the quality of ESCO projects and providing financial support to ESCO enterprises and energy users, especially in the early stages of market entry.*

**Keywords:** *Barriers of Development, Energy Service Company (ESCO), Necessary Conditions*

## **1. Introduction**

The global economy has recorded a downward trend for amount of primary energy consumed to create one unit of economic output over the years. However, according to Climate Action Tracker, the results achieved so far are not enough to meet the goal of global warming as we expect. Therefore, all energy solutions need to be considered and implemented more intensively. Energy service companies (ESCO's) are seen as an important vehicle to overcome some of the barriers in promoting energy efficiency (Vine, 2005). The important roles of ESCOs in

improving energy efficiency and developing a green economy are also mentioned in other papers such as Stoughton & Venkatachalam, 2010 and Fang, Miller & Yeh, 2012.

The definition and concept of the ESCO models was first mentioned in the Directive 2006/32/EC of the European Parliament and of the Council published in 2006 and the Discussion paper of the researchers Bleyl-Androschin & Ungerbock conducted in 2009.

Vine (2005) conducted a survey aiming to collect information about ESCO's operations in 38 countries outside of the United States. The survey results showed that despite the differences in market characteristic, barriers are common in different countries. According to the research, the key barriers are financial challenges, perception of risk, lack of information and understanding, shortage or conflict of government regulations and lack of government support. These barriers were also reported in previous ESCO studies by other researchers, such as Bertoldi et al. (2003), Biermann (2001), Fraser (1996), Murakoshi et al. (2000), Poole and Geller (1997), Schleich et al. (2001), Singer & Lockhart (2002) as cited by Vine (2005).

Besides the barriers, a variety of methodologies have been used to analyze the key factors that lead to successful ESCO market development in different countries or regions. Vreeken (2012) conducted a master thesis on ESCO market development in Netherlands - which at that time was still an undeveloped ESCO market - though the analysis of experiences from the developed ESCO markets including Germany, France and Austria. According to Vreeken (2012), the main successful drivers for developing ESCO market could be categorized into three groups: government regulation, stimulation measures and ESCO sector initiatives. Based on the separate analysis of key drivers lead each country mentioned above to be success in developing the ESCO market, Vreeken synthesized and gave recommendations of what can be applied for the Netherland case. Bertoldi & Boza-Kiss (2017) reviewed the ESCO industry in European through conducting a large-scale expert survey and analysing the key characteristics as well as drivers and barriers of energy service markets in 43 European countries. According to Bertoldi & Boza-Kiss, market forces, policy measures, regulations and financial solutions are the main factor that driven the ESCO market. Hamed (2018) performed a research using strength, weakness, opportunity and threat analysis (SWOT) and internal and external factors matrix to prove that WO strategies is appropriate and necessary for Iran to promote the development of the ESCO market in the country.

The ESCO concept has been implemented in Vietnam since the beginning of 2000s (Hansen, Langlois & Bertoldi, 2009). Although Vietnam is considered as a potential ESCO market (Strahil et al, 2014), an analysis about the potential to development ESCO model in Vietnam has not been conducted yet. By using

quantitative methodology, the study aims to identify the necessary conditions to develop Energy Service Company model (ESCO) in Vietnam

## **2. Data and Method**

### ***2.1. Method***

The first research method for the study is desk research on scientific reports, working papers, books and relevant websites. This step aims to provide ESCOs understanding and knowledge in general and Vietnamese ESCO market in particular, thereby better prepare for the in-depth interviews.

The second chosen method is in-depth interviews of key stakeholders. A questionnaire is designed and sent in advance to interviewees who are outstanding experts of ESCO markets from government and private sector as well as leaders and employees in the energy service companies. After that, a face-to-face and/or telephone interview will be undertaken. The aim of the interviews is to identify the advantages and disadvantages of the ESCO implementation in practice. The in-depth interviews were conducted through the following steps:

#### *Step 1: The 1st round in-depth interview*

The 1st round in-depth interview was implemented in August 2018 through 03 face-to-face interviews with three selected key persons from both public and private sectors including: 01 Deputy Director of Department of Science, Education, Natural Resources and Environment, Ministry of Planning and Investment; 01 Deputy Director of Department of Science, Technology and Energy Efficiency, Ministry of Industry and Trade; and 01 national expert on energy working for RCEE-NIRAS – an enterprise applying ESCO contract in Vietnam. The 1st round in-depth interview aiming to get knowledge on ESCO background, review existing legal framework and develop the questionnaire for the research.

#### *Step 2: The online survey*

Based on the result of the first round interview, a survey was developed and sent to key person from 17 enterprises running ESCO model in Vietnam.

The following questions are included in the questionnaire to collect basic information of enterprises applying the ESCO model and identify the main barriers in the implementation of ESCO projects by enterprises in Vietnam:

- What is the size of your company? (Large, Medium & Small or Super small)
- What sectors are targeted by your company?
- What energy services are offered by your company?
- What are the most important barriers facing the development in your company?

These questions are consistent with the survey conducted in the research of Vine (2005). The barriers listed in the answer sheet were common barriers, according to survey results in 38 countries by Edward Vine in 2005. Respondents were asked to rate the importance of the barrier to their company on a scale of 0 (unaffected) to 5 (significant affect).

The survey was implemented in September 2018; The questionnaire was developed as an online form of multiple-choice tests and sent to 17 key contacts in 17 enterprises applying ESCO model. The interviewees including: 05 Directors, 01 Deputy Director, 06 Managers/ Deputy Managers of Marketing and Communication Department; 03 managers of Sales Department; and 02 managers of Human Resources Department were selected based on personal networking of the writer and recommendations from RCEE-NIRAS expert. After 2 weeks sending the questionnaires, the researcher collected 17/17 answer sheets from enterprise representatives as mentioned above.

#### *Step 3: The 2nd round in-depth interview*

The 2nd round interview aiming to share the questionnaires result and then discuss on policy recommendation for the government of Vietnam was implemented at the end of September 2018 through 01 telephone interview with the Deputy Director of DSENRE, MPI representing for public sector and 01 face-to-face interview with the national expert of RCEE-NIRAS representing for private sector.

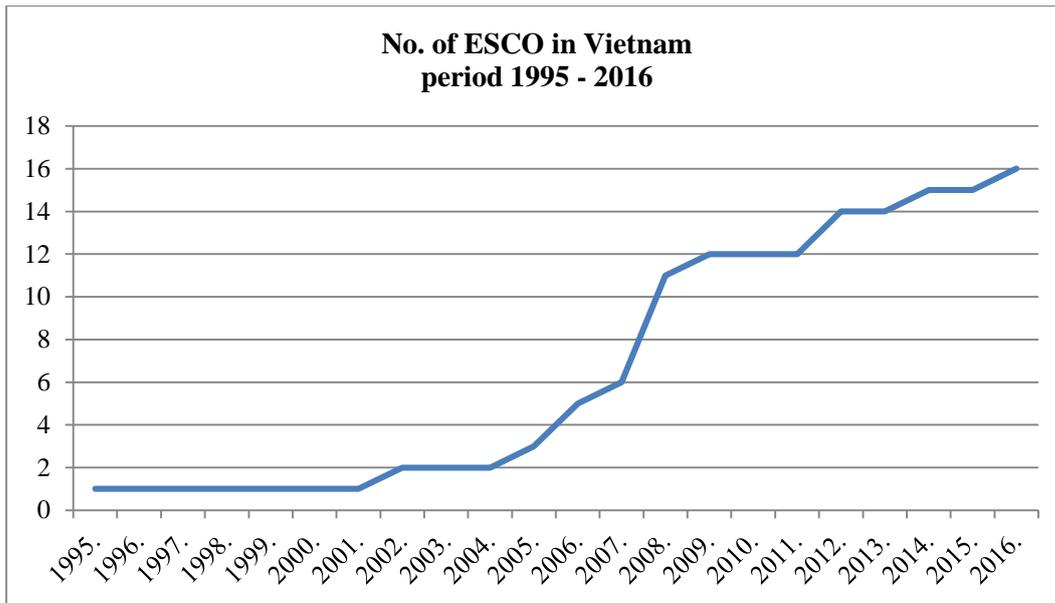
#### **2.2. Data source:**

The basic information (size, targeted sectors, provided services...) of ESCO enterprises in Vietnam using in this study are taken from the survey conducted by the author on 17 enterprises running ESCO model in September 2018.

### **3. Results**

#### **3.1. Vietnam ESCO market status**

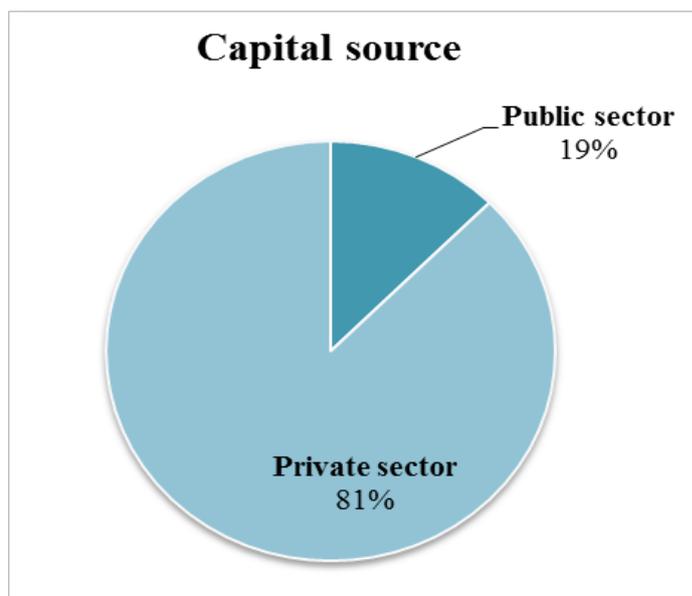
There is no an official ESCO market in Vietnam so far. The “unofficial ESCO market” in Vietnam means that although the market already exists (reflected by the appearance of enterprises and its clients applying ESCO contract), it has not been legalized so far (shown through the lack of definitions and criteria for classification of ESCO in legal documents). Since the legal framework that directly regulates ESCO operation hasn’t been established yet, there is no set of criteria to identify and classify the current enterprises running ESCO business model in Vietnam. Enterprises surveyed within the framework of this thesis are companies applying ESCO model through signing ESCO contracts with energy users.



**Figure 1: Number of ESCOs in Vietnam**

*Source: RCEE-NIRAS in 2018*

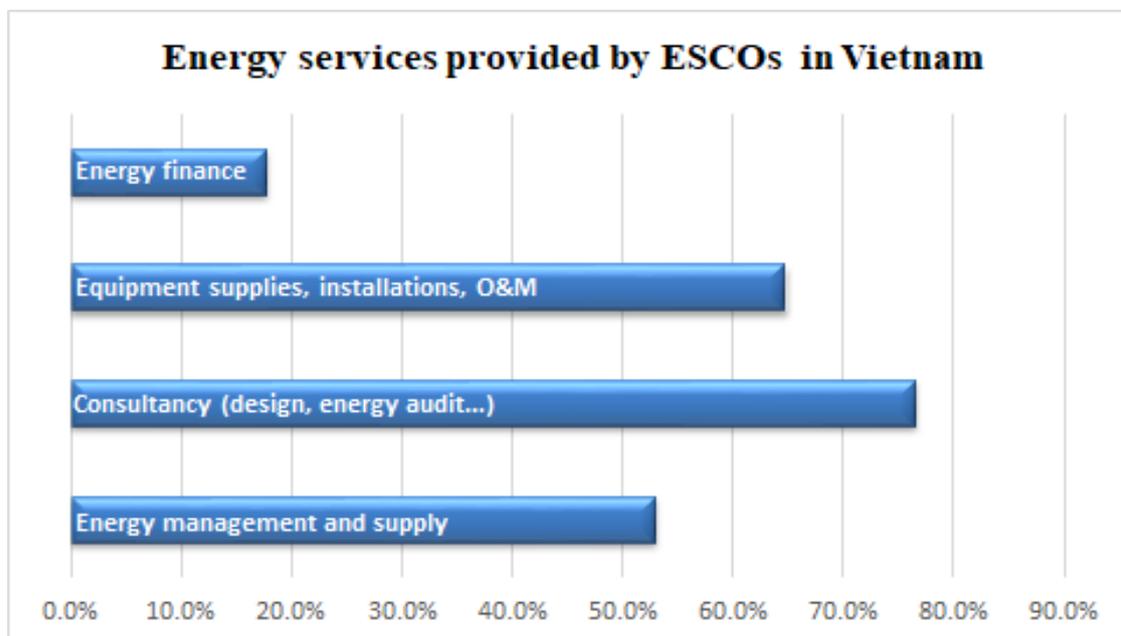
The survey under this study conducted in September 2018 found that most of the enterprises running ESCO model in Vietnam are small and medium enterprises, except for EVN and Solar BK. The energy service provided in Vietnam mainly focus on industry (seafood processing, cement production...) and commercial buildings. The financial sources for ESCO investment in Vietnam come mostly from private sector (14 private enterprises out of 17 enterprises surveyed, accounting for 81%).



**Figure 2: Capital source of ESCO enterprises in Vietnam**

*Source: Calculated from data's survey*

The energy services provided by ESCO in Vietnam market are shown at the Figure 3. It can be said that the energy services provided in the Vietnamese market so far is not diversified. Except for EVN and Solar BK, other enterprises with limited capital, mainly provide energy consulting services and/or low value EE equipment packages. The survey on 17 enterprises running ESCO model shows that energy consultancy is the most popular energy service in Vietnam market. Accordingly, energy services such as energy audit, technical & financial analysis and design consultancy are provided by 13 out of 17 enterprises, accounting for 76.5 percent. Besides, services related to energy efficiency equipment such as equipment supply, installation, operation & management (O&M) ... are also heavily invested in the market, with 64.7% ESCO enterprises answered EE equipment supply are their main service. Due to the small scale of investment and simple technology used, the average contract term for providing EE solutions in Vietnam ranges from one to five years.



**Figure 3: Energy services provided by ESCOs in Vietnam**

*Source: Calculated from data's survey*

On the demand side, according to the Law on Energy Efficiency and Conservation, more than 2000 key energy users are required to carry out energy audits every three years and must develop and submit the annual and five-year plan of energy savings. Besides, enterprises need to implement energy savings methods to ensure energy consumption does not exceed the benchmark values in the same industry and/or manufacturing sector. In addition to complying with government regulations on energy efficiency, the implementation of energy solutions will help enterprises reduce costs and increase competitiveness in the market.

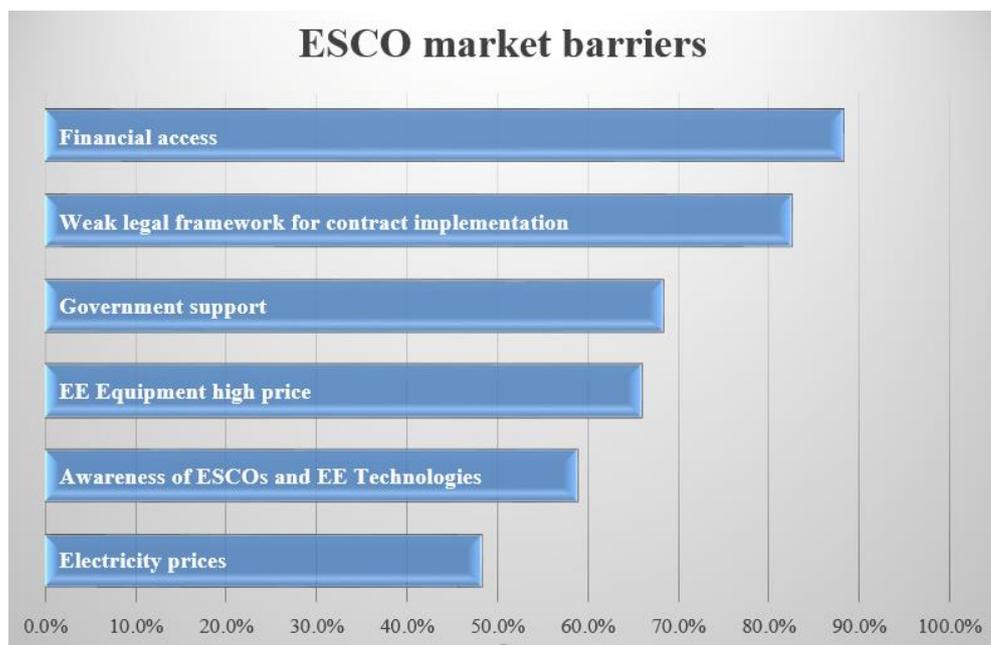
### 3.2. Barriers of ESCOs' market development in Vietnam

17 ESCOs in Vietnam were invited to rate the importance of barriers to business development on a scale from 0 (unimportant) to 5 (very important). To determine which barriers, have the greatest impact on businesses, the scores for these barriers will be calculated as follows:

$$\text{Score of barrier}_i = \frac{\text{Sum of score rated by each enterprise for barrier}_i}{5 (\text{maximum score}) * 17 \text{ enterprises surveyed}} \times 100\%$$

The results of questionnaires show that difficulty in financial access, weak legal framework for ESCO contract implementation and lack of government supportive measures are the three common barriers for ESCO market development in the country.

Financial access with the score of 88.2% is considered the biggest barrier for ESCO businesses. Similar to other markets in the world, financial access and investment attraction of ESCO enterprises in Vietnam are difficult for many reasons. Firstly, it is not easy for banks to provide loans to small and medium enterprises, especially the type of enterprises that do not have clear regulations such as ESCOs, because of the high risk of loan repayment. ESCOs do not have fixed assets for mortgage, while the banks are currently not accepting savings contracts of EPC projects as collateral for loans. Secondly, the lack of awareness of ESCOs concept and energy efficiency technologies from stakeholders leads to a low confidence index for this kind of business.



**Figure 4: ESCO market barriers in Vietnam**

*Source: Calculated from data's survey*

The weak legal framework for ESCO operation was voted as the second important barrier by interviewees with the score of 82.4%. The lack of legal documents to regulate, guide and support the operation of ESCO model as well as a monitoring and evaluation agency to manage ESCO enterprises increases the risk for both ESCOs and their clients. Because regulations on EPC contract implementation, especially profit-sharing mechanism is unclear, most of the contracts between ESCO and customers are signed by trust. In addition, due to a lack of arbitration, conflicts between the parties, if any, are resolved in accordance with the civil law. In fact, the unclear regulation has led to some situations where ESCOs could not recover capital after investing equipment and implementing contract. On the other hand, the available regulations on accounting, asset transferring and tendering in Vietnam are in conflict with ESCO contracts. For example, the current regulations regulated that state-owned companies must account for revenues and expenditures in accordance with state regulations, where there are no regulations on accounts that can enter the entry for ESCO installment payment. The common ESCO contracts stipulate that after the termination of the contract, the property will be transferred to the customer at an agreed price. This clause is in conflict with both current asset valuation and procurement regulations, not to mention for ESCO business is state enterprises such as EVN, the transfer of public assets is extremely complex.

The lack of government supports, particularly corporate income tax, import tax and interest incentives, is also a major challenge for ESCO enterprises reflected through the score of 68.2%. Although running a different operating model and providing specific services through special types of contract, ESCOs in Vietnam currently are regulated by the similar tax, interest rate and procurement procedure regulations as normal business models.

In addition to the three major barriers mentioned above, the development of the ESCO market in Vietnam is also limited by the high price of energy efficiency equipment and technology due to high import taxes (leads to increase cost and then limit the energy services to provide); the low electricity price (leads to decrease benefit) and; the lack of information, knowledge and awareness of ESCOs and energy efficiency solutions (leads to reduce confidence and corporation opportunities) ...

#### **4. Policy recommendations and conclusion**

Based on an analysis of international experiences, current situation and barriers in Vietnam, the authors suggest recommendations aim to expand and develop the ESCO market in the country as follow:

### *Government regulations*

It can be seen that the current energy law and circulars of the Vietnamese government have fuelled the demand for energy services in general. This is considered as the initial advantage to build and expand the ESCO market in Vietnam.

However, as analysed in previous sections, the lack of legal documents on ESCO projects caused difficulties in lending loans of financial institutions, entering energy service market of enterprises and making decisions in using energy services provided by ESCOs of energy users.

Therefore, *the first action should be legalizing ESCO definition and model concept*. In Vietnam case, ESCO policy formulation should be implemented by the Ministry of Industry and Trade with the involvement of relevant ministries such as the Ministry of Planning and Investment and the Ministry of Finance) and financial and technical supports from international organization such as World Bank, ADB... Then, in addition to business registration as usual in accordance with the Ministry of Planning and Investment regulations, enterprises that meet the criteria defined in the law will be registered in the ESCO business list.

In addition, the issuance of *regulations on the implementation of ESCO contracts, standard contract framework as well as the arbitration mechanism* is necessary to reduce risks and ensure the rights of involved parties including ESCO enterprises, energy users and financial institutions.

On the other hand, *revising and updating government regulations on accounting, bidding and asset management systems should be implemented soon* to fix the conflict between existing regulations and terms of ESCO contract models.

Moreover, it is important to *develop and establish a measurement and verification system (M&V)* as well as protocols for measuring energy savings. Based on this system, the appraisal of investment projects in energy efficiency will be carried out reliably and become a guarantee basis for proposing a plan to attract funding for both ESCOs and their clients.

### *Government supports*

In order to promote the ESCO market, the Government should consider offering tax incentives and financial support to ESCO enterprises as well as energy users.

The Vietnamese government can refer to the corporate income *tax incentives* for ESCO businesses from the policies of China and Korea such as tax exemptions in the first years and then reduction at a certain level for the next years to attract the attention of businesses on providing ESCO model. Besides, Vietnam energy market is strongly dependent on technology imports, so in addition to the income tax and

VAT incentives, the Vietnamese government should consider giving preferential import taxes to lower the price of energy efficiency equipment, thereby reduce the costs of ESCO enterprises.

On the other hand, although energy efficiency is a priority task mentioned in legal documents, the allocation of state budget for investment activities in this area is limited. Therefore, the appropriate financial sources for developing energy efficiency in Vietnam should be foreign investment and capitals from private sector. The World Bank is currently the main partner of Vietnam in investing to improve energy efficiency. In addition, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Asian Development Bank (ADB), Green Investment Fund (GIF), Green Climate Fund (GCF) and Global Environment Facility (GEF) are also active partners in supporting Vietnam in this field. However, the government of Vietnam needs to *establish more attractive conditions as well as increase commitment and transparency to continue to attract non-refundable investments or low-cost loans* from these international organizations, especially in the context of foreign aid to Vietnam has fallen sharply because Vietnam has become a middle-income country since 2010.

The government should *establish a financial facility* under the management of Ministry of Industry and Trade (or Ministry of Planning and Investment) to attract, coordinate and provide financial sources for energy efficiency projects in general and ESCO project in particular. This fund may focus on offering financial solutions or acting as a multi-functional fund aim to provide financial, technical and legal support for ESCO businesses. The facility operation might be derived from the model KEA from South Korea's government.

In addition, aiming to overcome the financial barriers for ESCOs and energy users, the government should coordinate with the State Bank and commercial banks to issue preferential policies such as *lowering the interest rate and increasing the repayment period for loans for investment in energy efficiency*.

#### *ESCO Association*

According to international experiences, the *establishment of an ESCO association* is an effective way to increase market efficiency. This agency will be responsible for managing registered ESCO enterprises, evaluation and appraising energy service projects, connecting stakeholders in the markets. The ESCO Association should be established and managed by the Ministry of Industry and Trade and in close coordinate with the financial facility that was proposed in the previous section.

**Table 1: Summary of policy recommendations**

Key barrier	Policy recommendation
Difficult financing access for ESCOs and energy users	<ul style="list-style-type: none"> <li>- Providing financial sources from state budget and international organization;</li> <li>- Issuing regulations on loans incentives (low-interest and long-term repayment);</li> <li>- Establishing a financial support facility;</li> </ul>
Weak legal framework for ESCO contract implementation	<ul style="list-style-type: none"> <li>- Legalizing ESCO definition, model concept;</li> <li>- Issuing regulations on the implementation of ESCO contracts, developing standard contract framework, arbitration mechanism and M&amp;V system;</li> <li>- Revising and updating regulations on accounting, bidding and asset transfer;</li> </ul>
Lack of government support	<ul style="list-style-type: none"> <li>- Providing tax incentives;</li> <li>- Establishing a financial support facility/ ESCO Association;</li> <li>- Issuing low-interest and long-term loans;</li> </ul>
High EE Equipment price	<ul style="list-style-type: none"> <li>- Encouraging domestic technology development;</li> <li>- Reducing import tax on energy efficiency technology and equipment;</li> </ul>
Lack of information and awareness of ESCOs and EE Technologies	<ul style="list-style-type: none"> <li>- Organizing training courses;</li> </ul>
Low electricity price	<p>Although the Government together with EVN have a roadmap to increase electricity prices over time, the price range is still low. I assess this barrier is difficult to overcome in Vietnam by the strong opposition in raising electricity prices from normal enterprises, household and individual.</p>

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# ANTECEDENTS OF GREEN PURCHASE INTENTION: A CASE IN VIETNAM

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## **Abstract:**

*The last few years have witnessed a phenomenon growth in the green consumption industry. Yet, relative few studies have been performed in this domain in developing countries. The purpose of this study is to investigate the influence of materialism, perceived risk, trust, corporate environmental advertising, and environmental concern on the willingness to purchase green products in Vietnam. A conceptual model was developed to represent the proposed relationships among the related variables. An online survey was conducted and 133 valid surveys were collected. This research shed some light on green consumption behavior of consumers in Vietnam. Materialism (centrality), environmental concern, perceived risk and trust were all reported denoting significant influence on consumers' willingness to purchase green products in Vietnam. Limitations for this study mainly come from the representativeness of the sample, which was restricted to consumers in Hanoi. This paper provides a conceptual framework to explain green consumption and its motives.*

**Keywords:** *consumer behavior, green consumption, risk, trust, Vietnam*

## **1. Introduction**

### *Research background*

Currently there is a growing awareness of the environmental impact and a rising concern over consequence of consumption among consumers in Vietnam. This could be explained as the fast paced industrialization and urbanization have resulted in serious environmental issues for Vietnam. According to The World Factbook CIA

(2015), Vietnam is facing significant environmental challenges, such as deforestation, soil degradation, water pollution, air pollution and overfishing. Realizing the urgency to move towards a more sustainable industrial development pathway and sustainable consumption, the Vietnamese government has launched the Vietnam Green Growth Strategy for the period between 2011 and 2020, aiming to reach “a decisive tendency in sustainable economic development” by 2050 (Nguyen et al., 2017). The Vietnam Green Growth Strategy emphasizes on climate change mitigation, green production and green lifestyle. Past worldwide researches highlighted the impact of individual consumption on environmental quality and suggested consumer action can address ongoing environmental concerns (Barr and Gilg, 2006; Bonini and Oppenheim, 2008). One action which could be easily taken by consumers is the choice of purchasing green products, also known as environmental friendly products. These products are defined as doing no or the least to nature, humans and animals during its production and consumption and does not contain any was material either in its package or in itself (Ottman, 1993; Elkington et al., 1990; Moisander, 2007). The purchase of these green products is called green consumption. For successful expansion of green consumption into Vietnamese market to reduce environmental issues, green producers should first identify what leads Vietnamese consumers to purchase green products and then design the most effective marketing strategies on the basis of their findings.

#### *Research gap*

Green consumption has emerged as an academic concept in developed nations since the 1960s, and received great attention from marketing scholars (Ellen et al., 1991; Pickett et al., 1993). Numerous studies have concentrated on determinants of green consumption (Kim and Choi, 2005; Kim et al., 2009) and attempting to link green consumption with perceived consumer effectiveness, environmental concern and environmental knowledge (Aydin, 2016). Despite a consistent relationship between environmental concern and green consumption has been established throughout extant studies (Mostafa, 2007; Mainieri et al., 1997), Straughan and Robert (1990) claimed that the existence of environmental concern alone is not useful in explaining the variability of green purchase behavior. Green purchasing or green consumption remains a brand – new concept in Vietnam. Previous studies on green consumption in Vietnam are limited to attempt to explore relationship between materialism and green consumption or apply the theory of planned behavior to explain green purchase behavior (Nguyen et al., 2017; Nguyen et al., 2016). The role of perceived risk, trust and environmental concerns which have been proved significant in other consumption behavior are intact. Little empirical attention has

been devoted to identify a multidimensional conceptual model to reveal what are key factors influencing Vietnamese consumers' green consumption.

A comprehensive review of literature has confirmed the relationship between materialism and green consumption (Nguyen et al., 2017; Nguyen et al., 2016; Kim and Choi, 2005). This study aims to contribute to the existing literature by incorporating perceived risk, trust and corporate environmental concern to these relationships. The paper is structured as follow: first, a comprehensive review of literature and previous findings will be provided, followed by an explanation of research methodology in details. Then an in-depth analysis of results will be provided and last a discussion of findings, implications, limitations and some suggestions for future research will be present.

#### *Defining the green consumption*

Mainieri et al. (1997), along with Kim and Choi (2005) defined green consumption as a consumption of products that leave minimal impacts on the environment. Earlier in the literature Simon (1995) explained that a good can be qualified as green product if it is produced either by minimizing used inputs, utilizing recyclable materials, requiring less energy for production or having minimal or no packaging in use. This study has decided to focus on purchase intention rather than behavior, because intention has been used as a predictor of actual behavior (Ajzen, 1991).

#### *Environmental concern*

Lee et al. (2014) defined environmental concern as public attitudes about the environment, reflecting the considerations about threats related to the environment. Mainieri et al.(1997) posited that consumers with a deeper concern for the environment would be more likely to purchase green products in comparison with other customers. Based on this argument, the following hypothesis is proposed:

$H_1$ : Environmental concern is positively correlated with green purchase intention

#### *Materialism*

There is not a universally accepted definition of materialism. Belk (1985) based on psychological perspective viewed materialism as the importance a consumer placed on worldly possessions. Richins and Dawson (1992) defined materialism as a consumer value in which three sub – constructs were identified: a) defining success (the extent to which one uses possession as an indicators of success and achievement in life), b) acquisition centrality (the extent to which one uses possession to indicate their success and achievement in life, c) pursuit of happiness (the belief that

possessions are essential to satisfaction and well – being in life). The relationship between materialism and green behaviors has multifaceted dimensions. Alexander and Ussher (2012) in line with Brown and Kasser (2005) proposed that consumerism and materialism would lead to socio – economic issues, for instance, environmental problems. Some empirical studies showed a negative link between materialism and environmentally – responsible behaviors (Good, 2007). However, Andreou (2010) in concurrence with Karabati and Cemelcilar (2010) reported a positive relationship between materialism and green consumption could not be confirmed because of limitations regarding measurement scale. In the context of emerging economies, a recent research ran by Strizhakova and Coulter (2013) pointed out a positive correlation between materialism and environmentally friendly behaviors. Nguyen et al. (2016) employed Richins and Dawson (1992)’ scale items to measure materialism found a positive association between the “happiness” facet of materialism and green purchase intention. From the above literature, the following hypotheses are proposed:

*H<sub>2</sub>*: “Success is negatively correlated with green purchase intention

*H<sub>3</sub>*: “Centrality” is negatively correlated with green purchase intention

*H<sub>4</sub>*: “Happiness” is positive correlated with green purchase intention

#### *Perceived risk*

Perceived risk is the consumer’s subjective assessment of the probability of making wrong decisions when purchasing the product (Bauer, 1960). If consumers perceive high risk towards a product, they would be reluctant to trust the product (Mitchell, 1999). On the other hand, if consumers perceive low risk towards product consumption, they will reduce their skeptics and are more willing to consume the product. It is therefore hypothesized that:

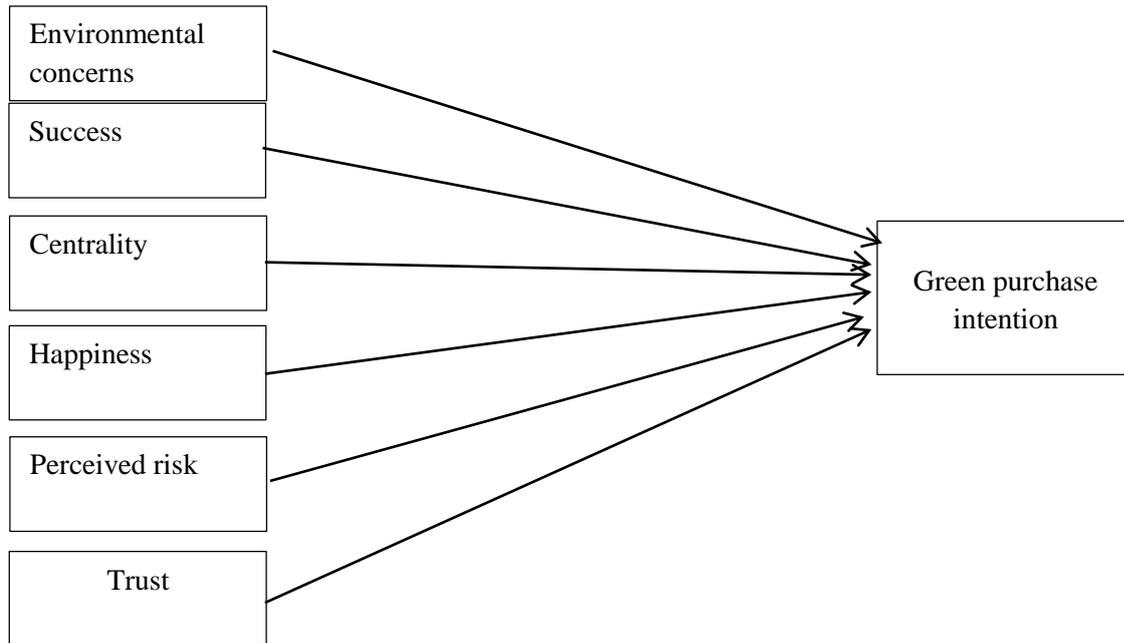
*H<sub>5</sub>*: Perceived risk is negatively correlated with green purchase intention

#### *Trust*

Customer trust was posited from past literature as a determinant of consumer purchase intention (Schlosser et al., 2006). Previous research shows that customer trust would positively affect customer purchase intentions (Schlosser et al., 2006; Lu et al.,2010) indicate that customer trust positively affects customer purchase intentions. Chen (2010) and Chen and Chang (2012) put forward this idea by indicating that green trust would influence consumers’ purchase behaviors in the environmental era.

*H<sub>6</sub>*: Trust is positively correlated with green purchase intention

**Figure 1: A proposed conceptual framework**



## **2. Methodology**

### *Data collection*

Using the convenience sampling method, the data was gathered by surveying people living in Hanoi. Known as the capital of Vietnam, environmental issues in Hanoi are usually prioritized to solve. High income and living standard in Hanoi, along with its easy access to green products make it a potential research location (Nguyen and Smith, 2012; Nguyen et al., 2013). Questionnaire was distributed in both online and offline setting. All questionnaires were administered by the same researcher to control external variables. To ensure the representability of the sample, researchers aimed to approach people from different genders, age cohort, occupations, education and level of income. Among 133 respondents, 75.4 percent were females, 69 percent were at the age of 25 – 34. Additionally, in terms of socioeconomic status, 64.6 percent were students and 13.8 percent were working in the public sectors.

### *Measurement of variables*

The questionnaire used in this study contained the measures for environmental concern, materialism, perceived risk, trust and intention towards purchasing green products. Researchers adopted scale items from Kim and Choi (2005) to measure environmental concern. The measurement of materialism in general and its three facets was adopted from Richins and Dawson (1992). The scale items measuring perceived risk were derived from William and Hammit (2001). Following extant literature, trust was measured with the use of Berg et al. (2005) and Huynh and Ho

(2013)' scale items. All measured used a five – point Likert – type response format, with “strongly disagree” and “strongly agree” as anchors.

*Data analysis*

SPSS statistical package software was used to test proposed hypotheses and regression was used to reveal the relative importance of the determinants. A principal component analysis was run with the items to test the factorial validity of the scale. A series of exploratory factor analyses were applied to further purify measurement indicators; the factor structure of the study model is supported for reliability by the Cronbach’s alpha and so on. Exploratory factor analysis was chosen to define the theoretical framework for this study. Varimax rotation was employed to the principle components in order to extract factors on the same scale that failed to exhibit significant loading on the construct. This research conducted a strict a priori decision criterion to discard factor loadings of 0.6 (Hair et al., 2009) and the components with Eigenvalue greater than 1.0 were retained. The analysis revealed 33.9 percent of the variance is contributed by seven factors, and these are defined as follows: environmental concern (three items), materialism “success” (three items), materialism “centrality” (three items), materialism “happiness” (five items”, perceived risk (six items), trust (six items). The values of alpha ranged from 0.75 to 0.95 which validate reliability of scale measurements. The results of EFA, Cronbach’s alpha, along with mean, standard deviations, and correlations for all variables used in this current study are presented in Table 1.

**Table 1: Descriptive statistics and results of the exploratory factor analysis**

<b>Variables and the measurement items</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Factor loadings</b>
<b><i>Environmental concern</i></b> (alpha = 0.823)			
I am worried about the environment	4.188	1.1416	.872
Mankind is severely abusing the environment	4.266	0.9840	.908
The balance of nature is very sensitive and easily deteriorate	3.875	1.0039	.721
<b><i>Success</i></b> (alpha = 0.809)			
I admire people who own expensive homes, cars and clothes	3.664	.9743	.694
Some of the most important achievement in life include acquiring material possessions	3.758	.8671	.683
I place much emphasis on the amount of material objects people own as a sign of success	3.492	.9136	.657
The thing I own say a lot about how well I’m doing in life	3.461	.9127	.371
I like to own things that impress people	2.570	.9613	.807

<b>Variables and the measurement items</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Factor loadings</b>
<b>Centrality</b> (alpha = 0.755)			
I try to keep my life comfortable, as far as possessions are concerned	3.250	.8418	.459
The things I own are all that important to me	3.750	.7736	.733
Buying things give me a lot of pleasure	3.633	.8499	.800
I like a lot of luxury in my life	2.539	.9860	.463
<b>Happiness</b> (alpha = 0.879)			
I haven't got all the things I really need to enjoy life	3.195	.9860	.604
My life would be better if I own certain things I don't have	3.367	1.0815	.787
I would be any happier if I owned nicer things	3.445	.9624	.784
I would be happier if I could afford to buy more things	3.227	1.0212	.794
It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like	3.055	.9417	.620
<b>Perceived risk</b> (alpha = 0.890)			
Products that I purchased are not meeting my requirements	3.20	0.81	.657
I meet obstacles while using currently owned products	3.19	0.84	.764
I wasted money on unsafe products	3.41	0.91	.864
It takes me a lot of time and effort to afford clean products	3.53	0.84	.775
I face psychological pressures to purchase currently owned products	3.27	0.88	.729
Life is full of risks	3.62	0.96	.786
<b>Trust</b> (alpha = 0.899)			
I believe that the quality of goods (including food) have been greatly improved	3.27	0.92	.684
I believe consumer protection organizations are trying to improve citizens' lives	3.31	1.00	.801
I believe goods (including food) that I am using daily are good for my health and the community	3.00	0.96	.808
My belief on the improvement of quality of goods is growing	3.21	0.94	.786
I believe in the government's efforts to implement environmentally friendly product (including food) standards.	3.31	0.97	.810
I am confident that today's manufacturers are responsible for the community in the production of safe (including food) products.	2.93	0.96	.739

Before entering data into multiple regression for analysis, correlations were checked among the variables in this study. All independent variables (environmental concerns, success, centrality, happiness, perceived risk, trust) are significantly correlated with green purchase intention. Correlation coefficients lie in the range of 0.1 to 0.8. Table 2 presents result of the correlation coefficient between six independent variables and one dependent variable.

**Table 2: Correlation coefficients**

	Environmental concerns	Success	Centrality	Happiness	Perceived risk	Trust	Green purchase intention
Environmental concerns	1			.189*	.113	.167	.202*
Success	.278**	1	.443**	.699**	.393**	.371**	.275**
Centrality	.087	.443**	1	.468**	.488**	.393**	.382**
Happiness	.189*	.699**	.468**	1	.393**	.532**	.315**
Perceived risk	.113	.393**	.488**	.393**	1	.383**	.425**
Trust	.128	.371**	.393**	.532**	.383**	1	.494**
Green purchase intention	.202*	.275**	.382**	.315**	.425**	.494**	1

Note: \* $p < .05$ , \*\* $p < .01$

Hypothesis testes were carried out by using multiple regression to reveal their level of significance (Cohen et al., 2003). The variance inflation factors were examined and all were found to be within the range of 1.01 to 2.41. Thus the result is not contaminated by multicollinearity (Hair et al., 2009). The regression results supported  $H_1$  ( $\beta = .135$ ,  $p < 0.1$ ) which confirms a positive link between environmental concerns and green purchase intention. During analysis, it was found that consumers with higher centrality facet of materialism will have higher purchase intention towards green products ( $\beta = .149$ ,  $p < 0.1$ ), thus rejecting  $H_3$ . However, contrary some previous studies (Nguyen et al., 2017), the success and happiness facet of materialism are not significantly correlated with purchase intention of green products ( $\beta = -.017$ ,  $p > 0.1$  and  $\beta = -.446$ ,  $p > 0.1$ ), therefore, the study rejects  $H_2$  and  $H_4$ . Possible explanation for this will be offered in the next session. In terms of perceived risk's relationship with green purchase intention, this analysis found a strong positive effect which is in contrast with the literature (Ho et al., 2013) with  $\beta = .224$ ,  $p < 0.01$ ), thus  $H_5$  is rejected. In  $H_6$ , the hypothesis was that trust will have a positive relation with purchase intention. The analysis supports this hypothesis ( $\beta = .365$ ,  $p < 0.001$ ). The results of hypothesis testing are summarized in Table 3.

**Table 3: Regression results**

<b>Variables</b>	<b>Model (standardized)</b>
Environmental concerns	.135*
Success	-.017
Centrality	.149
Happiness	-.446
Perceived risk	.224***
Trust	.365****
$R^2$	.339
Adjusted $R^2$	.306
F	10.253****
Note: *p < 0.1, **p < 0.05, ***p < 0.01, ****p < 0.001	

### **3. Discussion and Conclusion**

With the examination of factors suggested by the previous literature, the primary task of this section is to make sense of the hypotheses that were confirmed and give potential interpretations for those that were not supported. According to previous section, environmental concern is positively related to green purchase intention. This is in concurrence with the findings from extant studies (e.g: Suki & Suki, 2015). The result of this study provided novel insight into environmental concerns of Vietnamese consumers with regards to green products.

Second, the impact of materialism which is formed by success, centrality and happiness, was examined. In this study, the findings reported out of three facets, only centrality has a positive effect on purchase intention of green products. This is inconsistent with the findings of Nguyen et al. (2017). We offer one explanation for this result as urban consumers in Vietnam with a high level of centrality may see green consumption is a trend in Vietnam and the consumption of green products could bring comfort to consumers' material life. However for better understanding of the relationship between materialism and green purchase intention, further studies are needed.

Third, in this study, perceived risk was found to be positively correlated with green purchase intention of consumers. This finding is inconsistent with past suggestion of positive relationship between perceived risk and green consumption (e.g: Ho et al., 2013). One plausible interpretation for perceived risk's positive relationship with green purchase intention could be the participants in the current research are younger in general. They have a high level of confidence in spending

and thus believe in their ability to make the right purchase decision. Another possible explanation for this positive relationship is when perceived risk is about the environment, consumers will be more likely to be involved in environmental protection activities, including moving towards green purchase.

Furthermore, trust is reported to have the greatest influence on purchase intention of green products. This is consistent with previous findings of Ho et al. (2013), suggesting that if the consumers believe in producers, governments and consumer protection organizations' ability to control food hygiene and safety; they will be likely to purchase the products.

The findings of this study provide a theoretical contribution to the literature of green purchase intention, environmental concerns, perceived risk, trust and materialism in Vietnam. First, the key contribution of this study is the establishment of environmental concerns, perceived risk and trust as important antecedents in the development of green purchase intention among Vietnamese consumers. Second, the study has highlighted the role of centrality facet of materialism as a motivation of purchase intention of green products.

Moreover, this study indicates that the green product producers, along with the government and consumer protection organization can attempt to promote the trust in consumers by developing and implementing food hygiene and safety programs, minimizing or labelling GMO products. Strict regulations on food quality control should be launched. Economic tools, such as FDI or ODA fund should be used to encourage cooperation with foreign organizations to develop technologies and techniques for green projects.

Managers also should design effective communication strategies focusing on the status dimension of green products to consumers who buy and consume these products. Public campaigns, such as Earth Hour program calling for households and businesses to turn off electric lights and electrical devices could be useful in order to bring the perception of green consumption closer to consumers.

Several limitations of this study need to be recognized. First, this study used a convenience sampling method which may lower the generalizability of its findings. Second, this study was conducted in Vietnam, the capital of Vietnam. Green consumption behavior may vary across areas with different tastes and social development. It therefore would be fruitful to examine the green purchase intention in other cities and compare the findings to provide a complete picture of consumer behavior in Vietnam.

In this study, we tested the direct impact of environmental concerns, perceived risk, trust and materialism on green purchase intention. Future studies may want to

explore the full mechanism in which these factors influence purchase intention of green products by adding moderators and mediators.

Another agenda for future research is that a cross – cultural study could be conducted between Vietnam as an emerging country and other developed countries to shed some lights on the impact of cultural differences on green consumption. In the future studies, impacts of demographic factors, such as gender, age, income level on green purchase intention should be explored.

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# **PARTY LEADERSHIP FOR ENVIRONMENTAL PROTECTION IN SUSTAINABLE DEVELOPMENT IN VIETNAM**

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## **Abstract**

*The development of the economy is increasingly strong, people use natural resources indiscriminately not only make these resources become exhausted quickly but also make the environment polluted, serious crisis. Recognizing the impact of the environment on sustainable development, the Communist Party of Vietnam has many points of view to direct environmental protection. "Economic development associated with environmental protection"... is the correct revolutionary perspective that the Party has persevered in pursuing and implementing throughout the process of Vietnam's revolutionary leadership. Consistent views throughout the leadership documents and the Party's direction on environmental protection are: "environmental protection is one of the vital problems of mankind; is a factor to ensure people's health and quality of life; make an important contribution to socio-economic development, political stability, national security and to promote our country's international economic integration". Our Party affirms, harmoniously combining socio-economic development with environmental protection and improvement towards sustainable development.*

**Keywords:** *Environmental protection, Communist Party, environment, Sustainable development*

## **1. Introduction**

Pollution and environmental degradation is one of the problems that human beings are facing in parallel with poverty and AIDS epidemics ... These problems are threatening the existence and development of the fruit. Therefore, the environment is also synonymous with protecting the living environment, ensuring that all people can live in a clean and clean environment, contributing to improving the health and quality of life of the people, At the same time, it is an important content of sustainable development.

Modern scientific and technological revolution of the developing world with a fast pace, creating breakthrough achievements, rapidly changing the socio-economic and human development. Besides the brilliant achievements in science and technology, people are also facing political, cultural, social and especially environmental challenges. The development of the economy is increasingly strong, people pay more attention to the issue of profits and revenues to ensure the living life that accidentally or intentionally harms the environment. People use natural resources indiscriminately, improperly, not only to make these resources become exhausted quickly but also make the environment polluted and serious crisis. Recognizing the impact of the environment on sustainable development, the 11th Party Congress stated that “Environmental protection is the responsibility of both the political system, the whole society and all citizens. To closely combine control, prevention and overcoming of pollution with the restoration and protection of ecological environment. Develop clean energy, clean production, clean consumption. Promote research, forecast and response to climate change, natural disasters. Strengthening effective management, protection and use of national resources ”(Vietnam Communist Party (2011), page 42.43). This article analyzes the Party's view on environmental protection in sustainable development in Vietnam.

## **2. Method**

The article combines the use of analytical methods - synthesis; logic - history; system - structure, study text, interdisciplinary social sciences.

## **3. Results**

The paper focuses on studying the Party's guidelines and policies on environmental protection in sustainable development in Vietnam over time, clearly showing the importance of environmental issues in Current Vietnam and proposals for environmental protection of the Party aiming to orient socio-economic development activities towards sustainable development.

## **4. Discussion and Conclusion**

### ***4.1. Perspective on sustainable development.***

In the world or in each region and in every country there are many pressing issues that are common. The more economic growth, the scarcity of materials and energy due to the exhaustion of non-renewable resources is increasing, the more natural environment is destroyed, ecological balance is broken. , leading to the revenge of nature causing extremely catastrophic disasters.

It is the economic growth that is not in pace with progress and social development, sometimes contrary to social development. Specifically, there is

economic growth but no social progress and justice; economic growth towards industrialization, urbanization, leading to rural distortion; economic growth but the income of workers does not increase; economic but cultural and moral growth is depressed; Economic growth has further elucidated the differentiation between the rich and poor in society, leading to social instability and this has become one of the hottest issues in many countries. Therefore, the development process has a harmonious regulation between economic growth and ensuring social stability and environmental protection become an urgent requirement for the world.

The concept of sustainable development is formed from the reality of social life and has necessity. Thinking about sustainable development throughout the social production process, starting with recognizing the importance of environmental protection and recognizing the need to address instabilities in society. Therefore, in 1992, the United Nations Environment and Development Summit held in Rio de Janeiro set out the Global Agenda for the 21st century, in which sustainable development is confirmed: A development that satisfies the needs of the current generation without compromising the ability to meet the needs of future generations. Accordingly, the three pillars of sustainable development are defined as: Firstly, economically sustainable, or sustainable economic development is fast and safe and quality development; Secondly, social sustainability is social justice and human development, human development index (HDI) is the highest criterion of social development, including: per capita income; educational level, education, health, longevity, cultural and civilized enjoyment levels; Third, ecological and environmental sustainability is to rationally exploit and use natural resources, protect the environment and improve the quality of the living environment.

So far, the concept of sustainable development has gained a common unity and a goal to make sustainable development a millennium target.

In Vietnam, the topic of sustainable development has also received much attention in research circles as well as policy makers and policy makers. The concept of sustainable development is often approached in two aspects: Firstly, sustainable development is developed in the relationship of maintaining the environmental values, considering the ecological environment value as one of the The element that constitutes the highest values needs to be achieved by development. Secondly, sustainable development is a long-term development, for today and tomorrow; Today's development does not affect the future.

#### ***4.2. The Party's viewpoint and policy on environmental protection***

"Economic development associated with environmental protection" ... is the right revolutionary viewpoint that the Party has persevered in pursuing and implementing throughout the process of Vietnam revolutionary leadership, especially

in the medium-time renovation by. Consistent views throughout the leadership documents and the Party's direction on environmental protection are: "environmental protection is one of the vital problems of mankind; is a factor to ensure people's health and quality of life; an important contribution to socio-economic development, political stability, national security and promoting international economic integration of our country "and" Investment in environmental protection is investment for distribution. sustainable development ". Fully aware of the role of the environment and environmental protection, our country has actively participated in international conventions and agreements on the environment. It can be mentioned as: Biodiversity Convention (May 1993) whose main goal is to conserve biodiversity, sustainable use of components of biodiversity and fair and reasonable sharing the benefits derived from the use of biological resources; The United Nations Framework Convention on Climate Change (November 1994) aims to stabilize greenhouse gas concentrations in the atmosphere at a level that prevents dangerous human interference with the system. climate; The Kyoto Protocol (September 2002) forces participating countries to commit to achieving specific greenhouse gas emission targets for each country; or Vienna Convention for the protection of the ozone layer (1994); Paris Agreement on combating climate change ... In general, these international documents affirm the importance of environmental protection and require participating countries to be more responsible for environmental protection activities.

The 11th Party Congress, the Party has linked environmental protection policies to social policies, building a scientific basis for the exploitation of natural resources. The 10th Party Congress, for the first time in the report on the orientation and tasks of socio-economic development in the 2006 - 2010 period, has set the environmental norm (forest coverage; use clean water, waste treatment targets) and "strengthen protection, improve the environment, protect natural resources"

The document of the 11<sup>th</sup> Party Congress once again demonstrates the Party's consistent view on environmental protection: environmental protection is both a goal and one of the basic contents of the Party. sustainable development, must be reflected in strategies, plannings, plans and projects on socio-economic development of each branch and each locality. Overcoming the ideology to focus on socio-economic development only and to take lightly environmental protection.

In order to concretize the viewpoints and guidelines on environmental protection, the Party has also issued a system of directive, uniform instructions and resolutions to create a strong change in awareness and action and innovation in leading, directing and organizing the implementation of environmental protection in the whole party and the whole society such as: Resolution No.41 of November 15, 2004 of the Politburo "Regarding environmental protection in the period promoting

industrialization and modernization of the country ”. This is an important step in demonstrating the Party's views on environmental protection in our country during the period of industrialization and modernization of the country.

Facing the risk of exhaustion of resources, environmental pollution and complicated developments of climate change, the 7th Plenum of the 11th Central Committee issued Resolution No.24 on "Actively responding to variables climate change, strengthening resource management and environmental protection ”. The concept of environmental protection is once again confirmed: The environment is a global issue. Environmental protection is both a goal and a basic content of sustainable development. Strengthening environmental protection must follow the motto of conducting harmony with nature, according to natural law, prevention is the main; combine to control, overcome pollution, improve the environment, preserve nature and biodiversity; taking protection of people's health as a top target; resolutely eliminate projects that cause environmental pollution and affect public health. At the same time, giving very specific objectives on environmental protection: Not to generate and thoroughly handle establishments causing serious environmental pollution; 70% of wastewater discharged into the river basin environment is treated; destroying and treating over 85% of hazardous wastes and 100% of medical wastes; reuse or recycle over 65% of domestic waste. Strive for 95% of urban residents and 90% of rural people to use clean and hygienic water. Safety control and treatment of environmental pollution due to war consequences. Improving air quality in urban areas, populated areas. Significantly improve the environment of craft villages and rural areas. Reasonable exploitation management, early termination of natural forest exploitation, increasing the area of nature conservation areas to over 3 million hectares; increasing forest coverage to over 45% .

#### ***4.3. Evaluation of the Party on the status of environmental protection and its causes***

During the renovation period, environmental protection has achieved important results, such as the Resolution of the 12th Party Congress (2016) evaluated: The system of laws, mechanisms and policies on natural resource management and protection The environment and climate change response continue to be improved. Inspection and inspection of enforcement and handling of violations are focused. The management and use of land, water and minerals are more strict and effective. Basic investigation, potential assessment, reserves and resource valuation have progressed; more suitable exploitation and use according to market mechanism and more closely monitored. Pay attention to exploiting and effectively using renewable energy sources and alternative materials, which are environmentally friendly. Measures to protect the environment, prevent and treat seriously polluting facilities are actively implemented.

The rate of hazardous waste collection and treatment reaches about 75%; medical solid waste reaches 80%; the rate of establishments causing serious environmental pollution will be 90% by 2015. To pay attention to nature conservation, biodiversity, forest protection and development; Forest coverage increased, reaching about 40.7% in 2015. The proportion of urban population using clean water reached 82%, the proportion of rural population using clean water reached 86% in 2015. Natural disaster prevention, fighting and reduction are focused and achieved many results. The capacity of warning and forecasting of natural disasters is enhanced, the quality has been improved. Many projects to respond to climate change in combination with natural disaster prevention and combat have been implemented and enlisted the cooperation and support of many partners. These are practical and encouraging results in environmental protection, especially in the context of environmental pollution is particularly serious today.

It can be said that the Party affirms, harmoniously combining socio-economic development with environmental protection and improvement towards sustainable development. However, environmental protection in our country still has many limitations and weaknesses. Environmental pollution continues to increase, there are serious places, direct threats to people's health. Violations of the law on environmental protection are still happening complicatedly with increasingly sophisticated forms, causing social frustration; overcoming the consequences of environmental pollution caused by war is still difficult; biodiversity decline, the risk of ecological imbalance is happening on a large scale; The environmental protection of the industrial park has not yet met the requirements of environmental protection; Many serious environmental, natural and socio-economic consequences have occurred because the requirements of environmental impact assessment are ignored or not strictly implemented; The system of legal documents on environment is not synchronized; the promulgation of documents on environmental protection, documents guiding under the Law are sometimes slow, some contents are still inadequate, difficult to implement or not effective; Organize the state management apparatus on environmental protection at all levels to consolidate but the quality of activities is still limited; The source of environmental funding (1%) is still low; Besides, it has not been arranged for the right purpose and used ineffectively, failing to meet the requirements of environmental protection in the current period.

Looking at the reality of our country today, the Resolution of the 12th Congress frankly acknowledges: State management on natural resources, environmental protection, response to climate change in many aspects is still limited; laws and policies are incomplete; inspection, inspection, supervision and handling of

violations not strictly. The environmental pollution is slowly improved; environmental pollution in many places is still serious, especially in some craft villages and river basins; handling of environmental violations is not serious. The sense of environmental protection of a part of people and businesses is not high. Many natural ecosystems, especially forest ecosystems, wetlands and marine vegetation have reduced in both area and quality. Forest protection is still inadequate, forest fires and forest fires still occur. Many species and precious genetic resources are at high risk of extinction. The remedy of the consequences of environmental pollution caused by the war is still difficult ... Use of renewable energy (biomass electricity, wind power, solar power, ..) is still low. This is a limitation, weaknesses need to be overcome quickly.

The shortcomings and limitations in environmental protection in the past time due to many subjective and objective causes. The sense of environmental protection of the people has not really become a habit, there are still acts of discharging and polluting the environment in public places. Some committees and authorities are not fully aware of the significance and importance of environmental protection and sustainable development tasks, and have not seen all the roles and responsibilities in environmental protection. The participation of the whole political system in the inspection and supervision of law enforcement and environmental policies has not been positive and effective; also thought to overlook the issue of environmental protection while issuing policies on socio-economic development; the review and integration of environmental issues in socio-economic development plannings and plans, branches, domains and territories are not well implemented; The application of economic measures in environmental protection has not been effectively implemented. Lack of mechanisms and policies to mobilize the participation and contribution of the community as well as the whole society in the work of environmental protection.

#### ***4.4. Party views on solutions to environmental protection***

Over 30 years of renovation, our country has a completely new look. From a country devastated by war and a chronic economic crisis, Vietnam has risen and become a country with an average economic growth rate of 6.5% per year and belongs to a group of fast-moving countries. the strongest development in the region. However, the rapid economic development is associated with the risk of environmental pollution, which is a threat to the sustainable development of the country. From the assessment of achievements and limitations in environmental protection, the Party proposed specific directions, tasks and solutions for socio-economic development. That is:

*First:* to sustainably develop the country, it is necessary to have a balanced and harmonious combination between the three contents: economic development,

ensuring social progress and environmental protection. "Harmonious development of width and depth, focusing on depth development; developing knowledge economy, green economy. Economic development must be closely linked to cultural and social development, environmental protection, proactive response to climate change (Vietnam Communist Party (2016), page 270)

The overall objective for economic development and environmental protection in the coming time is "Actively responding to climate change, effective management of resources and environmental protection" (Vietnam Communist Party (2016), page 271]. From that goal, our Party particularly emphasizes economic development and marine environmental protection. "Accelerating basic surveys on marine and island resources. Strengthening research, application of science and technology, promoting international cooperation in the effective and sustainable exploitation of marine resources" (Vietnam Communist Party (2016), page 289). In the face of seriously polluted environment, natural disasters and climate change are increasingly complicated, seriously affecting people's health and life, in order to effectively protect the environment, the 12th Party Congress states " To prioritize investment in infrastructure projects to meet the requirements of responding to climate change and sea level rise. To step by step form an urban system with synchronous, modern, green and environmentally friendly infrastructures, especially big cities. Improve quality and well manage urban planning, ensure sustainable development, have policies to build new urban areas along big cities, effectively exploit infrastructure and save land" (Vietnam Communist Party (2016), page 294-295)

Therefore, we must consider environmental protection as an important and inseparable content in the process of economic development. It is impossible to develop the economy at all costs but underestimating environmental protection. The integration of environmental factors in strategies, planning, plans and development projects of all levels and sectors must be properly concerned and taken seriously. Investment in environmental protection needs to have significant changes in the viewpoint of investment, investment levels as well as investment efficiency for environmental protection. Diversify investment financial resources for environmental protection through international organizations, individuals and socialize environmental protection activities.

*Second*, environmental protection benefits the whole society. That requires each organization, individual and household to participate in environmental protection activities. Environmental protection can only be successful and effective when active participation of both the political system and the whole society. Environmental protection is considered the culture and morality of people in civilized society. People must have cultural behaviors to the environment, nature, do not

conduct acts of environmental pollution and degradation but must be harmonious and friendly with nature.

*Thirdly*, overcoming pollution, degradation and environmental incidents is difficult and expensive. Preventing and limiting bad impacts on the environment is the most effective and appropriate method. If the work of preventing and limiting bad impacts on the environment is carried out scientifically, seriously and effectively, it will save a great amount of resources for the recovery and restoration of the environment later. The contents of environmental protection must be implemented right from the formulation, appraisal and approval of development strategies, policies, plans, plans and projects in order to avoid and prevent sources of pollution. Future. “Strict control of pollution sources. Effectively overcome environmental pollution left by the war. Planning and constructing concentrated waste treatment facilities by regions and commune clusters. Limit and proceed to basically prevent environmental pollution in craft villages, river basins, industrial zones and clusters, urban areas and concentrated residential areas in rural areas. Focus on thoroughly handling establishments causing serious pollution. Air quality control in urban areas has a high population density. Implementation of standards, emission standards and technology according to appropriate roadmap. Strengthen sustainable forest protection and development, especially coastal protection forests, watershed forests and special-use forests; conservation of nature, biodiversity, protection and regeneration of aquatic resources. Encourage the use of renewable energy and new materials, materials that are environmentally friendly.

*Fourthly*, environmental protection must be carried out regularly, long term and requires the leadership of the Party, the direction and uniform management of the Government as well as the participation of all levels, sectors and the whole society. This is an urgent task in the context of environmental pollution and degradation, which has been adversely affecting the people's health, living environment and sustainable development of the country. In order to effectively implement environmental protection, it is necessary to identify priorities, priorities and urgent issues to handle and solve.

*Fifth*, the State plays a very important role in environmental protection, representing the people to manage and protect the environment, bringing a clean and clean environment. "Strengthen state management, perfect the legal system, mechanisms and policies and implement synchronously proactive solutions to respond to climate change, prevent and combat natural disasters, manage resources and protect environmental protection. To attach importance to inspection, examination and strict handling of violations; and at the same time strengthen communication to improve people's awareness, awareness and responsibility”.

In the activities of environmental protection and natural disaster prevention, forecasting and warning work are particularly important. The 12th Party Congress must specify "Improving capacity of forecasting and warning of natural disasters, monitoring climate change. Enhance the responsibilities of the branches, levels and armed forces; promoting the role of the community and enterprises and strengthening international cooperation, effectively implementing natural disaster prevention and combat, responding to climate change and search and rescue. Improve resilience; mobilize resources for investment in projects and projects to cope with climate change, prevent and combat natural disasters; prevent and combat urban flooding. Timely move people out of the landslide area" (Vietnam Communist Party (2016), page 304,305)

Overcoming the situation of over-exploitation and inappropriate use of natural resources, causing great waste, the Party clearly indicated that "Exploiting and using minerals associated with environmental protection, minimizing raw export raw materials ... Exploiting and sustainable use of water resources ... ", not for immediate benefits but also destroying the environment and wasting resources.

Strengthening state management is necessary to meet the requirements of environmental protection in the new period: the period of industrialization, modernization and international economic integration. Completing institutions and environmental protection laws in the direction of clearly defining the rights and obligations of the subjects, combining resource management with environmental protection, improving the capacity of the apparatus and staff environmental management.

*Sixth*, promoting socialization of environmental protection. There are mechanisms and policies to encourage individuals, organizations and communities to participate in environmental protection. Strengthen the supervision of the community and mass organizations for environmental protection of enterprises, organizations and individuals. All organizations and individuals causing environmental pollution and degradation shall have to remedy, restore and compensate for damage. The environment is a national asset, the State as a representative is responsible for managing and protecting the living environment for the people, has the right to force organizations and individuals causing pollution and environmental degradation to pay compensation. often, overcome and restore the environment.

The Party also pointed out that the goal of environmental protection is basically, long-term is to achieve harmony between economic growth, social progress and environmental protection; Everyone has a sense of environmental protection and lives in a clean, clean, beautiful and natural environment. This goal covers all environmental protection activities to ensure sustainable development of the country

The way to build and develop the country in the direction of industrialization and modernization on the basis of protecting the living environment of the Party is comprehensive and in accordance with the development law of our country. The achievements of the reform process over the past three decades have proved the correctness of that innovation and innovation line of the Party. As a social leadership force, our Party gathers and unites the whole people to join hands to contribute and turn the policy of environmental protection of the 12th Party Congress into reality of life; Environmental pollution will be gradually overcome. In the not too distant future, along with the development of the economy, the living environment in our country will be on par with the countries with the best and freshest living environment in the world.

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# IMPACT OF INCREASING POPULATION TO THE ENVIRONMENTAL PROBLEMS IN VIETNAM

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## **Abstract**

*The dramatic growth of human population is putting a substantial stain on our environment. The increase of population forced construction, transportation, industrial production, agriculture, and mineral resource exploitation to increase to serve human needs. These are also the main emission sources causing environmental pollution in general and air pollution in particular. The authors collected data analyzing the changes in air pollutants in the 2007-2016 period, from which to analyze the sources of pollution and the results of the paper contribute to improving people's awareness of environmental protection and also offer some solutions to reduce environmental pollution in Vietnam*

**Keywords:** *Air and water pollution, Physical environment, Population and environment*

## **1. Introduction**

Population and environment are two closely related factors. The fluctuation of the population has many positive and negative impacts on the sustainable or unsustainable development of the environment, natural resources and nature environment is also responding to these impacts of human society.

The rapid explosion of the world population in general as well as Vietnam population in particular has caused big pressure exhausting the natural resources due to over-exploitation for the needs of housing, food production, industrial production. Rapid population growth also creates concentrated waste sources that exceeding the biodegradable capacity of the natural environment in urban areas of agricultural, industrial production, populated areas causing heavy pollution for surrounding environment.

The formation of cities, megacities and economic development makes the environment seriously degraded, land loss, forest loss, desertification. The supply of clean water, housing and green trees does not meet the population development. The

increasing pollution of air, water, and land environment requires specific short-term and long-term solutions.

The UNICEF report wrote: "World population growth has increased the seriousness of the ability to protect life of our planet." Therefore, understanding the current population growth situation, how population growth affect the environment will help us make specific decisions and actions to step by step prevent these negative impacts, restore and maintain parts of the environment which are degraded and polluted.

## **2. Research method**

Researching and using data information from the General Statistics Office, information on environmental phenomena, population growth in Vietnam as well as the world through media reports, official electronic websites in 2017, 2018. On the basis of those data, conducting the synthesis, analysis, comparison to draw key characteristics, rapid population growth trends in Vietnam and how it affects the environment. The article can partly help each individual citizen, as well as managers understand their responsibilities in environmental protection, together planning strategies from micro to macro to reduce the impact, influence of population growth to the general environment, together looking towards sustainable development.

## **3. Result**

### ***3.1. Basic concept of population and environment***

*The close relationship between population and environment has been concerned by many researchers and typically, we have:*

*Malthus' doctrine (1798, 1803, 1960) indicates that population growth always tends to outstrip the productive capacity of land resources. These results in consequences such as hunger, increased death rate or delayed marriage, narrowing family size, working to minimize population growth. Malthus argues that the demand of the population creates a direct limit to the availability of resources and, in contrast, the resource itself also establishes limits on population growth. This view has contributed to the concept of the 'tolerance limit' of the natural environment, thereby contributing to the establishment of environmental population policies.*

*The United Nations Population and Environment Specialist Group preparing for the 1994 World Population Conference also offers a similar model to measure the impact of population and resource and environment-related factors:  $I = P \times A \times T$*

- I: Level of impact on natural resources and environment.
- P: population size.
- A: Average of resources used per capita.
- T: The degree of destruction of resources and the environment due to the use of technology to produce a consumer unit

### ***3.2. Situation of Vietnam's population growth and impacts to the environment***

#### ***3.2.1. Situation of Vietnam population growth***

The population of Vietnam increased by an average of 2604 people per day. As expected in 2018, Vietnam will increase by 950,346 people and reach 97 million people by 2019. Natural increase of the population is expected to be positive because the number of children born is more than the number of death, which is 997,715 people and mechanics increase will be as negative as in previous years, which means that the number of people moving to Vietnam to settle down is less than the number of people leaving the country to settle in another country. The results of the census and statistics show that after 85 years, the population of Vietnam has increased by 5.3 times, while during the same period, the world population increased by only 3.6 times.

Vietnam is ranked 14th in the world in the ranking of countries and territories, while our total land area is only 310,060 km<sup>2</sup>, ranking 66th in the world. According to scientists from the United Nations, to ensure the convenience of life, the average population density should only be 35-40 people living on 1 km<sup>2</sup>. However, the current population density in Vietnam is 312 people / km<sup>2</sup>, which is 9-10 times higher than the standard population density, not to mention some big cities, with population density of up to 2,171 people / km<sup>2</sup> in Hanoi, 3,888 people / km<sup>2</sup> in Ho Chi Minh City. Even compared to China, the most populous country in the world, the population density of Vietnam is still 2-3 times higher and compared to other developing countries, it is 10 times higher.

#### ***Population growth rate has decreased but population size has still increased***

**Table 1: Growth rate and population of Vietnam in the period of 1950 - 2017**

<b>Year</b>	<b>Speed of population growth%</b>	<b>Vietnam's population (million people)</b>
1950	2,24	24,81
1960	3,07	32,67
1970	2,59	43,41
1980	2,26	54,37
1990	2,18	68,21
2000	1,12	80,29
2010	1,04	88.36
2017	1,07	95,41

*Source: General Statistics Office of Population during the period of 1950-2017*

Our country had a very high population growth rate in the years 50,60, peaked at 3.08% in 1960. Rapid population growth affected the socio-economic development, especially in the context that the 2 regions, South and North, had their own strategic tasks. Therefore, on December 26<sup>th</sup>, 1961, Prime Minister Pham Van Dong signed to issue the first decision on giving birth with instructions. In 1975, the population growth rate decreased to 2.5% and fell to 1.9% in 1990 with positive contributions of population propaganda policies and programs. The population growth rate of our country decreased to the lowest rate in 2004 and 2005 with a rate of 0.92% and always maintained below 1.15%.

Thanks to the efforts of the whole society, the population growth rate of our country has actually decreased, but due to the large population size, our population continues to increase each year. According to the data calibrated in accordance with the average birth rate of the United Nations Economic and Social Division, by 2020, the country's population will reach more than 98 million and by 2050 it will be nearly 113 million.

**Table 2: Forecast of Vietnam's population in the period of 2020 - 2050**

<b>Year</b>	<b>Speed of population growth%</b>	<b>Vietnam's population (million people)</b>
2020	0,99	98,16
2025	0,79	102,09
2030	0,61	105,22
2035	0,48	107,77
2040	0,40	109,93
2045	0,31	111,64
2050	0,20	112,78

*Source: Effective data on average births, United Nations Economic and Social Division forecasts 2020-2050 period*

Together with reducing the rate of population growth, it is the trend that many women give birth to only one child, or decide not to have children. This has had a little effect on population size when Vietnam reached replacement fertility level in 2006, nearly 10 years earlier than expected. However, the decline in fertility level does not mean that the population size will decrease but it is still increasing in the coming years, the reason is that the number of women in childbearing age is increasing as a result of the previous population growth speed. Currently, according to statistics, only about one in every 1.5 women who enter the childbearing age passes the childbearing age, therefore, according to experts, depending on the fertility level, Vietnam will achieve maximum population size in 2040-2050, or 2060.

Another thing worth noting is that the quality of Vietnam's population is generally low. Although the population of our country is young (the proportion of the population in working age from 15 to 64 is 69.3%), the literacy rate is high (it is estimated that 94.52% of the adult population aged 15 and above can read and write) and life expectancy is high (76.6 years), but the rate of malnutrition in children is also high (the rate of stunting children is 24.6% in 2015), nutrition for pregnant mothers is lacking, the gap in living standards between population groups is large, low quality of labor, elderly life is not guaranteed. The Vietnam's HDI index is 0.683 in 2017, ranking 115th out of 188 countries compared.

### *3.2.2. Current state of air quality*

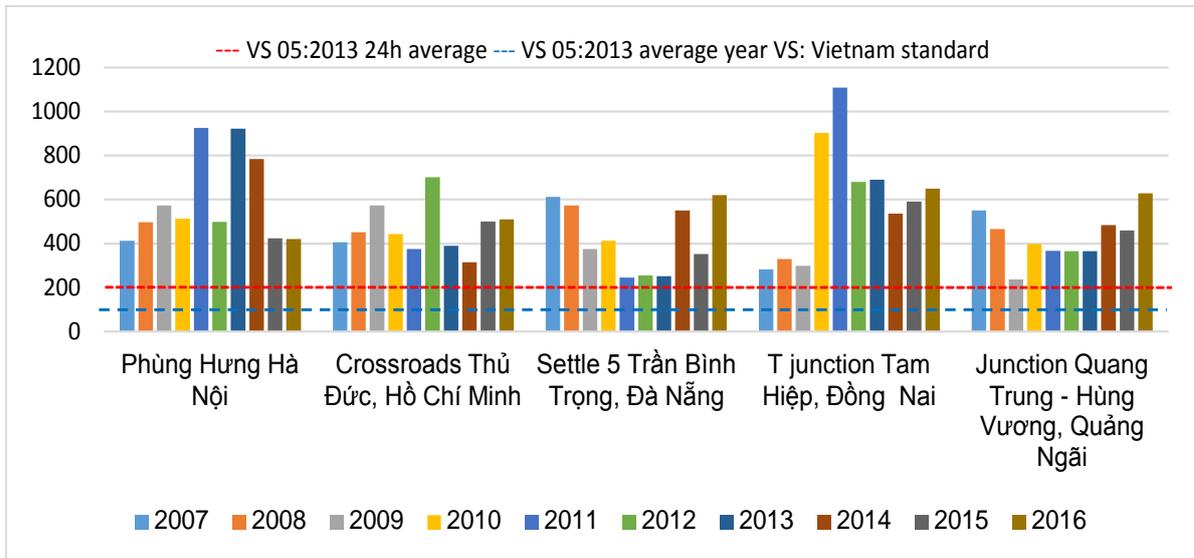
The air environment has a vital meaning to maintain the life of the Earth, especially human life. But the characteristic of the air environment is that it cannot divide the border, territory, also cannot privately owned or traded. Air pollution is an inadequate issue that needs alarming in urban areas, industrial zones or some trade villages in our country. Air pollution has a serious impact on health, respiratory system, quality of life of people, adversely affects the ecosystem and also causes climate change.

With the rapid growth of the population of the country in particular and the population of the world in general, air pollution is increasingly heavy through the speed of industrialization and rapid urbanization. The main air pollutants are: SO<sub>2</sub>, NO<sub>2</sub>, CO, H<sub>2</sub>S, lead (Pb) gas, suspended dust and volatile organic combustion like gasoline. According to the environmental monitoring data, the air in our country now has high pollution of dust and CO in trade villages, large urban areas, industrial parks, air quality of rural environment is still within the permitted limits. Within the scope of the article, the author would like to provide data on the main air pollutants: TSP, SO<sub>2</sub>, NO<sub>2</sub> as well as analyze some of the underlying causes of high pressure to air environment, but ask for permission to not synthesize all causes and numbers.

#### ***Dust pollution.***

According to the observation of indicators reflecting suspended dust pollution such as TSP, PM<sub>10</sub> (coarse dust) and PM<sub>2.5</sub> (fine dust) at monitoring stations on some traffic routes, the level of dust pollution in our country at present is still at a high level. The concentration of TSP dust has exceeded Vietnam standard 05: 2013 level from 2 to 3 times and often concentrates in large urban areas, most clearly expressed in special urban types.

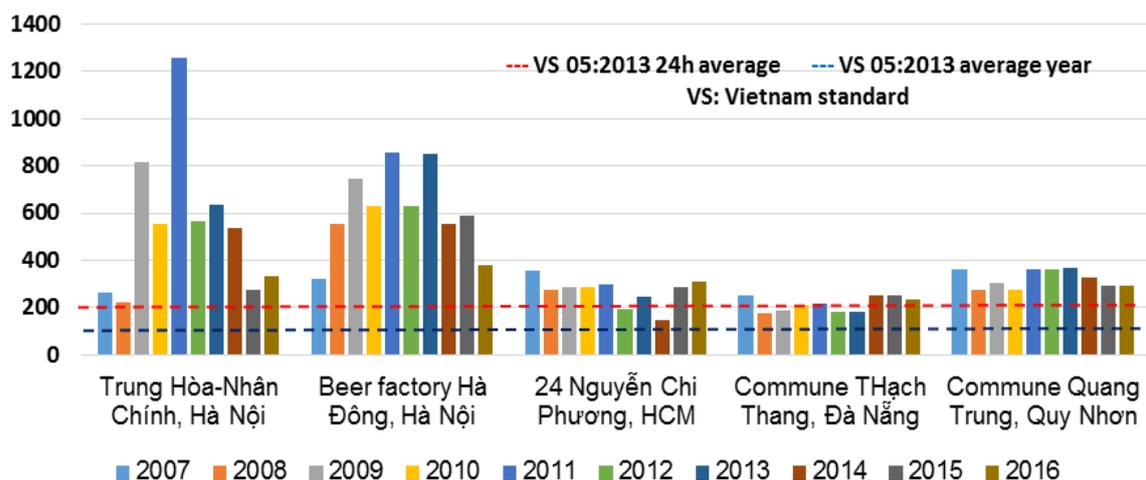
**Figure 2: Describe the average annual TSP concentration in the air around a number of traffic routes in the 2007-2016 period**



Source: General Department of Environment

Compared to traffic routes, the level of pollution in residential areas is many times lower, the further away from the traffic axis, the better the air quality. However, residential areas with large traffic density, the dust pollution level is still higher than the permitted level of Viet Nam standard.

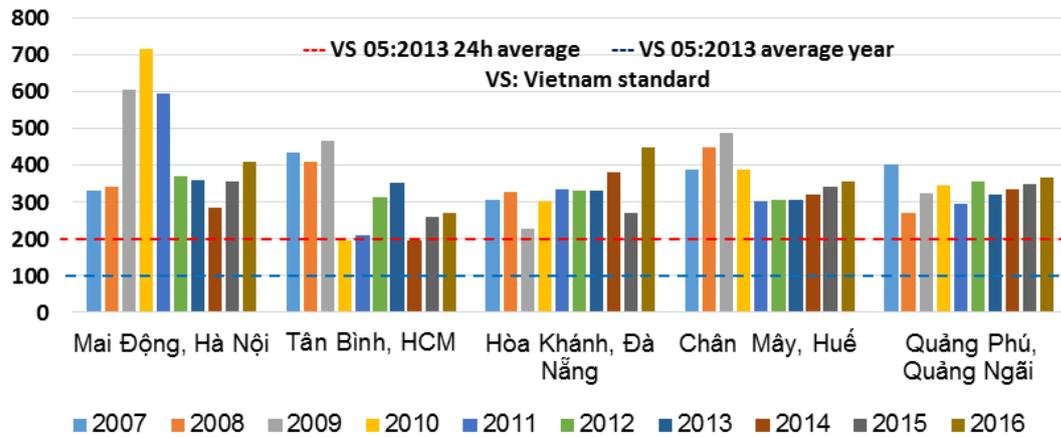
**Figure 3: The development of TSP concentration in the air around a number of residential areas across the country in the 2007-2016 period**



Source: General Department of Environment

For industrial parks, depending on the type of production, technological process, production scale and fuel used, industrial parks will emit different components and concentrations. But in general, these areas have TSP concentrations exceeding Vietnam standard limits from 1.5 to 2 times.

**Figure 4: Annual average TSP concentration around some of our industrial parks in 2007-2016**



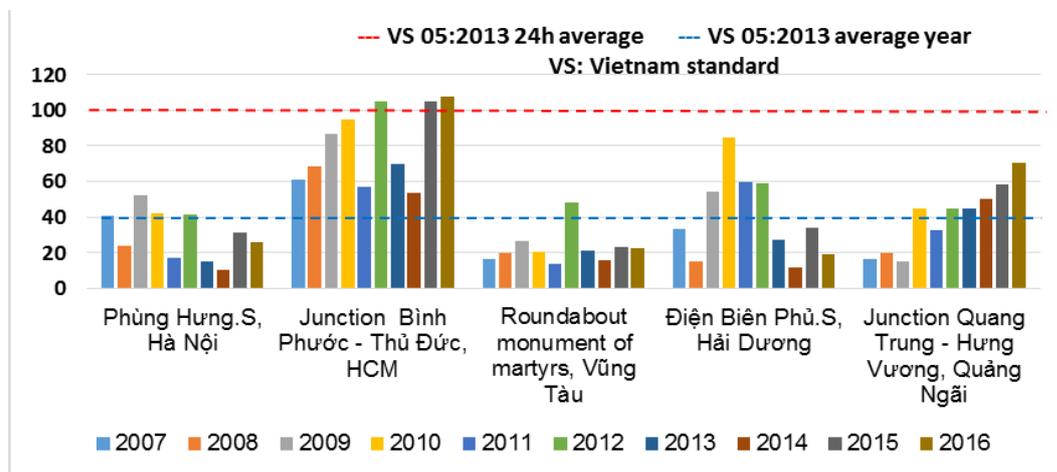
*Source: General Department of Environment*

According to the general analysis, dust pollution in our country is at a quite high level, however, the level of pollution always changes between the hours of the day, between the days and months of the year. Dust pollution, especially fine dust tends to focus in the winter months, with little rainfall for the North and North Central regions. For the southern provinces and cities with the differentiation of the dry and rainy seasons, the dust concentration is usually higher in the dry season and at peak traffic hours, lower in the rainy season and decreases at noon as well as at night in the day.

***Pollution of NO<sub>2</sub>, CO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub> gases***

NO<sub>2</sub> gas shows signs of pollution in areas with high traffic frequency. For other gases SO<sub>2</sub>, CO, the monitoring values are still lower than the Vietnam standard 05: 2013 standard limits, but these gases all have a higher increase during peak traffic hours.

*Figure 5: Movement of NO<sub>2</sub> concentration in the air around some urban roads in 2007-2016*



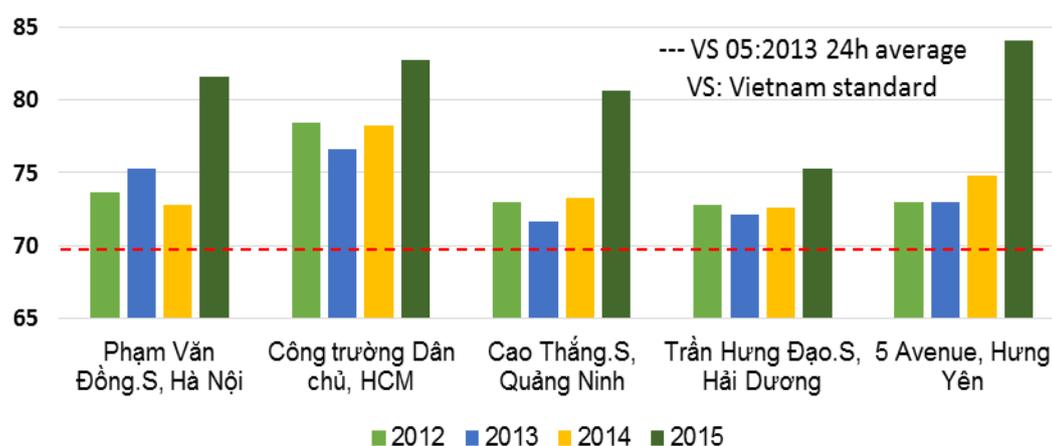
*Source: General Department of Environment*

In addition to toxic gas pollution, odor pollution also exists due to organic substances and nutrients stagnating in rivers, lakes and surrounding canals.

### *Noise pollution*

Another inadequate air pollution issue is the noise pollution. At traffic routes, noise pollution exceeds specified Vietnam standard 26:2010, however, the excess level is not great. This phenomenon takes place in both large and small cities.

**Figure 6: Movements of noise parameters due to ambient air in some urban roads in 2012-2015**



*Source: General Department of Environment*

In urban residential areas, the noise level is also quite high, but still within the permitted standards, except for some areas where there are construction sites.

### *3.2.3. Sources of pollution*

Vietnam is a developing country, with the 14th largest population size in the world, with a territory of only 310,000 km<sup>2</sup>. Populous pressure on socio-economic development has greatly affected the natural environment, as well as natural resources of the whole country. The larger the population size, the greater the emission sources causing pollution to the environment, notably in which is the air environment.

Due to the habit as well as living needs of different residential areas, the impact on the air environment of each area is also different. However, the main sources of emissions are: industrial production, transportation, construction and people, agriculture and trade villages, landfill and waste treatment.

### *Industrial production activity*

Along with the increasing population size is the rapid growth of industrial parks to produce goods to meet consumer needs, as well as to create jobs for laborer. Since 2002, our country has 80 zones, up to 2005 there are over 120 industrial parks and

currently according to data provided by the Department of Economic Zones Management, Ministry of Planning and Investment, 2016, the whole country has 328 industrial parks, 625 industrial clusters and 16 economic zones, mainly concentrated in the Southeast, Red River Delta and Southwest regions.

**Table 3: Estimated load of substances emitted into the environment from cement production**

<b>Emissions (million tons/year)</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
<i>Dust</i>	0,65	1,075	1,34
<i>CO2</i>	0,086	0,14	0,18

*Source: Institute of Building Materials, Ministry of Construction*

Many production facilities do not have toxic waste treatment equipment, do not meet the standards for emission standards causing air pollution in the region and local pollution around enterprises, factories, especially brick kilns, pottery manufacturing enterprises, coal-fired thermal power plants, copper-casting, steel-making, and chemical fertilizer plants. These hazardous substances often include groups of dust, groups of organic substances, heavy metals and group of inorganic substances, which are mainly NO<sub>2</sub>, SO<sub>2</sub> and TSP emissions.

**Table 4: Estimates the amount of substances emitted into the environment from construction material production**

<b>Emissions (million tons/year)</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
<i>Dust</i>	2,82	3,43	4,1
<i>SO2</i>	0,73	0,87	1,03
<i>CO2</i>	280,7	342,8	446,5

*Source: Institute of Building Materials, Ministry of Construction*

### ***Construction activity***

The population has increased, great pressure on infrastructure as well as the housing demand, therefore, in recent years; our country has promoted the construction of roads, bridges, apartment areas, new urban areas transporting materials and waste to everywhere. Activities of removing old buildings, landfilling, material transporting and wastes seriously pollute the surrounding environment, especially the air environment.

There have been many regulations on dust cover, washing the car before leaving the construction site or spraying to wash the road but the implementation is still limited and ineffective. Although construction activities over the past time have

contributed to reducing traffic congestion, creating significant changes in the landscape and gradually forming the transportation network according to planning, but this is also the source of spreading large amounts of dust pollution, emissions into the air environment such as SO<sub>2</sub>, CO, VOC ...

### ***People, activities of landfill and waste disposal***

For people's activities such as using fossil fuels, uncontrolled waste combustion increases the concentration of air pollutants: NO<sub>x</sub>, CO, CO<sub>2</sub>, SO<sub>x</sub>, HCL, HF, Dioxin, Furan and ash. Currently, because of improved living conditions, people have gradually replaced the use of toxic charcoal and wood stoves with gas stoves, induction cookers and electric stoves. However, with the increasing population size, the amount of waste discharged into the environment is still a big problem for planners.

Open-air garbage dumps are places where solid wastes with high organic ingredient are concentrated, under the impact of moisture, organisms, temperature, solid waste is decomposed and produces gases like CH<sub>4</sub> - 63.7% CO<sub>2</sub> - 33.3% and some other substances). According to statistics, CH<sub>4</sub> and CO<sub>2</sub> from domestic waste account for 19% of total gas emissions. The process of transporting waste also generates odors from the process of decomposing organic substances causing high pollution for the air environment.

### ***Transportation activity***

The population increases, the demand of using for traffic transportation also increases. However, in Vietnam, public transport is poor, so motorbikes are still the main means for the upcoming time. According to statistics, Vietnam is a second largest motorcycle nation in the world, in 2016, statistics recorded a number of more than 55 million motorcycles, motorbikes of all kinds, especially motorbikes after 22 years from 1995 to 2016 increased from 4 million to 52 million motorbikes, motorbike ownership rate reached 565 motorbikes / 1,000 people while the number of cars increased from 460,000 to 3.25 million vehicles (increased by 7 times). Car ownership rate in Vietnam is very low, reaching 35 cars / 1,000 people, only 1/10 to 1/20 of developed countries like the US and Japan. The means of transport using gasoline and diesel should generate many harmful gases into the air environment: VOC, Benzene, Toluen, NO<sub>2</sub>, SO<sub>2</sub> ... Besides, sand dust, soil and rock existing on the road due to vehicles carrying materials, due to garbage trucks... rises when the vehicles passing by are also a source of air pollution. Dust due to traffic is also caused by braking, tires with strong friction on the road surface, creating fiber dust, rubber dust ... *"According to statistics, there are up to 70% of dust and smoke polluting the air in Hanoi is due to traffic. With more than 4 million vehicles, transportation activity accounts for 85% of CO<sub>2</sub> emissions and 95% of volatile organic compounds*

*that are not observed by the naked eye.” Hanoi Department of Resource and Environment, 2016.*

### ***Agricultural and trade village activities***

Statistics show that livestock and poultry breeding industry discharge 75-85 million tons of waste a year, of which CO<sub>2</sub> - 9%, CH<sub>4</sub> - 37%, NO<sub>x</sub> - 35% and other substances H<sub>2</sub>S, NH<sub>3</sub>. Also according to the report of the Institute of Animal Husbandry, the concentration of H<sub>2</sub>S, NH<sub>3</sub> in animal waste is 30-40 times higher than the permitted level.

Cultivation activities in recent years are constantly increasing in quantity, accordingly, the dosage as well as the types of pesticides, plant protection products and chemical fertilizers have also increased significantly. In addition to the collection and handling of the packaging of the above medicines, the handling of excessive and indiscriminate use of these chemicals causes the smell and dispersal directly affecting the land and water as well as air environment, is not yet controlled.

Depending on the nature of each type of trade village, there has different environmental pollution, the most common source of air pollution in trade villages is due to the use of coal as fuel and the use of chemicals in the production process and waste to the environment containing a lot of dust, CO<sub>2</sub>, SO<sub>2</sub>, CO, NO<sub>x</sub> and volatile organic substance.

Livestock breeding, slaughter or food processing villages, due to the process of decomposing organic substance in waste water or in excess products, cause very unpleasant odor pollution, such as SO<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub> gases ... Fabric, silk weaving or leather tanning villages often discharge much of NO<sub>2</sub> and SO<sub>2</sub> gases. Handis often have very high levels of SO<sub>2</sub> gas or air pollution.

### **4. Conclusion and petition**

The population of Vietnam in particular, the world population in general still tends to increase rapidly in the coming years and its impact on the environment is becoming increasingly heavy. Protecting the environment has been and will be a vital issue of the whole world, of each country, of each family and each individual. Therefore, we need to take systematic, planning and thorough measures from the state, organizations, localities and individuals.

#### ***Controlling population growth.***

- Thoroughly grasping population work is one of the important contents of leading and management activity at all levels. Consolidating the organization of the apparatus of population and family planning work. The training, updating on new content, knowledge, plans and objectives is necessary.

- Strongly enhancing communication strategies, encouraging and supplying of population and family planning services in densely populated provinces and cities with high fertility. Create conditions for people to access quickly, smoothly and safely with reproductive health and children care services.

- Maintaining a reasonably low fertility and improving the population quality both physically and mentally.

*Sustainable development of production, economy and society*

- Building directions and policies for socio-economic development towards respecting, protecting the environment, green development and sustainable development.

- Improving people's working machines, updating new technologies for production lines to speed up the work efficiency and at the same time, reduce the level of dust and waste; managing the wastewater treatment processes to ensure the safety for the environment.

- Actively inspecting and reviewing large factories and industrial parks on a regular basis to help these units always comply with the state's environmental protection policy as well as quickly detecting and strictly punishing organizations that are violating regulations on environmental protection;

- Using alternative fuels such as wind, sun .. to replace fuels such as gasoline, oil, charcoal to prevent air pollution;

- Enhancing the planting of green trees in the living environment, strengthening afforestation and forest protection, protecting underground water sources and preserving ecosystems;

- Building a planned transportation system, strongly developing public transport means and changing the habit of using public transport instead of personal transportation means implementing policies to prioritize, encourage people to use public transport more often.

- Greening the living space by actively planting trees, condemning and strictly punishing those who destroy the environment, poachers ...

*Raising awareness, mobilizing people to participate in environmental protection.*

- Strengthening, coordinating among ministries to have propagation work, creating a strong consensus of the people with the task of protecting the environment. Thereby, it also guides and fosters professional knowledge for people to understand and have positive actions to prevent degradation, pollution and environmental incidents, together building a green, clean and beautiful environment.

- Implementing and promoting programs for all people involved in environmental protection.

- Integrating population issues into environmental protection planning

The environment has an great importance, encompassing the lives of people. If the environment is destroyed, human life is also destroyed. A significant part that causes environmental pollution and damage is the explosion of the population in Vietnam in particular and the world population in general, besides that; the people's awareness about the responsibility to protect the environment is not right and sufficient.

Our current necessary thing is to join the whole world together overcoming the phenomena of degradation, pollution, greenhouse gases, climate change, protecting the environment. At the same time, building and implementing measures to control population, raising awareness of the whole society, developing green technology research, sustainable socio-economic development orientations and respecting the nature.

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# IS INCOME FROM FOREST ENOUGH TO ENCOURAGE LOCAL COMMUNE BEHAVIOR TOWARDS NATURAL FOREST PROTECTION?

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## **Abstract**

*Setting up protected areas in order to combat tropical deforestation and biodiversity conservation has been widely practiced. In order to balance individual well-being and habitat preservation and to encourage the involvement of local people in protecting natural resources, the right of benefit from forest and direct payment are effective way to compensate the cost of resource maintenance. However, the income from forest for local people, especial minority ethnic people is insufficient to fully compensate opportunity costs of forest management and thus, does not motivate the households to manage forest in a sustainable way. In a case study in Dinh Hoa district, we have undertaken a Participatory Rural Appraisal (PRA) exercise to understand the local social patterns and income structures that are decisive on developing an influencing incentive regime for natural forest protection.*

**Key words:** *Income, Natural forest protection, Local commune, PRA*

## **1. Introduction**

Although the rate of deforestation slightly decreased in the 2000s compared to the 1990s, it is still alarming in many countries, especially in tropical regions where the loss of forest is the highest [1,2]. Subsistence farming, commercial farming, logging and fuel wood removal have been identified as direct causes of deforestation [3]. Commercial and subsistence agriculture are the proximate drivers and account for approximately 80% of global deforestation [4]. Effects of tropical deforestation on climate change, biodiversity conservation, and environment are a serious global concern since early 1990s. It is widely accepted that decreasing tropical deforestation is the most essential and cheapest alternative for mitigating global warming.

Setting up protected areas such as national parks and reserves is a common practice for combating tropical deforestation and biodiversity conservation. The area of forest where biodiversity conservation is designated as its primary function increased by more than 95 million hectares between 1990 and 2010. On the other hand, consistently growing populations exacerbate the problem of food security and result in increasing land use for subsistence and commercial agriculture. Limited land

resources and contradicting users' interests resulted in substantial conflicts in several parts of the world and seriously affected the livelihoods of local and indigenous communities in the vicinity of protected areas [5].

In 2010, Vietnam had a forest area of over 13 million hectares (ha), which is more than twice of the country's forest area in late 1940s. In Vietnam, forests are assigned to three forest utilization types that depend on the designation forest uses. The definition of three types of forests is given in Box 1 [6].

#### **BOX 1 FOREST CLASSIFICATION**

1/ Production forests are mainly used for production and trading of timber and non-timber forest products in combination with protection, contributing to environmental protection. Production forests include:

- a. Natural production forests;
- b. Planted production forests; and
- c. Seeding forests, including the selected and recognized planted forests and natural forests.

2/ Protection forests are mainly used to protect water sources and land, prevent erosion and desertification, restrict natural calamities and regulate climate, thus contributing to environmental protection. Production forests include:

- a. Headwater protection forests;
- b. Shielding protection forests, and
- c. Protection forests for environmental protection.

3/ Special-use forests are mainly used for conservation of nature, specimens of the national forest ecosystems and forest biological gene sources; for scientific research; protection of historical and cultural relics as well as landscapes; in service of recreation and tourism in combination with protection, contributing to environmental protection. Production forests include:

- a. National parks;
- b. Nature conservation zones, including nature reserves and species-habitat conservation zones;
- c. Landscape protection areas, including forests of historical or cultural relics as well as scenic landscapes; and
- d. Scientific research and experiment forests.

The use-rights and obligations of households differ according to the contracted forest type (Box 2 [7]).

**BOX 2 BENEFIT SHARING AND OBLIGATION OF FOREST CONTRACTED/ALLOCATED HOUSEHOLDS FOR PROTECTION**

1/ Households allocated special use are not allowed to harvest anything from forests.

2/ Households allocated protection forest can harvest timber not exceed 20% of total stand by selective cutting or not exceed 10% of basal area when forest are allowed to harvest. They can harvest bamboo not exceed 30% when bamboo forest cover reach 80%. They are allowed to collect deadwood and non-timber forest products (NTFPs ).

3/ Households allocated production forests are allowed to undertake agroforestry practice. They can harvest 100% from poor regeneration forest, 70-80% regenerated forest after shifting cultivation, and 95% of bamboo forest. They can collect deadwood, harvest timber not exceed 10m<sup>3</sup> to construct house.

Households contracted production forests can use by-products during silviculture treatments, interplant, graze cattle, benefit 1-2% of timber each year when forest reach harvesting age.

During the period from 1998 to 2006, the annual payment for natural forest protection was VND 50,000/ha (US\$ 2.4). Although the amount of payment increased to VND 100,000/ha/year (US\$4.8) in 2007, it is too low in term of labor cost, and did not adequately compensate forgone alternative uses. The payment is equal to 1-2% of household's incomes [8], and not attractive enough for the people to participate in the protection program in the long term. Furthermore, the right of local people to the forest are restricted by law. A major question concerning the adequate level of payments for individual household is its dependency on households' income, structure and utilization patterns. The current study presents an assessment of those factors for a case study in Dinh Hoa district, Vietnam.

## **2. Method**

### ***Study site***

Dinh Hoa is a district of Thai Nguyen province, located in Northeastern Vietnam, and has total land area of about 52,000 ha. The district consists of one town and 23 communes with a population of 87,000 people living in about 21,000 households and belonging to nine ethnic groups [9]. Dinh Hoa is one of the poorest districts in Thai Nguyen province where more than 70% of labor force is employed in the agriculture sector.

Forest area covers about 30,000 ha, representing 58% of total land area in the district. Half of the forest area is covered by natural forests which are substantially degraded and fragmented [10]. As many other mountainous districts in Northern Vietnam, the forests in Dinh Hoa have been over exploited since several decades. The major reasons for the forest destruction in the district are poor and passive management, conversion of forest lands into other land use, illegal logging, and slash-and-burn agriculture [11].

Starting in 1992, local households were allocated and contracted forests for management and protection. Approximately 7,000 households held more than 22,000 ha or 70% of the forestland, and the remaining 30% stayed under the management of village communities, commune committees, or the forest management board. A survey was conducted among local households, which manage more than two thirds of forestland, to understand the local voice and choice toward the payment policy.

We conducted a contingent survey including 300 randomly selected households from 6 communes in Dinh Hoa district in order to identify difference in their attitudes related to the three types of forests.

### ***Method***

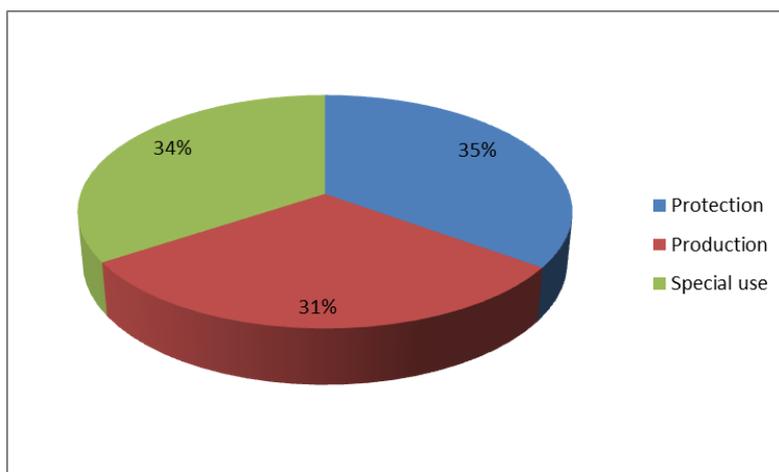
In recent years, there has been a widespread shift from top-down, forest-focused to bottom-up, people-centred approaches to forest management [12]. This shift has been widely seen as an alternative solution to the emerging problems of deforestation in most developing countries. Under most centralized forest policies, large management units are oriented to a single-use objective (such as timber production or policing on a conservation site) and the rights of local users are limited to low-value secondary products and temporary concessions. In contrast, participatory forest projects are based on a broader valuation of forest resources, taking into account the multiple values of forests and the social and economic needs of local forest users. Access and use rights to forests - as well as conflicts arising among competing users - are locally defined and managed. The structure of incentives and the choice of technologies are geared to environmental sustainability over the long term.

One practical set of approaches which coalesced, evolved and spread in the early 1990s is participatory rural appraisal (PRA). This has been described as “a growing family of approaches and methods to enable local people to express, enhance, share and analyze their knowledge of life conditions, to plan and to act” [13]. PRA has also been called “an approach and method for learning about rural life and conditions from, with and by rural people”.

Before conducting the main survey, a preliminary visit to the pre-selected sites was taken place. A quick observation of the local landscape was taken, and part of the secondary data related to the background information of the villages such as geographical, physical, socio-economic conditions, and forest area was gathered. A short discussion among team members would decide whether to choose the site for conducting the survey. To make sure that the fieldwork would be successful with the PRA method, a pre-test was conducted one day in Bao Cuong commune (Bai Hoi and Bai Lenh hamlets). After that, several small discussions among team members were held to revise the questionnaire thoroughly to make sure every question is clear and understandable. Finally, 300 households were chosen to be interview, including 100 production forest contracted households, 100 protection forest contracted households, and 100 special use forest contracted households.

### 3. Results

Among the 300 households interviewed, 277 households (92%) agree to response to the questionnaire of which 35% households were contracted protection forest, 34% special use forest, and 31% production forest. The respondents' distribution on the three forest utilization types are shown in Figure 2.



**Figure 2: Distribution of respondents in relation to the three forest utilization types**

The assessed household characteristics is described in Table 1. The major occupation of the respondents is agriculture. Their education is quite low; the average class is 7. They are 48 years old on average; more than half of whom are female. More than 80% of respondents are belonging to ethnic minorities and are living in families of an average size of 4 people. To each household more than 3 ha of natural forest contracted of which 73% were allocated to both natural forest and planted forest. Among the total forest area per household, the designated functions “protection forests” occupied the highest share and “production forest” the lowest percentage. The average distance

from houses to the nearest natural forest is nearly 2 km. All households stated that their natural forest is currently degraded with low growing stock.

**Table 1: Description of households' characteristics**

Variable	Total		Production		Protection		Special use	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age (years)	47.94	11.59	46.93	11.19	46.16	12.23	50.64	10.89
Gender (Male =1)	0.62	0.49	0.56	0.50	0.65	0.48	0.63	0.48
Education (class)	7.43	2.29	7.35	2.14	7.85	2.52	7.08	2.13
Ethnic („Kinh“ group = 1)	0.19	0.40	0.13	0.34	0.33	0.47	0.12	0.32
HH Size (persons)	4.27	1.47	4.24	1.35	4.48	1.58	4.08	1.46
Income (VND million)	50.23	35.84	51.61	31.12	58.52	45.41	40.52	25.16
F_Land (ha)	3.43	4.99	0.75	0.41	6.37	7.00	2.81	2.64
F_Planted (Own planted forest =1, No = 0)	0.73	0.44	0.85	0.36	0.81	0.39	0.55	0.50
Distance (km)	2.34	2.02	2.07	1.55	2.79	2.52	2.11	1.73
Fuel Wood (collected =1, No =0)	0.98	0.13	0.95	0.21	1.00	0.00	0.99	0.10
Bamboo (collected =1, No =0)	0.74	0.44	0.53	0.50	0.87	0.34	0.79	0.41
Palm tree (collected =1, No =0)	0.45	0.50	0.60	0.49	0.35	0.48	0.43	0.50
n	277		85		97		95	

98% of households collected fuel wood, 74% collected bamboo, and 45% collected palm trees from natural forest; none of them collected timber from the natural forest during the last 12 months. Approximately 90% of collected fuel wood, timber and bamboo are utilized for self-consumption. Palm tree products such as palm leaf for house roof constructing, and palm vein and palm stem for sale are collected in reasonable quantity. The main crop harvests are rice, maize, cassava and tea. All households cultivate rice. In addition 40% cultivate maize, 43% crop cassava, and 54% cultivate tea. The mean rice production of 2.3 tons per household is considered to be sufficient for self-consumption; harvested maize and cassava are used as fodder for livestock. The average size of agriculture land holdings is 0.27 ha per household. Because agriculture land is quite low, the local people cultivate maize, cassava and tea in the lowland forest. Tea is a traditional plant in this region and contributes considerably to household incomes. Table 2 presents the forest products collected and crops harvested per household during the last 12 months.

In total, the average annual household income is estimated to be VND 50 million (US\$2,400) of which agricultural and cash crops show the largest share, and livestock shares the smallest (Table 3). The highest contribution to total household incomes is obtained from agricultural crop, followed by other income sources (such as remittance, pension, and small household enterprise etc.), income from forest, and income from livestock. The annually average income per capita is around US\$500.

**Table 2: Forest products and crops harvested per household**

Variable	Unit	Min.	Max.	Mean	SD
<i>*Forest products</i>					
Timber	m3	0.00	100.00	3.18	11.75
Fuel wood	m3	0.00	520.00	26.84	44.84
Bamboo shoot	Kg	0.00	3000.00	110.16	350.92
Bamboo ( <i>Dendrocalamus latiflorus</i> )	Culm	0.00	400.00	17.18	42.99
Bamboo( <i>Bambusa nutans</i> )	Culm	0.00	12000.00	162.53	845.19
Bamboo( <i>Schizostachyum aciculare</i> )	Culm	0.00	1000.00	26.75	94.21
Palm_leaf	Leaf	0.00	4000.00	131.01	505.23
Palm_vein	Kg	0.00	7000.00	146.92	551.30
Palm_stem	1,000 pcs	0.00	300.00	11.44	38.16
<i>*Main crop</i>					
Rice	Kg	300	7500	2303.94	1236.521
Maize	Kg	0	4000	133.3	377.033
Cassava	Kg	0	17000	332.22	1311.569
Tea	Kg	0	5000	213.99	433.802
n= 277					

**Table 3: Household income contribution**

Household income contribution	VND million	%
Forest	10,536.08	21
Crop	15,990.58	32
Livestock	9,542.41	19
Other	14,215.88	28
Total	50,284.95	100

#### 4. Discussion and conclusion

The average forestland of 3 ha/household in Dinh Hoa is found similar to other provinces over the country. The similar or even less forest area is found in many studies, including Lam Dong, Bac Kan, Son La [14,15,16] Hue, Ha Giang, Quang Nam, and Yen Bai. Assuming a rotation period of 8-10 year, the average annual income from planted forest contributes about 11 million VND (21%) to the total annual income of the households. The remaining income is mainly from agricultural products such as crops, livestock and other income (small trade, pensions, money sent by relatives from abroad, etc). Contracting money to protect natural forests is 100,000 VND/ha, multiplied by about 2 ha natural forest per household is not enough to

motivate people to protect natural forests. Compared to the average income from planted forest of 33 to 52 million/year/household of some localities [17], it is clear that the income from forest of Dinh Hoa households is much lower. Profits earned from afforestation and regeneration are not able to compare to agricultural crops and livestock, so it is difficult to attract people to commit to forest development and protection.

In 2005, Decree 01/CP was replaced by Decree 135/2005/ND-CP and Decree 135 prioritized allocation of forests and forestry land to poor ethnic minority households. The common point between policies is to support the development of livelihoods and promote the development of household economy associated with forest protection and development. However, the increase in forest benefit rights is not synonymous with increasing economic benefits from forests. Normally, poor ethnic minority households often lack resources to exploit and benefit from contracted forests or are unable to transfer benefits from forests and forest land to economic benefits. The fact is that poor households often do not know clearly the legal regulations in general and the law on forest protection and development in particular, the problem of their money label is only to solve economic needs. It is worth mentioning that while the demand for fuel wood, medicinal plants and forest products is increasing [18] and the exploitation of these forest products gives households considerable income. However, the amount of support for forest protection is very modest, 100,000VND/ha/year. Even if the localities have paid for forest environmental services (200,000 to 400,000 VND/ha/year), this level of payment is still not commensurate with the efforts of the households. The payment depends heavily on the ability of the local budget. This number is too small compared to the benefits from illegal exploitation of forest resources and is not enough to for the poor groups to give up the deforestation

In conclusion, allocated forest policy is not effective to forest protection and poverty reduction as desired. Income from forest protection and development has not really becomes a motivation for local people to focus on forest exploitation and protection. In fact, different forests require different management measures, depending on the type of forest, local economic, social, cultural and political situation. Areas that require strict protection should be managed and protected by the state, while less important forests and production forests can be allocated to people and communities to ensure sustainable forest management and poverty reduction. Rights and obligations of households, in which the benefit rate should be adjusted to be reasonable and appropriate to satisfy the needs of local people to create incentives for them to protect and develop forests effectively.

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# THE RELATIONSHIP BETWEEN FOREST RESTORATION AND ECONOMIC DEVELOPMENT IN VIETNAM: EVIDENCE AND POLICY IMPLICATION

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## **Abstract**

*Protection, development and recovery of forest are vital strategies for developing countries to achieve sustainable development. Since the 1990s, Vietnam has been interested in restoring forests in the face of severe forest degradation. Understanding the relationship between forest cover and economic development is a challenge for researchers and policymakers in Vietnam. Based on the framework of economic theory and practice in Vietnam, the study used a multivariate linear regression model to assess the economic factors affecting forest cover. The study uses the secondary data period 1990-2017 in Vietnam. Research results confirmed: Rural population and GDP per capita (Low / High economic development level) have an impact on forest cover and these relationships following the shape of Kuznets environmental curves.*

**Keywords:** *Forest degradation; Forest restoration; Economic development; The environmental Kuznets curve (EKC).*

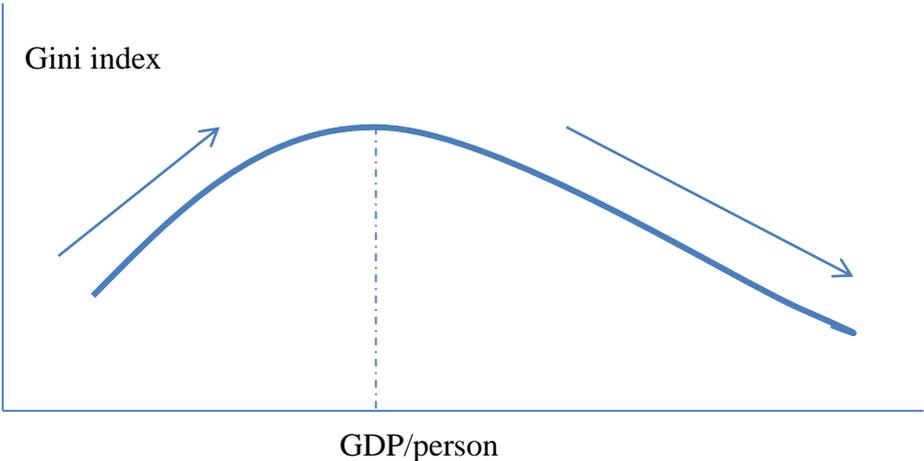
## **1. Introduction**

Belov (1976), The forest system on the earth is providing 37 billion tons of biomass (70%), its flora produces oxygen to serve for the humans, animals and insects (44% oxygen from forest trees). Each year a person needs 4.000 kilograms of oxygen to correspond with the amount of oxygen which produced by 1.000 to 3.000 square meters of trees in a year. Forests regulate the global climate by significantly reducing the heat from the sun to the earth due to the forest canopy cover is very large and more useful than types of land using, especially the very important role of forests in maintaining the carbon cycle on the earth by which it directly affects to the global climate changes. Therefore, the existence of forest ecosystems plays a significant role to against the global warming and regulate the climate. The world experience shows that the maintaining, developing and protecting forests have the relationship with

economic development levels. The study focuses in: i) Theoretical and experimental basis of the relationship between forest restoration and economic development levels; ii) The Vietnam's environmental Kuznets curves are evidence for the forest degradation with the relationship between forest degradation and the economic development levels; and iii) and policy implications for the forest development in Vietnam.

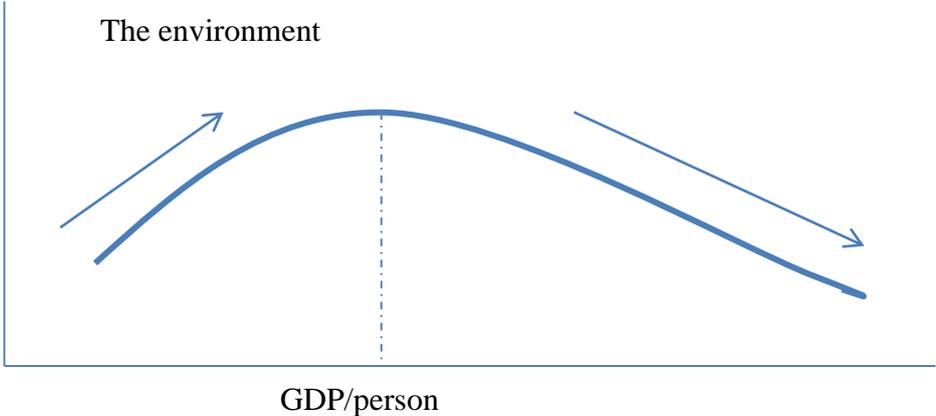
**2. Theoretical and experimental basis of forest restoration and economic development**

Kuznets (1955) discussed: The Gini index and the economic development (GDP/person) have a relation like the U-inverted in long-term. Figure 1 show that: in the first-stage, the economic development levels are still low, the GDP per capita is increased and the Gini index is also increased. When the economic development levels will be increased, the Gini will be lowdown.



**Fig. 1. The Kuznets curve**

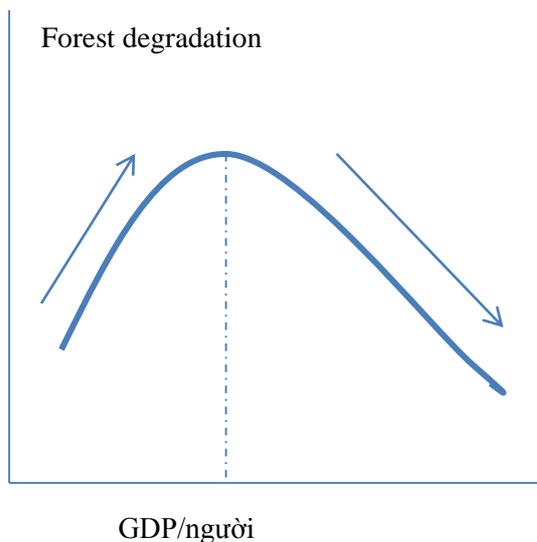
According to Yandle, Vijayaraghavan and Bhattarai (2002), the environmental Kuznets curve (EKC) was popularly using in the world from 1991.



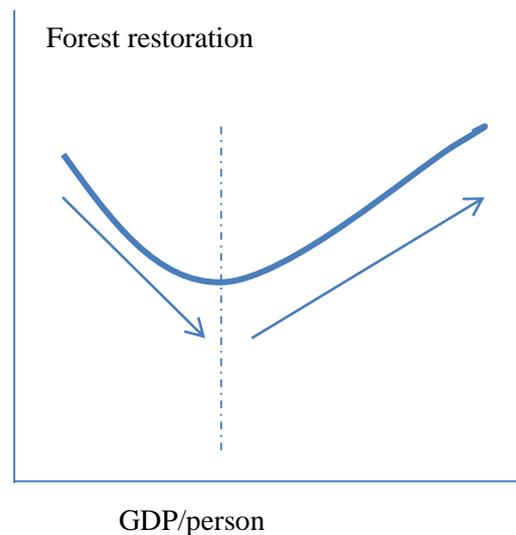
**Fig. 2. The environmental Kuznets curve**

The environmental pollution status could be measured by the level of air-pollution or water-pollution. When the economic development levels are low, the GDP is high, the environmental pollution status is high; but when the economic development levels will be more increasing, the environmental pollution status will be decreased due to the technology level and high-tech products are more and more produced and replaced for traditional fuel products.

Samuelson formed theoretical basis and applied the Kuznets curve into forest degradation and forest restoration.



**Fig. 3a. The Kuznets curve of forest degradation**



**Fig. 3b. The Kuznets curve of forest restoration**

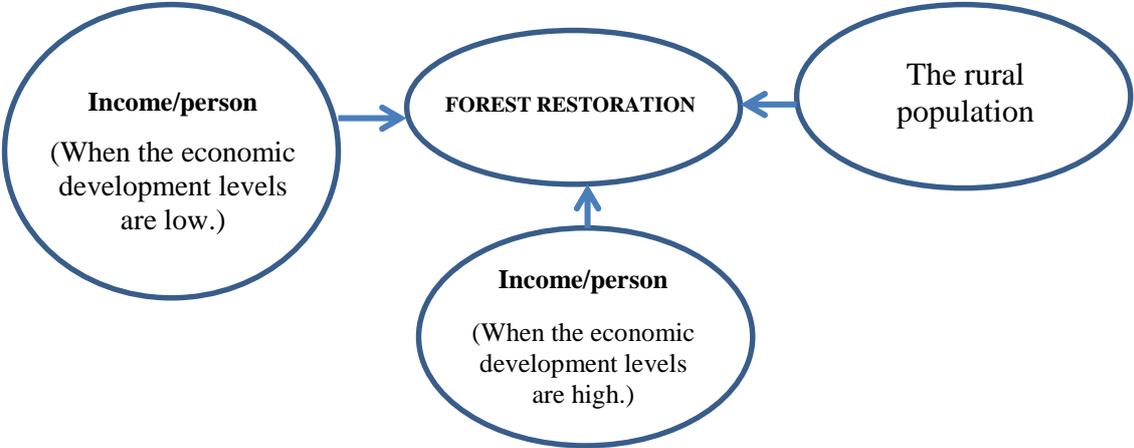
In the Figure 3a, the status of forest degradation and the economic development level had the relationship in same direction but it liked the U-shaped invertation. People used forest products in the early stages of development, but after the per capita income is increasing, forest products are replaced by some other substitutes that do not harm the forest. And, the higher growth population and agricultural expansion to result in deforestation and this trend can be stopped through a depth agricultural development and build appropriate political and social institutions (Laurance, 2007; Rudel & et al., 2005; Culas, 2007). In the rural areas of developing countries, fuel fuels, especially firewood from forests was used wisely (Balat & Ayar, 2005). As the higher income, households change from using dirty fuels to clean fuels (Alam, Sathaye, Barnes, 1998; Davis, 1998; Leach, 1992). Therefore, the using of fuel wood was assumed that it was decreased with highly increased per capita income by replacing it from alternative energy sources such as electricity and gas. The amount of wood used in furniture, buildings or construction would be reduced due to the alternative materials for wood (Barbier & et al., 2010;

Lambin & Meyfroidt, 2010). Moreover, the governments are conducting reforestation programs and the highly increased per capita income, education and environmental awareness also will be enrich, all that will help to reduce deforestation rates. So, if selecting forest rehabilitation targets (forest coverage rate) replace forest degradation targets in the model of the U-shaped inversion, Figure 3b will the relationship between the forest restoration and the economic development like the U-shape.

Shafik and Bandyopadhyay (1992), conducted an empirical research on the inverted U-shaped relationship in 1992. Koop and Tole (1999) analyzed the case of the developing nations’ forest degradation, it showed an economy with more inequality, the forest degradation would be more serious. Basing on database of 66 nations, in the period of 1962 - 1986, Winslow (2005) showed that the forest degradation had a correlative relationship with the economic development as the Kuznets curve. In Mather (2007), the Asian countries’ economic growth affected to the forest degradation. According to Bhattarai and Hammig (2001), Ewers (2006), Scricciu (2007), the forest degradation and the economic development had a relationship in the U-shaped inversion in developing countries. Results of the Miah et al. (2011) also showed the Bangladesh’s forest degradation in a relationship with the economic development with the U-shaped inversion. To Jesús et al. (2017), found evidence that factors affected to the forest restoration, included: per capita income, per capita income with the high economic development status, the economic growth rate, percentage of rural population and the population growth rate.

**3. Research model in Vietnam**

To base on the theories, experimental studies in the world and some evidence in Vietnam, we chose model of several following factors to affect the forest restoration status:



**Fig. 4. Research model**

**Table 1: Variables definition in the model**

Order	Name	Definition	Measurement	Expected signs
I	Dependent variables			
	FC (Rate of forest cover)	Forest coverage rate	Acreage of forest coverage/ acreage of natural soil (%)	
II	Independent variables			
1	YP (GDP per capita)	GDP/person	Price of 2010	-/+
2	YPS (GDP per capita square)	(GDP/person) square	Assuming GDP/person in a high economic development level	+
3	PR (Percentage of rural population)	Percentage of rural population	%	-
4	GP (Growth of population)	Growth of population	%	-

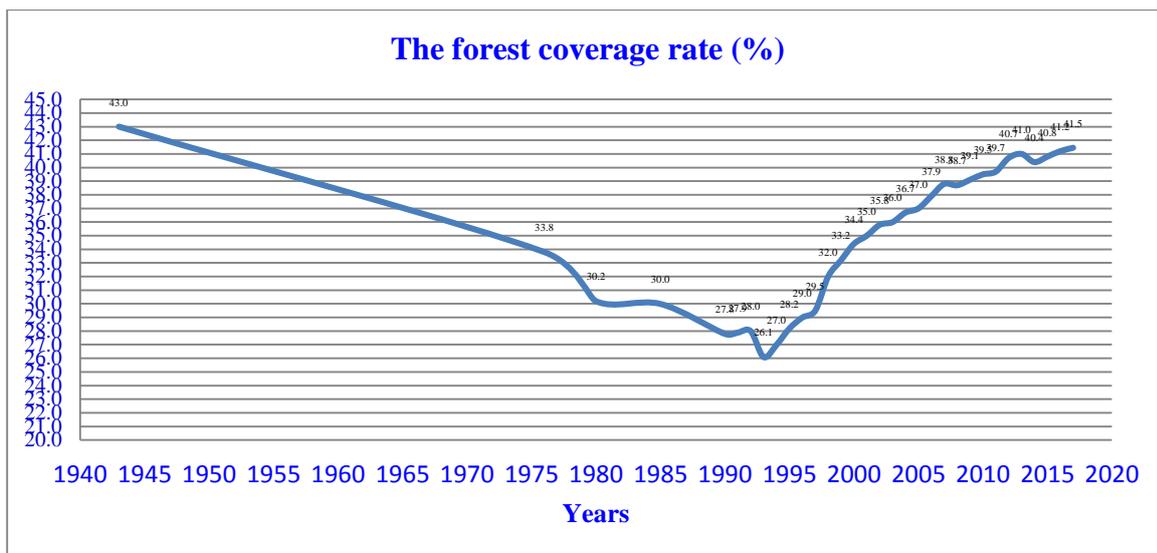
The study used model of multivariate linear regression and database in 27 years (1990 - 2017). The database has processed from sources of General Statistics Office (1990 - 2017); World Bank (2010 - 2018); Annual reports on socio-economic situation of General Statistics Office (1990 - 2018); Some relation studies to the forest degradation in Vietnam (1990 - 2020).

#### **4. Results and discussions**

##### ***4.1. Trends of forest restoration***

With effective policies in protection and forest restoration by the Government of Vietnam through periods, especially the policy of greening bare land - bare hills from 1991, the forest restoration achieved amazing achievements.

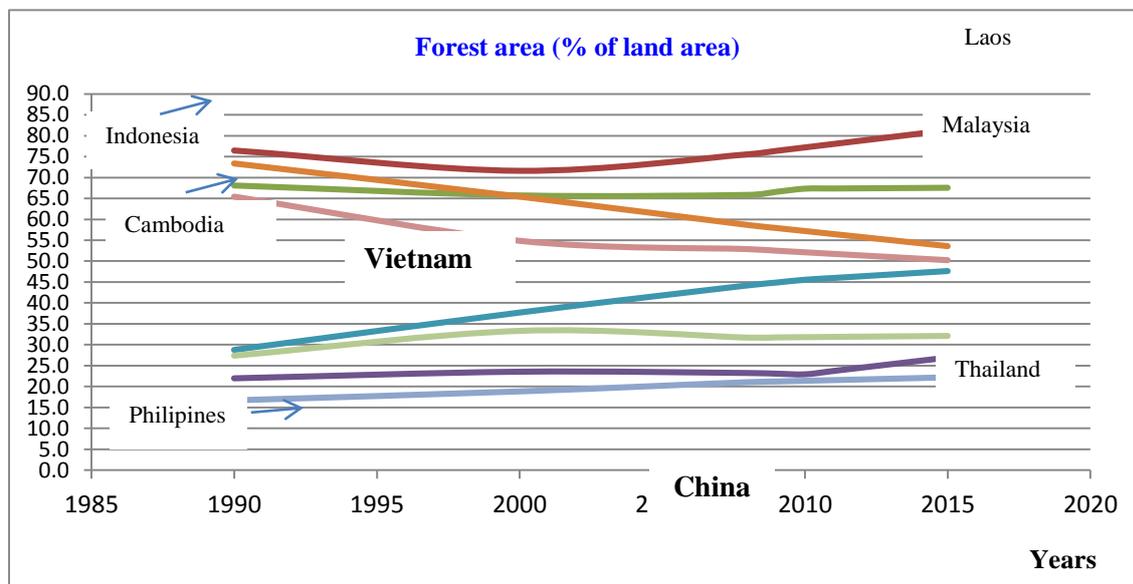
In the Figure 5, the year 1943, the forest coverage rate was 43%, and it was 33.6% in 1976. From 1976 to 1993, Vietnam was one of the nations has the serious forest degradation in world (the forest coverage rate was 26.1% in 1993). In the Figure 5, the line went-down with a serious slope down. From 1994 to 2017, the forest coverage rate went-up, to the year 2017, the forest coverage rate was 41%, nearly equal the year of 1943.



**Fig. 5. The status of forest coverage in Vietnam (1943 - 2020)**

*Source: Authors processed from sources of General Statistics Office and some relation studies in Vietnam.*

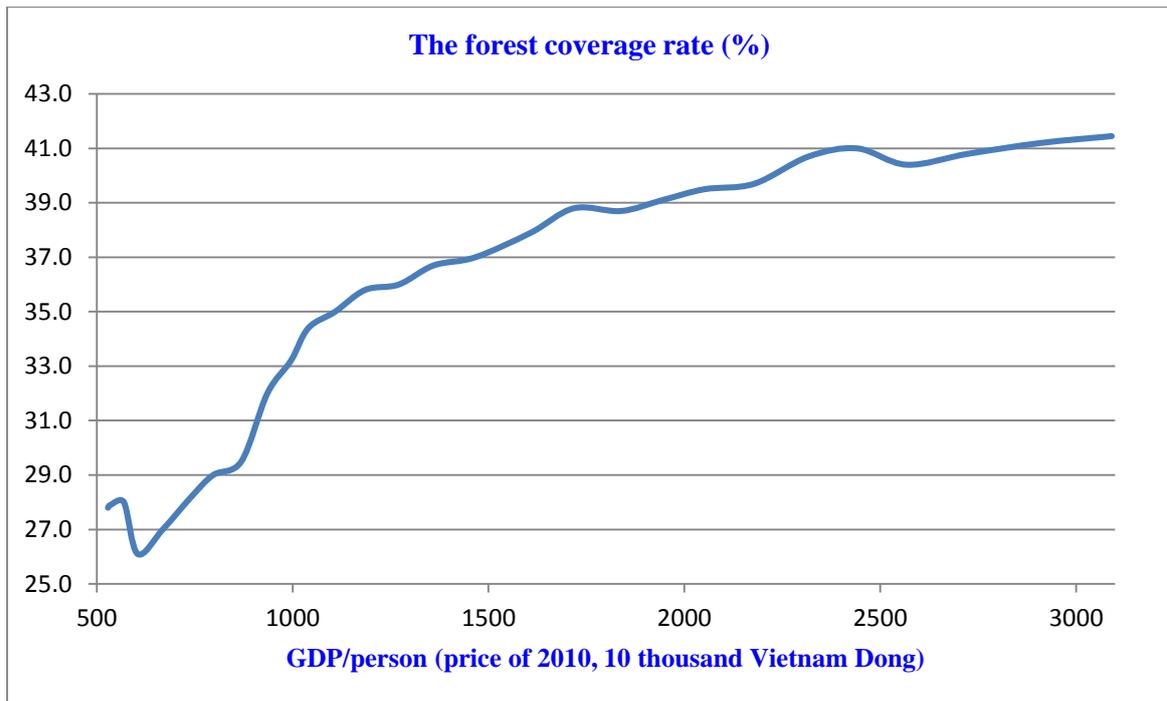
When we compared the Vietnam's forest coverage rate with some nations in the region, fig. 6 showed that in 25 years ago, Vietnam and China are increasing significantly the proportion of forest area/natural soil area, while other nations in the region, this rate slowly decreased (Indonesia, Thailand, Cambodia) and Laos, Malaysia, Philippines are going-up in the recent years. That affirmed Vietnam becomes one of the region's top countries in paying attention to economic development associated with sustainable development.



**Fig. 6. Trends of changing in the forest acreage rate/ the acreage of natural soil in some countries 1990 - 2015 (%)**

*Source: World Bank (WB, 2018)*

If we measured by the forest restoration status (100 - the forest coverage rate), the line is as U-shaped inverted of Kuznets. This shows that it was associated with the economic development achievements for over time, the forest restoration status has trends to correspond with the high level of economic development. At the Figure 7 showed that the relationship between the forest coverage rate and the Vietnam's economic development level are U-shaped and it went-up. However, we lack of data before 1990, so the shape is not as completed as the U.



**Fig. 7. The relationship between the forest coverage rate and GDP per capita (1990 - 2017)**

*Source: Authors processed from sources of General Statistics Office and some relation studies in Vietnam.*

#### ***4.2. The impacts of protection policy - forest restoration***

Since Law on Forest protection and development was issued (National Assembly of Vietnam, 1991), the forest area was increased due to zoning, to promote natural regeneration and new planting in some years ago, that's always higher than the forest area before by legal or illegal exploitation. Policies of forest allocation (Prime Minister, 2001), Ministry of Defence coordinated with local governments to identify forest areas that are seriously deforested, especially in the central highlands, southeast and north central regions for organizing military units stationed, locked, built defense and security areas associated with forest protection, force layout, permanent means for readying to take part in anti-deforestation (Ha Cong Tuan, 2009), forest area is increased in the sustainable trend.

On the basic practice of policy impacts in protecting and forest development, the study built following hypothesis:

*H0: There is no difference between the forest coverage rate (%) and the forest restoration and protection policies' impact.*

*H1: There is difference between the forest coverage rate (%) and the forest restoration and protection policies' impact.*

**Table 2: The definitions of the inspection model's variables.**

No.	Variable symbols	Contents	Measurement
1	PI (Policy Impact)	Policy impact	Yes =1; No = 0
2	FC (Forest cover)	Forest coverage rate	%

In 1991, Law on forest protection and development was issued and some guidelines, policies were also issued. Assumption study has policy impact from 1994. Database from 1943 to 2017. According to Kendall and Stuart (1979), used t- test for independent samples is suitable.

**Table 3: The results of testing for independent samples.**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Difference average	Difference standard errors	95% Confidence Interval of the Difference	
								Lower	Upper
The forest coverage rate (%)	.048	.827	3.659	30	.001	6.365	1.739	2.812	9.917
Assuming variance is equal.			3.277	12.025	.007	6.365	1.942	2.133	10.596
Assuming variance is not equal.									

In the Table 3, the difference average ratio of the yearly forest coverage rate has policy impacts and was not 6.365%, estimate the confidence level: 95% is [2.8%; 9.9%]. Levene testing was 0,827 > 0,05, t-testing with the total variance was 0.01 < 0.05. Assuming H1 was suitable. So, it affirmed the Government's policies impact make sense to restore forests in Vietnam.

### 4.3. Results of regression model

The results in the Table 4 showed that GP variable impacted to FC variable did not statistically significant. The variables of YP, PR, YP square impacted to the forest coverage rate with the confidence level was over 95%. The model was tested: ANOVA, residual correlation, residual variance and  $R^2$  adjusted = 0.97 (97% change of the forest coverage rate was explained by independent variables).

PR (Percentage of rural population, %) has an adverse impact to FC. When the percentage of rural population is growth, the forest coverage rate will be decreased.

YP (GDP/person) has an adverse impact to FC. The more the YP's big, the more the forest coverage rate will be decreased.

YPS (YP square) has the same directional impact FC. The more the YP's big, the more the forest coverage rate will be increased (as the economic development level is high).

**Table 4: Regression coefficient**

	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Standard errors	Beta		
(Constants)	99,556	27,952		3,562	0,002
PR (Percentage of rural population, %)	-1,242	0,322	-1,155	-3,859	0,001
(GP) Growth population GDP (%)	-0,938	1,280	-0,031	-0,733	<b>0,471</b>
YP (GDP/person)	-1,128	0,182	-1,695	-6,204	0,000
YP square	17,193	1,981	1,482	8,680	0,000
Dependent variable: FC (Forest coverage rate, %) ANOVA: Value F = 288,81; Sig. = 0,000. $R^2$ : 0,97; Sig. = 0,000. d (Durbin - Watson): 1,477 Spearman testing: All regression coefficients have Sig. > 0,05.					

The result showed that the relationship between the forest restoration status and the economic development is as the U-shaped or the relationship between the forest degradation status and the economic development is as the U-shaped invertation Kuznets.

## 5. Policy implications

The study results affirmed three problems that we must solve basing on the relationship between the economic development and the forest restoration status, as the following:

*Firstly*, to focus on maintaining economic growth and improve labor productivity for upgrading the economic development level (GDP/person) will be the core of maintaining forest restoration in Vietnam.

*Secondly*, to accelerate the process of industrialization and urbanization in rural areas for decreasing the proportion of rural population will be the best method to maintain the sustainable restoration of forests.

*Thirdly*, laws and the Government's policies affected to the forest coverage rate. The Government should be completed forest protection and restoration policies in current conditions. Specially, attention to maintain the coordination with Ministry of Defence and the local authorities in key provinces that it has a large forest area in protection and afforestation.

Although the study is efforted to used database of 27 years, the data before 1990 is rare, especially the period of Vietnam's forest was serious degraded, so the study results are limited.

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# DEVELOPING THE SUSTAINABLE AGRICULTURE IN VIETNAM IN THE CONTEXT OF THE INTERNATIONAL INTEGRATION

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## **Abstract**

*During the past, Vietnamese agriculture has played a fundamental role in reducing poverty and ensuring social stability as well as national food security. On the contrary, the agriculture has not yet developed sustainably when the competitiveness of some agricultural products is not high, the consumption market is unstable, it has not yet formed an effective agricultural value chain and farmers' income is still low. Towards the sustainable development in the context of international integration, there is a big question for theoretical researchers, policy makers and practitioners: What are solutions for the national agricultural development?*

**Key words:** *agriculture, food security, international integration.*

## **1. Introduction**

The concept of “sustainable development” was officially appeared in 1987 in the Report "Our Common Future" of World Council on Environment and Development (WCED); it is "the development meets the present requirements and it does not raise difficulties for meeting the future generations' requirements". The general goal of sustainable development is to achieve the fullness in material, the richness in spirit and culture, the equality of citizens, the consensus of society, the harmony between human and nature; it is necessary for the development to closely rationally harmoniously combine three aspects: economic development, social development and environmental protection. Sustainable development is an urgent need and an inevitable trend in the improvement of human society. This has been confirmed by Rio de Janeiro Statement (1992) on Environment and Development, which has included 27 fundamental principles and Agenda 21. At the World Summit on Sustainable Development (2002) in Johannesburg, above principles and Agenda 21 on Sustainable Development have been reaffirmed and committed to full implementation.

Sustainable development becomes Party's line and State's policy. Directive No. 36-CT/TW dated June 25, 1998 of Politburo on enhancing environmental protection in the period of industrialization and modernization had emphasized: “Environmental protection is an inseparable fundamental content in the line,

guidelines and plans of socio-economic development at all levels and sectors; it also are an important basis ensuring the sustainable development and the successful implementation of national industrialization and modernization". To implement the sustainable development goal and international commitments, Vietnamese Government has issued "Strategic Orientation for Vietnamese sustainable development" (Agenda 21 in Vietnam) according to Decision 153/QĐ-TTg dated August 17, 2004, it was a basis for establishing strategies, general plans, socio-economic development plans in nation, sectors and localities including agricultural and rural development sector.

Objective and motivation of sustainable agricultural & rural development is to improve people's life quality on aspects of economy, society and environment. Accordingly, farmers should be the central object who enjoy the first beneficiary from the development. Therefore, this is an urgent demand, especially in the context of global economic integration and globalization. Sustainable rural development in general should be implemented on the basis of a long-term development planning with scientific bases and comparative advantages of Vietnamese agriculture.

## **2. Method**

The main methods used in this report are statistical methods, descriptions, and economic analysis to synthesize and analyze data. The article mainly uses data sources collected from General Statistics Office for analysis and evaluation, namely: data sources on growth rate of agricultural sector, contribution of the agricultural sector to economic growth and GDP of Vietnam; structure of agricultural value in some specific areas such as agriculture-forestry-fishery; data on agricultural export turnover; export structure of agricultural sector in Vietnam; labor structure and productivity in Vietnam's agricultural sector; investment capital for agricultural development and efficiency of capital use. In addition, the article also refers to data from domestic prestigious journals such as Vietnam Financial Times, Financial Journal, Environmental Journal, etc. as a database for report. Through analysis and synthesis of data for Vietnam's agricultural development, the author proposed a number of solutions to develop sustainable agriculture in the context of international integration.

## **3. Results**

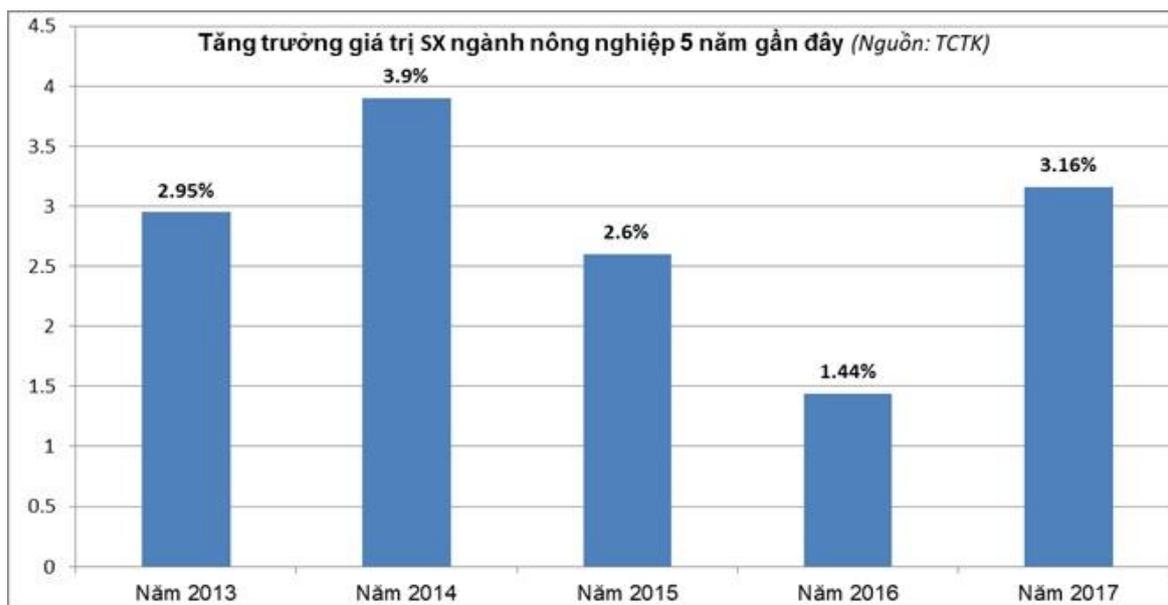
During the past, Vietnamese agriculture has remarkable progresses. Growth rate of agriculture is highly continuously increasing in many years. Vietnam is a leading exporter of agricultural products, food and in top 15 largest exporters. Currently, agricultural development has associated with efficient exploitation of natural resources, reduction of environmental pollution and settlement of social issues such as employment, economic structural movement, the assurance of national food

security; some export goods occupy a high position in the global market. At the same time, social economy is strengthened; many rural areas have changing. Material and spiritual life of people in these rural areas are increasingly improved, poverty rate in rural area has been rapidly decreased.

In fact, Agriculture has never been prioritized and directly steered as it is now. And economic sectors has never been interested in the agricultural sector as today. In 2017, there were nearly 2,000 newly established enterprises in the field of agro-forestry and fisheries, up 3.8% compared to 2016; total number of enterprises operating in this sector are over 5,600. Many enterprises and large corporations have selected high-tech agriculture, organic agriculture as a main direction, they have invested billions of USD and reached remarkable successes.

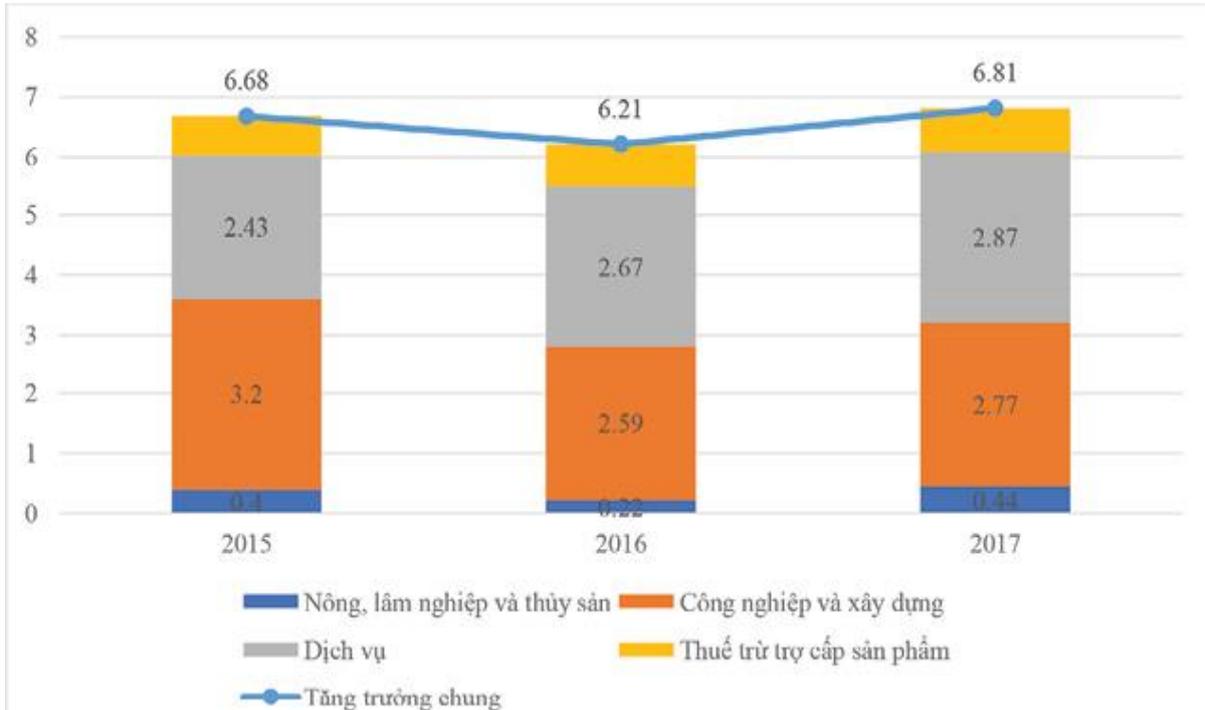
Along with that attention, in 2017, Agricultural & Rural Development sector achieved remarkable results: growth rate was 2.94%, surpassing the target set by Government was 2.84%. In the export goal of agro-forestry and fisheries, Government has set USD32-33 billions, we reached USD 36.37 billion, surpassing USD 4 billion compared to the same period of last year and the absolute surplus of this sector was USD 8.55 billion, increasing by more than USD1 billion compared with the same period of 2016. Along with that, the national targeted program on building new rural area achieved 2,884 communes, approximately 32.3% - exceeding the assigned plan (31%); rate of forest cover reached 41.45%, number of violations in protecting forest decreased 23% and the damage from deforestation and forest fire declined 68% compared with the same period of last year.

**Figure 1: Chart of value growth for agricultural production in the last 5 years**



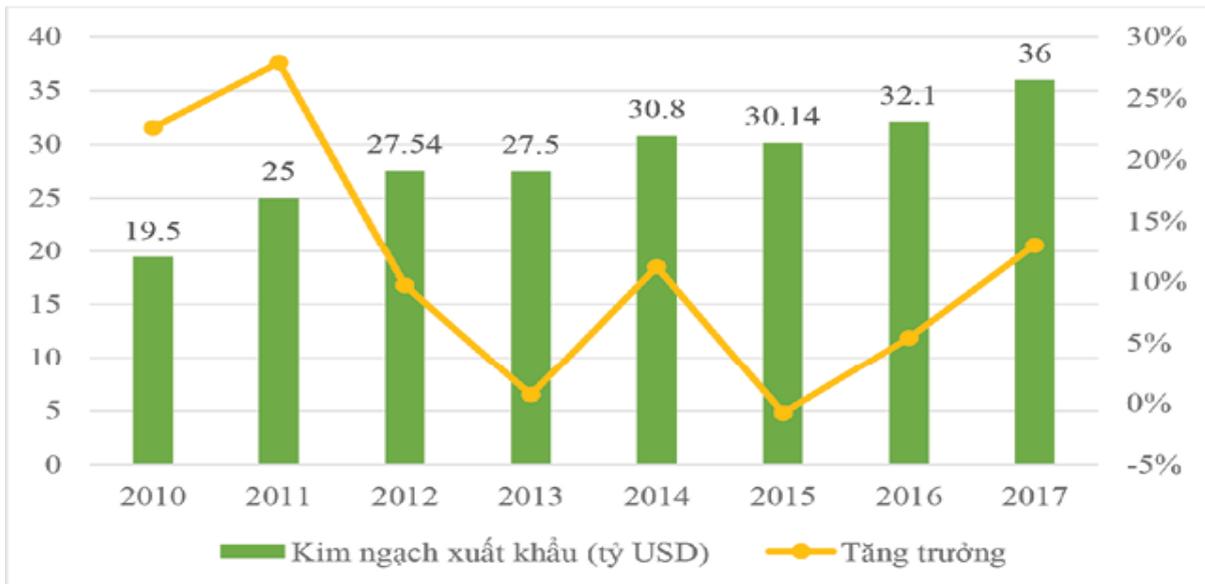
*Source: General Statistics Office*

**Figure 2: Growth and contribution structure of sectors for economic growth**



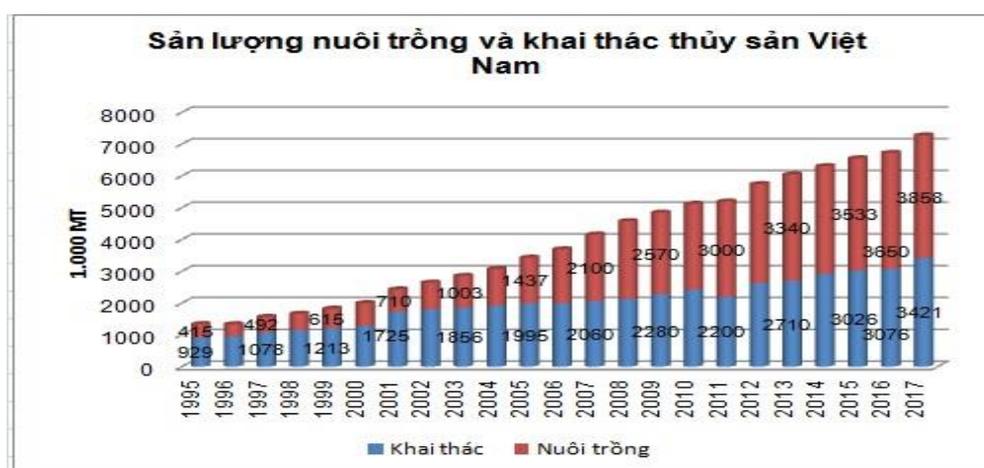
*Source: General Statistics Office*

**Figure 3: Turnover and growth of agricultural, forestry and fishery exports, 2010-2017 (billion USD)**



*Source: General Statistics Office*

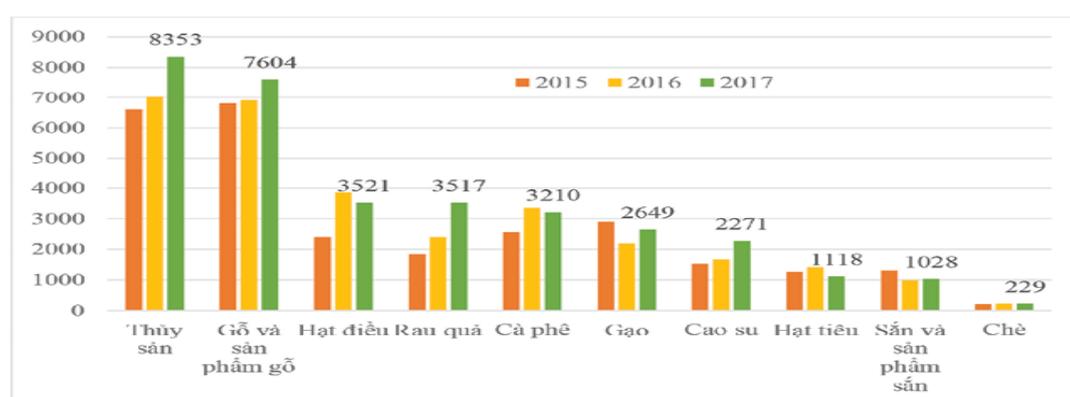
**Figure 4: Output of fishery raising and exploiting in Vietnam**



*Source: General Statistics Office*

In 2017, Ministry of Agriculture and Rural Development continues to select 2017 as an Action Peak Year on quality control and food safety. Monitoring result report in 2017 synthesized by Department of Agro-forestry and Fisheries Quality Management showed that food safety is under control, especially emerging issues such as abusing chemicals, antibiotics and banned substances in livestock. During the year, 9,142 samples of urine and meat collected at slaughter facilities nationwide do not include salbutamol banned substance. The percentage of fresh meat samples violating the antibiotic indicator was 0.63% (21/3341 samples), decreasing nearly 3 times compared to 2016. The rate of aquatic samples infringing chemical & antibiotic indicator was 0.89%. The percentage of vegetables, roots and fruit violating the food preservative residue reached only 0.6% (instead of 2.05% in 2016). Up to now, in the nationwide, 744 models of supply chain in safe agro-forestry and fisheries have successfully established.

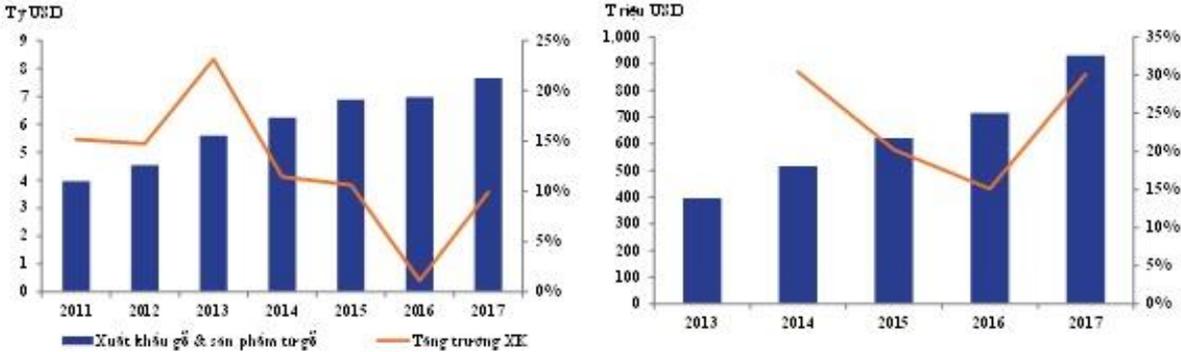
**Figure 5: Top 10 of agricultural, forestry and fishery products with large export turnover (million USD)**



*Source: General Statistics Office*

2017 also marked a major turning point in rotating the development axis of key agricultural goods and determining competitive commodities. In the past, we have prioritized in producing rice, and now, we have sifted to prioritize in developing high-value commodities such as seafood, vegetable, fruit, woodwork,... with that direction, in 2017, the sector has set many new milestones: seafood export reached USD8.4 billion for the first time, woodwork export achieved USD8 billion. Especially, export turnover of vegetable and fruit sector reached USD3.45 billion, increased 40.5% and went far from the export turnover of rice around USD2.6 billion. Remarkable Results and highlights of sector of Agricultural & Rural Development are the premise for breakthroughs in the coming time.

**Figure 6: Export turnover of wood and wooden products**



Biểu đồ 1: Kim ngạch xuất khẩu gỗ và các sản phẩm từ gỗ

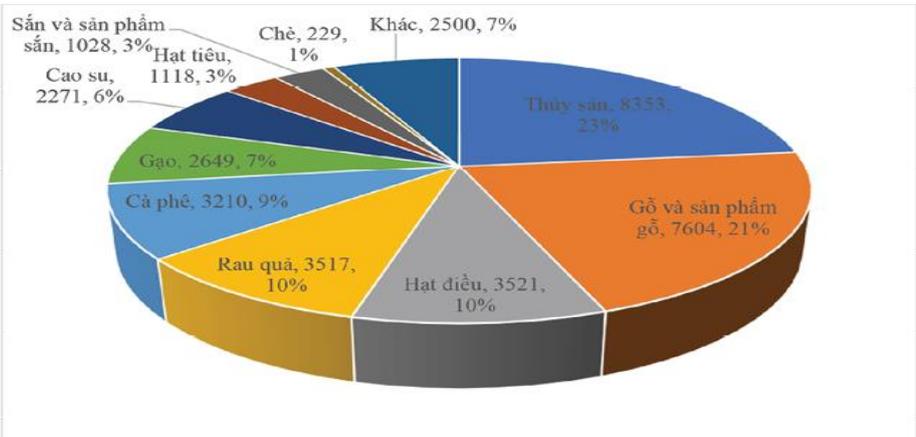
(Nguồn: Tổng cục hải quan)

Biểu đồ 2: Kim ngạch xuất khẩu sản phẩm nội thất từ chất liệu khác gỗ

(Nguồn: Tổng cục hải quan)

Source: General Department of Customs

**Figure 7: Export structure of agricultural, forestry and fishery products in Vietnam (million USD)**

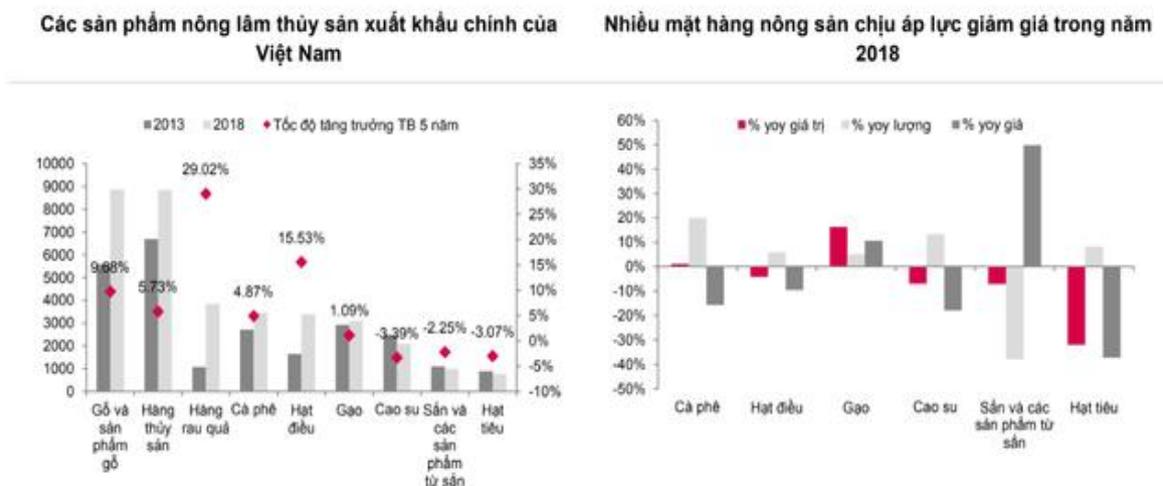


Source: General Statistics Office

Besides achievements, Vietnamese agriculture still exists some limitations. Our agriculture is low stability, low competitiveness and lowly good resources for production development. The restructuring of agriculture, rural economy and renovation of production methods is still slow, which is mainly small scale, scattered production, low productivity, low quality and low added value. Science and technology in agriculture are lacking and backward. Constructing hi-tech agriculture slowly change and does not create breakthroughs to improve added value and a strong basis for restructuring the agricultural production in the direction of sustainable efficiency attaching the value chain. Post-harvest processing equipment and technology are outdated, infrastructure for preservation has not yet developed with small scale and high loss rate. Therefore production is unsustainable and highly risky. Moreover, our agriculture has not attached to our industry as a system for supplement and support each other. The number of large enterprises playing a leading role in the integration process is quite limited. Although the policy for accumulating agricultural land has been implemented for a long time, at the present, agricultural land is still very fragmented, especially in the North.

With difficulties in agricultural goods consumption, the agricultural economy is levelled off and then farmers are not allowed to set prices for agricultural products. That economic status, role and income decline make farmers do not want to continuously work. The restructuring of agriculture does not reach businessman and enterprises. Value chain and ‘four object’ link have not touched the actual core. Thinking of the agricultural and new rural development program is approaching narrowly and then policy is only limited in allowance for production and mainly subsidies. In the changing context of agricultural integration and competitiveness, the goods consumption at what price becomes a crucially complex problem.

**Figure 8: Some agricultural products are under pressure of price deflation in 2018**



Source: General Statistics Office

In addition, the agricultural scientists are crowded but not strong, lack of good leading staffs; in many fields such as biotechnology, high-level human resources are lacking so that it was slowly deployed. Agriculture and rural area are developing in lack of planning, weak socio-economic infrastructure, polluted environment and limited disaster-coping capacity. The material and spiritual life of a part of rural people are still low, the poverty rate is unstable, especially in ethnic minorities and remote areas, etc.

From the current situation of our agricultural development, there are many shortcomings need to be resolved, how to develop sustainable agriculture in our country is a big question and answering this question will help Vietnamese agriculture to exert the inherent potentials and comparative advantages and create new breakthroughs in the future.

#### **4. Discussion and Conclusion**

During the past 30 years of innovation and development, Vietnamese agriculture has reached many remarkable achievements, developing in the direction of commodity agriculture, suiting the context of regional and international integration. However, in the expanding trend of globalization, in the deep integration, our agriculture will easily show weaknesses in the international market competition if we have no new progress. By new pressures in the context of international integration, food security and climate change, given objective is to develop agriculture, rural areas comprehensively in the sustainable manner with 3 pillars which are economy, society and environment; in particular, restructuring, building modern agriculture, high added value and efficiency; building new rural areas, improving incomes and living conditions, developing infrastructure, improving the disaster-resisting ability, protecting and rational using resources.

The goal of sustainable agricultural development is to create a sustainable agricultural production in terms of productive forces and relationship between production and environmental protection; the increasing growth rate, productivity, quality and efficiency; a sustainable production model so as to meet the sustain in foodstuffs and raw materials for domestic consumption as well as export in the immediate and long term.

In the context of deep international integration, to sustainably develop the agriculture, following contents should be ensured:

*Firstly*, restructuring the agricultural & rural economy in the direction on building the agriculture with high quality and value.

In the recent years, besides achievements such as growth in area, scale, quantity, types of agricultural products, exported agricultural products with large turnover and market share, fundamentally, our agricultural structure has not yet changed in quality. Mainly, we export agricultural goods in raw or semi-processed form with low nutrient and price compared to the same products in the international market. Our rice price is usually lower than Thai rice; our coffee price is also lower than that of Brazilian coffee. In addition to reasons of weak brand, distribution channels and marketing, there exists problem in selecting seeds, species, quality improvement, investment in production mechanization, processing technology and postharvest preservation. As a result, value of agricultural products as well as the labor productivity are very low. Therefore, it is necessary to carry out restructuring agricultural and rural economy.

In the past recent years, we have been investing in the development of research and technology transfer for agriculture. In fact, there have been many scientific research on the seeding technology, bioproducts, new technology procedures have been transferred and applied to the production process leading to the success in making a statement in terms of Vietnamese agricultural products. Therefore, the Ministry of Agriculture and Rural Development has set the target that from this moment to 2020, this sector must develop a strategy for science and technology development, in which high-tech agricultural products account for 30% of the price of total production. The results of the research and application of advanced technology have made important contributions to the increase of the productivity and agricultural output of Vietnam in recent years. Many kinds of plants and animals have the productivity, output and export values which are considered to be in the top of the world such as pepper, coffee, rice, and tea.

At the same time, not only is it necessary to accelerate the process of restructuring the agriculture and rural economy but also focus strongly on the production of products with economic efficiency; livestock development with better quality; Moreover, we should build concentrated commodity production areas in association with the transfer of production, preservation and processing technologies and come up with plans on how to overcome the unexpected damage. Besides, building and creating an organic agriculture with clean products is also an important matter to be considered. Since Vietnam has many advantages in tropical agricultural products, but it has not been promoted, it is necessary to make a revolution, which means besides meeting demands for domestics consume, it is crucial to turn our country's agriculture into an environment that specializes in the production of one-of-a-kind tropical trees and the supply of clean, sustainable technology and especially the transition in farm products into high-value biotech products. Additionally, science

should be used for the development of agricultural production. This will lead to the formation of blockchain to control tightly from the production phase, the processing phase to the consumption phase. This linkage should be established on the basis of an overall agricultural development plan, with the participation of four entities: enterprises, citizens, scientists, and the State. Continue to review, supplement and adjust the agricultural production planning based on: the advantages of each field, the economic efficiency of each kind of tree, animal, the increase in the proportion of husbandry and services; regions for commodity production associated with potentials and demands of the market and processing industry, ensuring sustainable efficiency and national food security.

*Secondly*, improve productivity, quality, and competitiveness in agricultural production.

As Vietnam integrates more deeply into the world economy, key export products, such as agricultural products, will have access to many major markets. However, to make the most of this commercial advantage, first of all, agricultural products must meet quality standards.

Considering the sustainable development of agriculture (including cultivation, husbandry, afforestation, aquaculture, and fishing), the first and basic factor is that the agricultural products must meet four requirements: The quality of the products must meet the requirements of the market. First of all, international standards on food hygiene and safety must be guaranteed. Meanwhile, there ought to be a wide variety of agricultural products and they must be produced with the help of advanced technology and affordable price leading to the competitive state in the market. Moreover, the number of the products must be big to meet the needs of the consumers, specifically it will be based on the demands of the distributors, especially the importers of Vietnam. Lastly, the provision time must be followed. In order to meet the aforementioned, the agriculture must be developed based on these foundations: the implementation of multifunctional agriculture in which the production of goods, the growth of ecotourism and living conditions are considered. Moreover, the products must be produced based on the standards and GAP procedure, ISO.1.4000 and HACCP; and the high-advanced technology must be used in all the staged from selecting, making, manufacturing, preserving and consuming. Therefore, the productivity and the quality will be increased, the competitiveness will be positively affected either. High demands of markets such as USA, EU, etc will be met. This will contribute to the economic development of the world. At the same time, effective and efficient control of poor quality products circulates in the domestic market will be taken place. The economic development and the health of consumers and the environment will be affected.

*Thirdly*, the linking agricultural economic growth with the guarantee of social progress and equality, poverty reduction, the improvement in the quality of life of people.

Since social progress and equality have a close relationship, it has become one of the most important elements in the development strategy of many nations - including Vietnam. It is not only a goal, a task to be solved, but also a motive for development. The essence of ensuring social progress and equality is to harmonize the development of the country with the implementation of social policies, bringing about a peaceful, independent, free, prosperous and happy life for human beings.

To achieve this goal, first of all, it must promote growth and maintain the development orientation of the economy in general and the agriculture sector in particular. This is an important condition for social progress and equality because they have a close relationship, mutual interaction, condition and premise for one another to develop together. Many countries show that if the economy does not develop, it will not be able to grow in terms of social justice; On the contrary, the implementation of social progress and equality must be in line with reality, on the basis of the reality of the socio-economic life of the country. Along with the economic development, the growth of the agricultural sector requires the use of resources, regulatory tools for cultural development, the exercise of democracy, social progress and equality, security social welfare, gradually improve welfare, care to improve all aspects of the life of farmers. The social security system with the main functions are: preventing, minimizing and overcoming risks; poverty alleviation, labor, job creation, economic development, especially in remote areas, areas with many difficulties; Developing and implementing well social insurance policies, unemployment insurance, labor accident insurance.

Implementing poverty alleviation in rural areas and narrowing the gap between rich and poor should be taken into account. Accordingly, it is necessary to implement socio-economic development policies and pay due attention to people living in the rural areas, ethnic minorities in upland areas, remote and isolated areas, overcome the trend of increasing the rich and poor distribution and ensure stability and sustainable social development. At the same time, good resolutions must be came up for labor, employment and income for farmers. Having jobs and increasing income will help farmers to be able to meet their needs, enabling them to access good quality services and improve their social status, integrate with the surrounding environment.

*Finally*, agricultural economic growth with effective environmental protection

Vietnam is an agricultural country with the majority of people and social labor resources living and working in rural areas, which is also the main productive force in the socio-economic development of the country. the country in general and the agriculture

in particular. Over the past years, agriculture has played an especially important role, contributing to economic development and socio-political stability.

However, with the development of the sector, the problem of agricultural and rural environment pollution is increasing. Results from the survey have shown that the most urgent issue in agriculture is the pollution in aquaculture areas, concentrated livestock areas, slaughterhouses, villages and intensive production areas due to the widespread use of pesticides and rural areas and the waste from Agricultural production and daily-life activities not be collected and handled properly and hygienically.

Sustaining agriculture on environmental sustainability is to minimize the harmful effects of environmental pollution caused by agricultural production. In order to protect the environment in general and agricultural production and rural areas in particular, in the coming time, it is necessary to implement some contents such as: restructure the agriculture sector in the direction of raising the added value and sustainable development in association with environmental protection, aim to limit and eliminate production forms which may cause environmental pollution or develop the industry green agriculture, environmentally friendly; Promote communication and raise the awareness of environmental protection in agriculture and rural areas; Formulate and perfect mechanisms and policies to encourage the use of cleaner production technologies and environmentally friendly technologies in production, business and service activities in the branches and domains managed by the Ministry. according to regulations of the Law. At the same time, boost the application of cultivation techniques, gradually reduce the use of plant protection chemicals and chemical fertilizers; Comply with the technical requirements when using chemical protection of plants, chemical fertilizers in agricultural production. Additionally, plan the exploitation and use of resources, maintain the fertility of the land, minimize air pollution and water resources.

The sustainability of the agricultural production system is the result of a harmonious combination of the above. If a factor causes a negative impact, or if there is a conflict between them, the whole system is affected especially making the human as a core in the development instead of goods From a developmental approach to increasing output and value to development, it is important to achieve both economic, environmental and social goals. On the basis of application of scientific and technological achievements, especially gene technology and biotechnology, etc. Additionally, restructure the production of plants and animals in line with regional advantages, raise productivity and labor value in agriculture in association with

settling social issues, raising people's living standards, Contribute to the overall socio-economic development of the country while limiting the impact of climate change, sea level rise, and sustainable environmental protection.

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# RESEARCH AND PROPOSE A LEGAL FRAMEWORK FOR STAKEHOLDERS IN THE NATIONAL MRV SYSTEM IN VIETNAM

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## **Abstract**

*In order to develop and complete the legal framework for the national MRV system, a number of prerequisites need to be taken such as: defining the roles and positions of stakeholders and implementing agencies with human necessary resources; identify national processes, procedures and policies for management and implementation of greenhouse gas emission reductions. The establishment of a national system of greenhouse gas inventories is the first step in developing a national MRV system. Some proposals and recommendations on MRV in this study are based on the views of the Ministry of Natural Resources and Environment and related parties. In particular, proposals on integrating issues of MRV into the framework of institutional climate change have been established with specific roles and positions of relevant ministries and sectors. The contact organizations for climate change and a number of relevant agencies are proposed for additional tasks on NAMAs/MRV. These agencies will work closely with NAMA implementers to carry out monitoring, reporting and verification. To complete the legal framework for the national MRV system, a number of legal documents that need to be issued by the Prime Minister, also the head of the National Committee on Climate Change. These documents need to specify the roles and responsibilities, as well as the cooperation mechanism among the ministries and relevant departments in the MRV system.*

**Keywords:** *Monitoring-Reporting-Verification (MRV), Climate change response, MRV National system.*

## **1. Introduction**

Recently, Vietnam has had a number of NAMA proposals along with recommendations on MRV (Luong Quang Huy, 2014; Mai Van Trinh, 2014; Nguyen Lanh, 2014). However, there are no specific, consistent and legal guidelines for implementing, reporting and verifying the activities to reduce greenhouse gas emissions. Currently, there are a number of relevant legal documents that are a good

basis for the national MRV system in Vietnam (Government of Vietnam, 2010, 2012a, 2012b, 2012c, 2013, 2014a, 2014b). Vietnam Energy Efficiency Law issued on June 28, 2010, regulating energy efficiency; policies and solutions to promote energy efficiency; and the rights, obligations and responsibilities of organizations, families and individuals in saving energy. The Law is the basis for monitoring energy use activities and energy saving solutions (Government of Vietnam, 2010). The revised Law on Environmental Protection was issued under Decision No. 55/2014/QH13 dated June 23, 2014 (replacing the old law in 2005) with the addition of new provisions on climate change. Article 41, Chapter 4 of the Revised Law regulates the management of greenhouse gas emissions and builds a national system of greenhouse gas inventories. The revised law is the highest legal document related to MRV. Accordingly, the national system of greenhouse gas inventories is still under construction and development, and is expected to be issued in 2016. This shows that the mechanism for sharing data between sectors and agencies, and cooperation between ministries has not been integrated on the basis of the MRV system (Government of Vietnam, 2014a). Decision No. 1775/QĐ-TTg dated November 12, 2012 on the management of greenhouse gas emissions and management of carbon credit trading activities in the world market (Government of Vietnam, 2012b). This project also set goals for strengthening national GHG inventory capacity and developing a national MRV system. However, the specific details of MRV-related activities are still limited and not sufficient to develop and establish a national MRV system.

In addition to the above legal documents, there are no specific guidelines and regulations on NAMA/MRV management and implementation in Vietnam. This is partly due to UNFCCC does not have any formal guidelines on MRV (UNFCCC, 2009; Hoang Manh Hoa, 2014). In addition, the establishment of a legal basis for NAMA/MRV management and implementation will also take a certain amount of time like the establishment of the CDM, air quality and environmental improvement should be measured to be assessed impacts of sustainable development of mitigation actions (Nguyen Van Minh, 2014). This study provides an overview of existing policies, activities and agencies related to MRV along with the challenges and limitations of each activity and agency. Some MRV-related proposals including institutional arrangements and the roles/responsibilities of stakeholders will be incorporated in the study.

## **2. The current activities about the MRV in Vietnam**

### ***2.1. Activities related to MRV***

In Vietnam, there are a number of activities related to MRV but they are not linked together, except for MRV for national REDD+ and greenhouse gas inventories as required by UNFCCC. These programs can be good experience for other areas to create a link

between MRV sectors and national MRV. The implementation of two national announcements and BUR1 is shown in Table 1, partly reflecting the capacity and limitations of Vietnam in MRV issues. Information and targets on greenhouse gas emission reductions in this study were collected and calculated using a top-down approach. Greenhouse gas inventory in national announcements is one of the project's products with support from international organizations. However, there is no formal organization or organizational system for these activities, making it difficult to synthesize data regularly or to ensure the continuity and consistency of data. The comparison between TBQGI and TBQGII shows efforts in overcoming the necessary data gaps for some areas. The application of default emission factors may not accurately reflect the current state of greenhouse gas emissions in Vietnam. Moreover, most calculations use a first-order approach - one of the simplest approaches. The over-reliance on a first-order approach is understandable because there is a lack of in-depth studies in practice, and databases do not meet the requirements of more detailed methods.

**Table 1: Activities related to MRV in Vietnam**

<b>Project</b>	<b>Activities related to MRV in Vietnam</b>	<b>Level</b>
Building the first National Notice; then the Second national one and a report updated twice a year	Inventory of national greenhouse gas emissions; Developing BAU scenarios for greenhouse gas emissions; Calculation of options to reduce greenhouse gas emissions; Report the results of actions taken to reduce greenhouse gas emissions.	National
Managing greenhouse gas emissions, Managing carbon credit business activities to the world market (Decision 1775).	In the project, the general concept of the MRV framework in Vietnam has been built; however, this do not include policy documents as well as institutional arrangements for implementation.	National
Strengthening the capacity of national GHG inventory in Vietnam from 2010 to 2014. This is funded by Japan International Cooperation Agency (JICA). MONRE: managing agency;	A national system of greenhouse gas inventories has been proposed in this project. This system should be integrated in the national MRV system. In addition, it is necessary to improve the roles and responsibilities	National

Project	Activities related to MRV in Vietnam	Level
Department of Meteorology and Climate Change: implementing agencies.	of stakeholders, sample data and reporting procedures before submitting the project to the prime minister and putting it into practice.	
Proposal for market preparation for Vietnam. Sponsored by the World Bank (WB). Conducted by Department of Hydrometeorology and Climate Change.	<p>A proposal framework for implementing NAMA/MRV in iron and steel industry. The legal basis is the Energy Efficiency Law. However, there is still a legal requirement as a ministerial decision to put the proposal into practice.</p> <p>A proposal framework for implementing NAMA/MRV in the waste sector. There is no legal basis for MRV activities in this area. Therefore, the issuance of a ministerial decision is necessary to implement MRV in the waste sector.</p>	Sector
Reducing greenhouse gas emissions in agriculture and rural development by 2020 (Decision 3119/QD-BNN-KHCN). Two periods: 2011-2015, 2016-2020. Ministry of Agriculture and Rural Development: managing agency. Funded by the Government of Vietnam and ODA.	A proposed greenhouse gas monitoring system in the agricultural sector. There is currently no legal document on this system.	Sector
National REDD+ Program. Ministry of Agriculture and Rural Development: managing agency. Funded by UN-REDD. Period time: from 2011 to present.	A final draft of the MRV system for the REDD+ program has also been developed. However, this draft has not been officially issued as a legal regulation.	Sector

MRV proposals for sectors in Table 1 are based on a bottom-up approach that does not rely heavily on centralized data collection systems. Instead, these proposals

provide the guidance for the measurement at the project or sector level. A bottom-up approach also has certain advantages to MRV activities in sector-level. Sectors which are carefully prepared can immediately enter the market, and participate in areas that will be prioritized in the contribution which is determined by Vietnam (NDC). Moreover, the capacity to monitor, report and verify greenhouse gas emission reduction activities can be easily learned from CDM, JCM, Lotus Standards (in the construction sector) or ISO standards in environmental and energy management are commonly applied in Vietnam (Nguyen Van Minh, 2014). Recently, in BUR1 (2014a) of Vietnam, the national greenhouse gas inventory methods in 2010 were referenced from the Greenhouse Gas Inventory Guidelines of the Intergovernmental Panel on Climate Change (IPCC, 2003).

## 2.2. Data collection

Activity data are collected from state agencies such as the General Statistics Office, ministries, sectors, agencies and local authorities. In the absence of information, operational data from factories, enterprises and research results are considered to use in the 2010 national GHG inventory. Most of the emission factors are used for inventories are the default values referenced in IPCC inventory guidelines. Emission factors from flooded rice fields are often taken from research by the Center for Climate Change Research and Sustainable Development. Table 2 briefly describes the methods and data used for the main areas.

**Table 2: Description of methods and sources of data used (MONRE, 2010, 2014b)**

Sector	Method	Data sources		
		Data	Emission factor	Other information
Industry	Level 1	National Statistics	Default emission factors according to IPCC	None
Agriculture	Most are level 1, some others are level 2	National statistics, data provided by government agencies and sectors	Most are the default emission factors according to IPCC, some are national specific data	Default values according to IPCC
LULUCF	Combination of level 1 and level 2	National statistics, data provided by government agencies, local	The default emission factors according to	Data from research papers

Sector	Method	Data sources		
		Data	Emission factor	Other information
		authorities, data from research papers	IPCC, data from the research papers	
Waste	Most are level 1, some others are level 2	National statistics, data provided by local government agencies, data from research papers	The default emission factors according to IPCC, data from the research papers	Data from research papers

Currently, Vietnam is studying the establishment of a national greenhouse gas inventory system. It is expected that this system will be established and put into operation in 2020.

### *2.3. Current roles and responsibilities of stakeholders*

In Vietnam, the national MRV system has not been established, so it is unclear whether the roles and responsibilities of stakeholders can participate in this system. However, according to the National Greenhouse Gas Inventory (NIR) report of 2005 and 2010, some agencies may play an important role in national MRV systems.

**Table 3: Stakeholders in proposing the national system of greenhouse gas inventories**

Ministry	Roles and responsibilities
<b>MONRE</b>	The Ministry of Natural Resources and Environment (MONRE) is the Ministry that manages national GHG inventories, CDM emission reduction activities, JCM and NAMAs. Thus, MONRE plays a central role in the national MRV system. MONRE will synthesize data from relevant ministries and agencies to develop national greenhouse gas inventory reports, national announcements and biennial update reports. This is the official source of information and the basis for reporting the situation of Vietnam's climate change mitigation to the Secretariat of the United Nations Framework Convention on Climate Change. However, the Ministry of Natural Resources and Environment is facing a number of challenges, including from establishing a legal basis for these activities to arranging, organizing and coordinating with relevant ministries and agencies in data sharing and report building.

Ministry	Roles and responsibilities
<b>Ministry of Industry and Trade of Vietnam</b>	<p>The Ministry of Industry and Trade of Vietnam is responsible for developing and implementing energy policies, plans, and regulations in Vietnam. The Ministry of Industry and Trade is responsible for establishing, implementing and monitoring the National Energy Development Strategy and the Power Sector Master Plan.</p> <p>Under the Ministry of Industry and Trade, the General Department of Energy coordinates activities of analysis and implementation of the Low Emission Development Strategy. Electricity of Vietnam (EVN), a state-owned enterprise will provide information on power transmission and distribution to the Ministry of Industry and Trade for planning purposes. The Institute of Energy is responsible for researching and collecting all the necessary data for the overall power sector plans. These data come from EVN, Department of Industry and Trade, as well as other sources such as investors.</p>
<b>Ministry of Agriculture and Rural Development of Vietnam</b>	<p>Ministry of Agriculture and Rural Development of Vietnam (MARD) is mainly responsible for a series of state management functions in the agricultural sector (eg: fisheries, forestry and rural development). In the context of low carbon, MARD is responsible for developing five-year draft regulations and decrees, plans, policies and strategies. In addition, the Ministry conduct research and suggest guideline for crops, livestock management and agricultural waste management. Under the Ministry of Agriculture and Rural Development, Department of Science, Technology and Environment (DSTE) is currently the contact agency for climate change and is the appropriate agency to manage, monitor and report emission mitigation of greenhouse gas in the agricultural sector. Currently, the DSTE is also leading the development of a framework for measuring, reporting and verifying (MRV) in the agricultural sector. Therefore, the coordination between the DSTE and the contact agency of the Ministry of Natural Resources and Environment in the national MRV system is very important in ensuring industry data is aggregated and fully evaluated.</p>

Table 3 indicates that stakeholder engagement will be different in the scope of the national greenhouse gas inventory system and the national MRV system. Stakeholders are responsible for verification may be government agencies or third

parties. For a data management system, the stakeholder might be a lead agency for a centralized system for aggregation and analysis. Data collection and management for MRV can be implemented at many levels and dependencies on different types of activities that reduce emissions are MRV. MPI and a number of ministries, such as the Ministry of Agriculture and Rural Development, Ministry of Construction, Ministry of Construction and MONRE may participate in the collection and reporting of data used for MRV, with specific responsibilities associated with the areas responsibilities of ministries.

### **3. General principles for the process of measuring, reporting and verifying**

#### ***3.1. Determine the emission scenario***

The emission scenario is a reference system for comparing and making greenhouse gas emissions calculation when there are no mitigation activities. The national scenario is the national reference system in Vietnam. This scenario is developed and managed by the National Committee on Climate Change (NCCC). Sectoral emission scenarios are sectoral reference systems selected for uniform use across the sector and this scenario is developed and managed by ministries that are affiliated.

The basic emission scenario should be considered in the absence of adequate climate change policies. The scenario can be updated periodically depending on existing data. The base year is usually the year with the latest summary of the greenhouse gas situation. The assumptions for the greenhouse gas emission project also need to be based on the latest plans and projects on socio-economic development. A good example of this is the development of SNC and BUR1 of Vietnam. The basic emission scenario of BUR1 is updated when SNC is updated with the base year and new assumptions.

#### ***3.2. Information and data for MRV***

Data are the input and output related to greenhouse gas emissions and mitigation actions. It goes hand in hand with the tasks of stakeholders at different levels. Basic data information used by the Ministries for measurement in their respective sectors and sectors includes:

- Data, information and methods for calculating and updating BAU scenarios;
- Data, information and methods for calculating mitigation options;
- Data and information measured during project implementation;
- Data and information are reported;

Methods for evaluating emissions are reduced. Currently, in each field, the relevant agencies have used their own data and information to serve the measurement process. Thus there is no link in managing industry data from ministries.

### *3.2.1. Measurement*

Measurement is a scientific and technical activity that uses equipment and methods to collect and process information related to greenhouse gas emissions from mitigation. There have been several reports of MRV proposals in the areas and projects mentioned above. In general, these projects and areas have similarities to the measured objects, including: Greenhouse gas emissions: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbon (HFCs), perfluorocarbon (PFCs) and sulfur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>), emissions from all socio-economic activities across the country. Mitigation goals are achieved by different industries; Climate support; Environmental, economic and social co-benefits. The output of the measurement process is information and data for the calculation of greenhouse gas emissions. The measurement methods must:

- (a) Clear in processes, transparent in methods and developed by third parties;
- (b) Being feasible for minimized project proposals;
- (c) Avoid duplication.

### *3.2.2. Reporting*

At the national level, the reporting process should follow the UNFCCC guidelines. At the project level, the scale of the reporting process should be developed based on the investment of mitigation projects. Projects funded by Official Development Assistance (ODA) and concessional loans from donors will have to develop and implement the process of reviewing and reporting plans as well as proposals and documents of the project as stipulated in Decree No. 30/2013/ND-CP issued by the Prime Minister on April 23, 2013 for the management and use of ODA and loans of the financial support. Projects and programs funded by direct foreign investment need to be designed in accordance with Vietnam's Foreign Investment Law dated November 12, 1996, and the Foreign Investment Law has amended and supplemented the date. June 9, 2000; Decree No. 24/2000/ND-CP stipulates the implementation of the Law on Foreign Investment in Vietnam and Decree No. 27/2003/ND-CP amending and supplementing a number of articles of Decree No. 24/2000/ND-CP issued on July 31, 2000 presenting the implementation of the provisions of the Foreign Investment Law in Vietnam. Mitigation programs or projects should be adjusted by the documents. Legal

normative documents in the monitoring and evaluation process to ensure investment efficiency and set objectives. Data at the project level will be managed at the ministerial level. It will then be submitted to the Ministry of Natural Resources and Environment to develop national reports.

### *3.2.3. Verification*

Domestic assessment or reporting process of greenhouse gas emission reduction requires the third party participation; in which this third party needs to have national and international certifications in assessing the amount of project emission reductions. Third parties are qualified agencies that assess the amount of emission reductions achieved by the proposed project. The applicant is a unit that has applied to the Department of Hydrometeorology and Climate Change to be recognized as a third party, provided that ISO 14065 is recognized by an international organization and a member of the International Accreditation Forum. IAF is based on ISO 14064-2 standards, or a member of an organization designated under the Clean Development Mechanism (CDM). Candidates will be selected and appointed by the contact agency of ministry level on NAMA / MRV to conduct appraisal process. Their responsibility in the MRV system can be: Emission assessment and the amount of greenhouse gas emissions reductions from mitigation projects; Submit appraisal reports to the NAMA contact agency at the ministry level. For the national level, ministries can be responsible for the appraisal process. For example, in the development of SNC, NIR and BUR1, draft reports were sent to relevant ministries for appraisal. After that, a scientific workshop with representatives from the ministries will be organized to provide feedback on the reports (SNC, BUR1 and NIR).

### ***3.3. Proposed institutional arrangements for NAMA / MRV***

In order to establish and operate the national MRV system, it is necessary to first complete the legal framework. A decision by the Prime Minister which identifies the roles and responsibilities of stakeholders and a clear structure for the national MRV system will be an important legal basis for implementation (Figure 1). Next, an inter-ministerial circular detailing the implementation will be issued.

In order to simplify institutional arrangements, the proposed NAMA/MRV agencies will be the contact agency for NAMA/MRV in their field. In addition, with climate change-related issues, the proposed responsibility of the NAMA/MRV contact agency at the ministerial level is essential (Table 4).

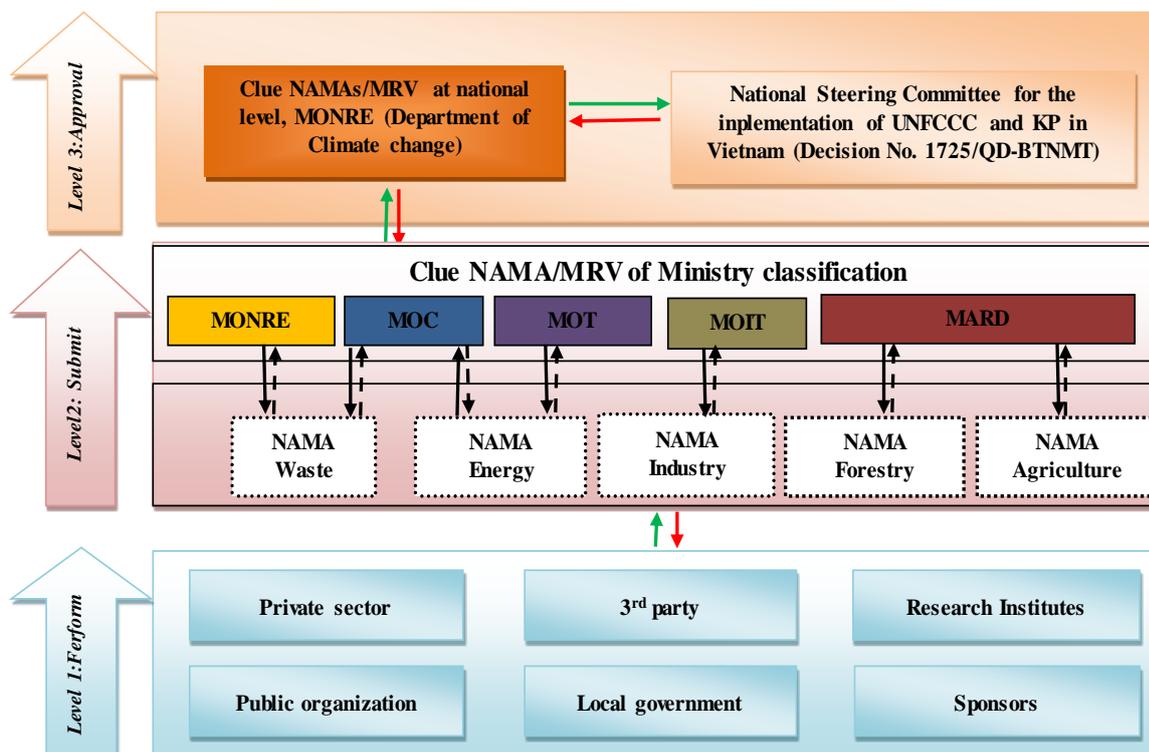


Figure 2: Stakeholders in the MRV system

Table 1: Proposing responsibilities of NAMA/MRV contact agency at ministerial level

Ministry	Responsibilities
<b>General Administrator of Environment - Ministry of Natural Resources and Environment</b>	<ul style="list-style-type: none"> <li>- Appoint or suspend third parties (consultants) for the assessment of GHG emissions reduction from NAMAs in the waste sector;</li> <li>- Approving GHG inventory methods in the waste sector;</li> <li>- Report on reducing GHG emissions from waste NAMAs for MONRE and submit appraisal report to Department of Hydrometeorology and Climate Change for certification;</li> <li>- Provide data and measurement information of waste NAMAs for the Department of Hydrometeorology and Climate Change;</li> <li>- Provide data and information on the waste sector for GHG inventories for the Department of Hydrometeorology and Climate Change;</li> </ul>
<b>Department of Industrial Safety and Environment Technology Ministry of</b>	<ul style="list-style-type: none"> <li>- Appoint or suspend third parties (consultants) for assessing GHG emissions reductions from NAMAs in the industrial sector;</li> <li>- Approving GHG inventory methods in the industrial sector;</li> <li>- Report on reducing GHG emissions from industrial NAMAs to the Ministry of Industry and Trade and send appraisal reports to the</li> </ul>

<b>Ministry</b>	<b>Responsibilities</b>
<b>Industry and Trade</b>	Department of Hydrometeorology and Climate Change for certification; - Provide data and measurement information of NAMAs in the industrial sector to the Department of Hydrology and Climate Change; - Providing data and information on the industrial sector for national GHG inventories to the Department of Hydrometeorology and Climate Change;
<b>Department of Forestry - Ministry of Agriculture and Rural Development</b>	- Appoint or suspend third parties (consultants) for assessing GHG emissions reductions from NAMAs in the field of LULUCF; - Approving GHG inventory methods in the field of LULUCF; - Report the amount of GHG emission reductions from NAMAs in the field of LULUCF to MARD and send the appraisal report to the Department of Hydrometeorology and Climate Change for certification; - Provide data and measurement information of NAMAs in the field of LULUCF to Department of Hydrology and Climate Change; - Provide data and information on the field of LULUCF for national GHG inventories to the Department of Hydrometeorology and Climate Change;

#### **4. Conclusions**

The management of mitigation activities in Vietnam can be reflected in national announcements, reports and national greenhouse gas inventory reports. However, there are no specific rules or guidelines for the management and implementation of MRV. Proposing the MRV system in this report are based on the views of the Ministry of Natural Resources and Environment, and related parties. In particular, it is proposed that the MRV system will be integrated into climate change institutional arrangements under the establishment of representatives from relevant ministries. The contact agency for climate change and many related ministries are also the focal point for NAMAs/MRV at ministerial level. These agencies will work closely with private companies or other organizations implementing NAMA and MRV. In order to establish and operate the MRV system, a number of legal documents are required, issued by the Prime Minister; The Prime Minister is also the head of the National Committee on Climate Change. The legal documents will

address the roles and responsibilities of the relevant ministries and agencies in the MRV system as well as the proposed cooperation mechanism. Proposing the MRV system is an important issue in the context of the Conference of Parties to the UN Framework Convention on Climate Change (COP24) in Katowice, Poland and the Contribution Report. Nationally-determined contribution (NDC) because Vietnam will publish its intended contribution and implement mitigation actions to fulfill its expected goals after 2020.

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# **A CHOICE EXPERIMENT TO ESTIMATE WILLINGNESS-TO-PAY FOR AIR QUALITY IMPROVEMENTS IN HANOI CITY: RESULTS OF A PILOT STUDY**

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## **Abstract**

*Air pollution has been a major concern for people around the world, especially in urban areas of developing countries, such as Hanoi city. Based on the choice experiment approach, this paper presents estimates of residents' willingness-to-pay (WTP) for improving air quality of Hanoi. Hanoi residents expressed their strong preferences for increase of green spaces and reduction of air pollution-related deaths. The mean marginal WTP for the increase of 1 m<sup>2</sup> in per-capita tree cover is estimated at 2,256 VND per month; and for the reduction of 1 in 100,000 death related air pollution is about 1,865 VND per month. Hanoi residents appear to be willing to pay monthly 70,591 VND for the maximal improvements in air quality. This maximum amount of WTP accounts for about 0.5% of household income. The information on residents' WTP for improving air quality would be useful for policy makers in investing effectively in controlling air pollution given the budget limitation.*

**Keywords:** *Air pollution, Choice experiment, Hanoi*

## **1. Introduction**

Air pollution is one of the most serious problems in the world. According to World Health Organization (WHO), more than 80% of people in urban areas are living in an atmosphere with quality levels not satisfying the WHO recommended limits. Recent estimates by WHO show that ambient air pollution accounts for an estimated 4.2 million deaths per year. While ambient air pollution affects developed and developing countries alike, low- and middle-income countries experience the highest burden, with the greatest toll in the WHO Western Pacific and South-East Asia regions.<sup>1</sup>

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<sup>1</sup> Information is provided by WHO: <http://www.who.int/airpollution/ambient/en/> (accessed date: 01/09/2018)

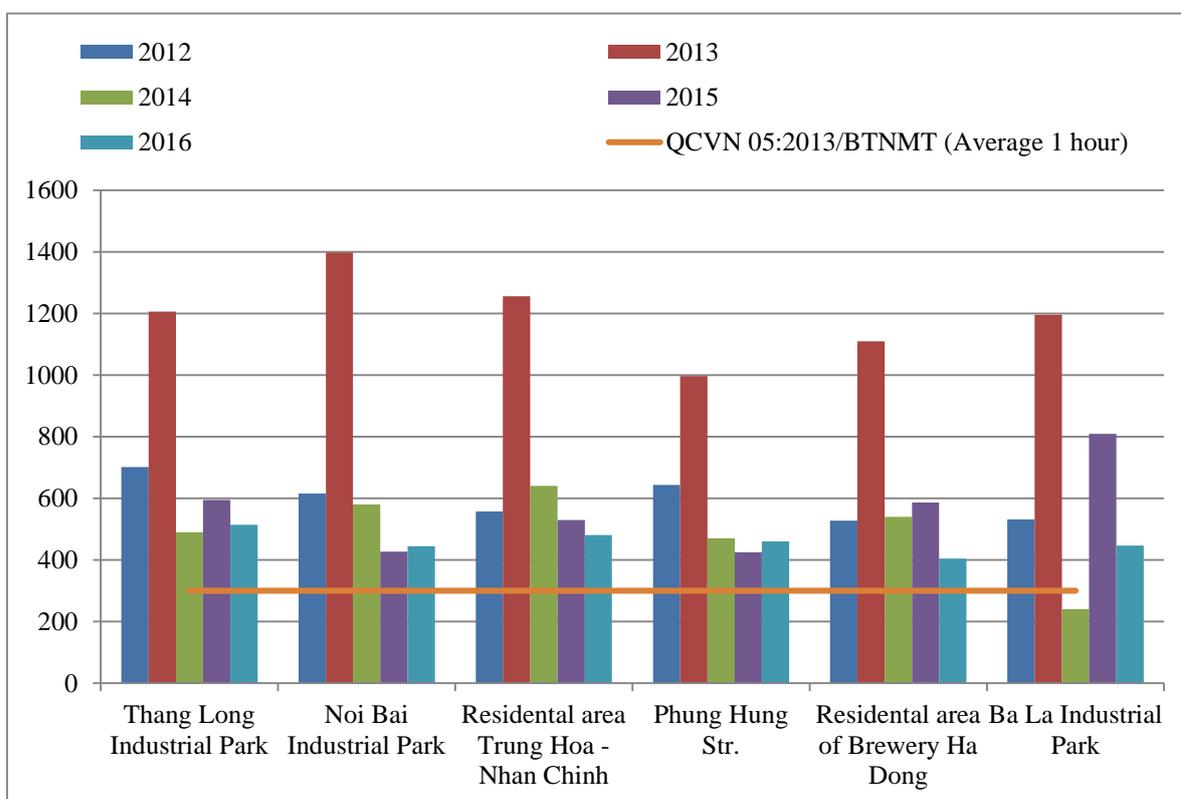
• **Air pollution in Hanoi**

Rapid economic development poses a growing threat to environmental quality in Vietnam. Even at this early stage of development environmental pollution, especially air pollution is getting more severe in the big cities including Hanoi, the capital city of Vietnam. Industrial production, increasing urbanization, and the rapid growth of individual vehicles are among the main factors contributed to intensity of urban air pollution in Vietnam (MONRE 2017).

The monitoring data of the Center for Environmental monitoring of Ministry of Environment and Natural Resources (MONRE) shows that, in the period from 2012 to 2016, air pollutants such as dust and particles at a number of locations in Hanoi exceeded nationally stipulated standards for ambient air quality (QCVN05:2013) as seen in Fig.1-1. Like many other cities of Vietnam, particulate matter (PM) is a major environmental problem of Hanoi (MONRE, 2017). The noise level is also persistently high. The concentration of other pollutants, such as NO<sub>2</sub>, SO<sub>2</sub>, CO in the air of Hanoi have remained relatively stable in recent years and below the national standard mentioned above.

**Figure 1. Air Pollution in Hanoi, 2012-2016**

**Dust pollution levels ( $\mu\text{g}/\text{m}^3$ )**



Source: Center for Environmental Monitoring of MONRE, various years.

### PM2.5 pollution level in 1<sup>st</sup> quarter of 2018 ( $\mu\text{g}/\text{m}^3$ )



*Source: Green ID (2018)*

Air pollution in Hanoi is considered to be more serious when compared with other big cities in Vietnam (Luong et al., 2017). The WHO Global Ambient Air Quality Database (update 2018)<sup>2</sup> shows that PM concentration in Hanoi are usually higher than in other cities of Vietnam, such as Ho Chi Minh City, Da Nang and Ha Long. The annual concentration of PM<sub>2.5</sub> (monitored by the Vietnam's U.S. Embassy at 7 Lang Ha Street, Hanoi) in 2016 reached  $50.5 \mu\text{g}/\text{m}^3$ , and in 2017 was  $42.6 \mu\text{g}/\text{m}^3$  nearly twice as compared to the Vietnamese standard ( $25 \mu\text{g}/\text{m}^3$ ) and five times as recommended by WHO ( $10 \mu\text{g}/\text{m}^3$ ) (GreenID, 2017, 2018). According to the Department of Natural Resources and Environment of Hanoi city, 70% of air emissions are caused by traffic activities. Emissions from more than 4 million vehicles account for 85% of CO<sub>2</sub> emissions and 95% of volatile organic compounds (Box 2.1, MONRE (2017))

#### • Health impact of air pollution

It is well known that people's health is adversely affected by air pollutants from vehicles such as PM<sub>10</sub> and PM<sub>2.5</sub> (particulate matter less than 10 or 2.5 microns in diameter, respectively), nitrogen oxides, sulfur dioxide and carbon monoxide, as well as secondary pollutants such as ozone (WHO 2018). These cause respiratory problems, sinusitis, bronchitis, asthma, lung cancer, cardiovascular diseases and premature death. Particles have also been shown to increase the mortality rate. People with asthma and respiratory diseases in turn are highly susceptible to particles, nitrogen oxides, sulfur dioxide and ozone. In addition, lead particles have serious

<sup>2</sup> The WHO database on air quality provides information on PM concentration of 4000 cities in 108 countries over the period 2008 - 2017 (<http://www.who.int/airpollution/data/cities/en/>, access 10/8/2018)

effects on children's growth and development. Children with high lead levels in their blood are often deficient in weight and tend to have a low count of red blood cells. Their IQ levels on average are also lower than those with lower lead levels. In Vietnam and other countries in the region, air pollution is now acknowledged as a serious public health threat. WHO (2018) estimates that globally about 7 million people die every year from exposure to fine particles in polluted air that lead to diseases such as stroke, heart disease, lung cancer, chronic obstructive pulmonary diseases and respiratory infections, including pneumonia. Among them, about 90% are believed to be in Asia and Africa. According to the Vietnam Health Statistical Year Book 2015 (Ministry of Health, 2017), diseases of the respiratory system accounted for the highest numbers of both proportion morbidity and mortality by disease chapters (Ministry of Health, 2017).

The health effect of air pollution was first studied in Vietnam as early as in 1995 with a focus on traffic police officers (Dang, 1995). Due to extended exposure to high levels of air and noise pollution, 2.9% of traffic policemen were infected with tuberculosis, compared with an average infection rate of 0.075%. Moreover, 76% of traffic policemen suffered from ear, nose, and throat infection, and 32% of them had reduced hearing ability. Separately, National Institute of Occupational and Environmental Health (NIOEH) conducted a study on the health impacts of air pollution in 2005 (NIOEH, 2005). It showed that 83.1% of the respondents suspected that dust pollution came from transportation. Examination of persons who worked more than 8 hours per day on roadside found a significant difference in the health conditions between targeted and reference groups.

The health effects of air pollution to Hanoi citizens are considered to be serious. Hieu et al. (2013) estimated the number of deaths due to PM10 pollution from traffic in 2009 was 3200 people, greater than the number of deaths from traffic accidents. Luong et al. (2017) showed that in the period of 2010-2011, if the PM10, PM2.5 concentration increased to  $10\mu\text{g}/\text{m}^3$ , the number of children hospitalizations related to the respiratory diseases in Hanoi increased by 1.4% and 2.2%, respectively.

To cope with this situation, the Government of Viet Nam in June 2016 has issued the National Action Plan on Air Quality Management until 2020 with the main goal of strengthening air quality management based on controlling emission sources and monitoring ambient air quality. In recent years, Hanoi's Government also has made efforts to implement measures for improving air quality such as cleaning dust on trucks before entering the city, installing additional air monitoring stations, planting one million trees in the period of 2016-2020. However, air pollution is still a major concern of the Hanoi citizens, demanding for more effective solutions to improve air quality.

The aim of this paper is to estimate households' willingness-to-pay (WTP) for improvements in air quality in Ha Noi by using the choice experiment approach. Such information is important for policy makers when determining public investments and policy instruments in order to effectively improve air quality in Ha Noi city.

## **2. Choice experiment design and implementation**

### ***2.1. Theoretical framework for the choice experiment valuation***

Air quality is a non-market commodity, so that market prices are not available to measure users' WTP. Instead, non-market valuation method - measuring the monetary value of changes in individual welfare associated with the change in environmental quality - should be applied. Questionnaire surveys were conducted using choice experiment approach, a stated preference method, which involves the construction of a hypothetical market to obtain and analyse respondents' choices of an improved cyclone warning service.

Choice experiment (CE) has its roots in conjoint analysis where individuals make choices between multi-attribute goods and services (Adamowicz et al., 1994; Boxall et al., 1996; Adamowicz et al., 1998; Alriksson and Öberg, 2008). In a CE survey, individuals are requested to decide over a series of choice sets. Each choice set includes a number of alternatives, which are described by different levels of the attributes or characteristics of the good or service that is being valued. In choosing between the alternatives, the individuals also make a trade-off between the levels of the attributes. If a monetary (cost) attribute is included in the choice sets, the researchers can estimate the individual's marginal willingness to pay for a change in each of the other non-market attributes.

CE is an application of Lancaster's theory of value, combined with random utility theory (Hanley et al., 1998; Wang et al., 2007). According to Lancaster's theory, individuals' choices are determined by the utility or value that is derived from the attributes of the goods and services rather than directly from the goods and services themselves (Lancaster, 1966). CE is also based on the behavioral framework of random utility theory (RUT), which describes discrete choices in a utility maximizing framework. The researchers are able to observe only part of individuals' utility, and the unobserved component is randomly distributed. Under the RUT,  $U_{in}$ , utility that individual  $n$  enjoys from choice alternative  $i$  can be decomposed into two parts:

$$U_{in} = V_{in} + \varepsilon_{in}(1)$$

where  $V_{in}$  is the systematic and observed component of the choice utility; and  $\varepsilon_{in}$  is the stochastic unobserved component.

The observed component of the choice utility can be disaggregated further, as utility can depend on the choice attributes ( $Z_{in}$ ) that may be viewed differently by different individuals and the characteristics of the individual ( $S_n$ ). Then equation (1) can be rewritten as follows:

$$U_{in} = V(Z_{in}, S_n) + \varepsilon_{in} \quad (2)$$

Alternative  $i$  is chosen over some other option  $j$  if and only if  $U_i > U_j$ . Due to the unobserved component, the researchers are unable to predict choices perfectly. This uncertainty is expressed in terms of choice probability, and the probability that individual  $n$  will choose option  $i$  over other options  $j$  in choice set  $t$  is given by:

$$\text{Prob}(i | t) = \text{Prob}(V_{in} + \varepsilon_{in} > V_{jn} + \varepsilon_{jn}; \text{ all } j \in t \text{ and } j \neq i) \quad (3)$$

The individual's indirect utility function ( $V_i$ ) in Equation (2) for a choice option can be modelled with various specifications. If assuming that the relationship between the utility and attributes of the choice is linear such that  $V = \beta Z_{in}$ , and that only the main effects are considered, the functional form of the indirect utility function is as follows:

$$V_{in} = \beta_i + \sum_k \beta_k Z_{kn} + \sum_p \theta_p S_{pn} \quad (4)$$

where:

$\beta_i$  is vector of constant terms (alternative specific constants) for  $i = 1, \dots, I$  choice options;

$\beta_k$  is a vector of coefficients attached to the vector of attributes ( $Z_{kn}$ ) for  $k = 1, \dots, K$ ;

$\theta_p$  is a vector of coefficients attached to the vector of respondent's characteristics ( $S_{pn}$ ) for  $p = 1, \dots, P$ .

The utility function estimated for each alternative, therefore, contains a unique alternative specific constant (ASC), the effects of a choice's attributes, and the individual's characteristics. The ASCs represent the average effect on choices of any variation that cannot be explained by the observed attributes or the socio-economic characteristics.

With the assumption of linear indirect utility function, compensating surplus (CS) welfare estimates may be obtained in the following formula (Hoyos, 2010):

$$CS = -\frac{1}{\alpha} [\ln \sum \exp V_{0n} - \ln \sum \exp V_{1n}] \quad (5)$$

where  $\alpha$  is the marginal utility income (represented by the  $\beta$  coefficient of the cost attribute), and  $V_{0n}$  and  $V_{1n}$  are indirect utility functions before and after a specified change in the non-market good or service, respectively.

The marginal benefit of an improvement on a single attribute can be estimated by the ratio of coefficient given in equation 6 (Hanley et al., 2001):

$$\text{marginal WTP} = -\left(\frac{\beta_{\text{attribute}}}{\beta_{\text{cost}}}\right) \quad (6)$$

The above ratio is usually known as the implicit price of the non-market attribute. It shows the trade-off made between the non-market attribute and the cost attribute, and an estimate of the individual's willingness to pay for a unit change in the non-market attribute (Bergmann et al., 2006).

## ***2.2. Survey design and implementation***

### *The choice experiment design*

The design of choice experiment includes decisions about attributes and their levels, the design of choice tasks, and questionnaire design. The attributes are used to describe to the respondents a storm early warning service. For the estimated utility function of users, the attributes will be the observed independent variables. The appropriate selection of attributes is a critical component in a CE exercise, since the selected attributes affect respondents' choices, as well as the policy under concern. Having defined the attributes, the levels of these attributes must be determined. Levels can be expressed qualitatively or quantitatively, and the quantitative attributes can be presented in absolute or relative terms (Bennett and Blamey, 2001). In this part of a CE exercise, a series of focus group studies should be conducted with the aim of selecting the relevant attributes and levels (Alpizar et al., 2001). The focus studies could be in the form of verbal group discussion or actual surveys. In order to obtain contrasting opinions and to obtain a representative sample of the population, the focus group composition should be heterogeneous in terms of occupation, background, age and gender (Suh, 2002).

The most notable disadvantage of CE approach is the cognitive burden associated making choices between bundles of attributes and levels. The larger the number of attributes and the levels, the bigger the cognitive burden that the respondents face. The solutions for this stage of survey design are to carefully select attributes and choose the optimal number of attributes (DeShazo and Fermo, 2002). One important lesson, learned from reviewing the previous studies, is that most CE studies in environmental and meteorological valuation have used 4-5 attributes including the cost attribute in each choice set.

***Health Risk related to air pollution.*** Following the above instructions and lessons from the literature, this research started by studying the attributes and attribute levels used in previous studies. A key lesson is that attributes related to health effects of air pollution have been commonly selected in the design of CEs for air quality

improvements (Yoo et al., 2008; Rizzi et al., 2014). This selection is reasonable, since many epidemiological studies have indicated that air pollutants such as particulate matter (PM), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), and ozone (O<sub>3</sub>) are responsible for increasing mortality and morbidity in different populations around the world, especially from respiratory and cardiovascular diseases (CVD) (Phung et al., 2016).

Attributes selected should be both relevant and understandable to respondents. To collect residents' desire for air quality improvements, two focus studies were conducted in the form of an internet survey with 191 respondents and 212 face-to-face interviews in Hanoi city. In the surveys, respondents were presented a list of measures, which were designed based on a rigorous review of international experiences and the Government's plans on controlling air emission sources in order to improve urban air quality. Then, we asked respondents to choose their preferred measures that should be implemented at high priority to improve air quality of Hanoi city. The most preferred measure chosen by more than 70% of respondents is the increase of green spaces.

***The effects of tree on urban air pollution.*** In recent years, researchers have been looking into potential benefits of green space and vegetation, including temperature reduction and other microclimatic effects, removal of air pollutants, emission of volatile organic compounds and tree maintenance emissions and energy effects on buildings etc. Reduced air pollution was acknowledged and developed by several authors such as Antoine et al. (2017), Wissal et al. (2016), The Nature Conservancy (2016), Beckett et al. (2000) and Lovett (1994) among others. Authors generally agree that the use of urban vegetation is often promoted as an effective measure to reduce air pollutants concentrations. This measure is based on the underlying argument that trees (and vegetation in general) have the capability of cleaning the air by filtering out the pollutants. Different studies of Antoine et al. (2017), Wissal et al. (2016) have experimentally assessed the deposition rate at which pollutants are taken up by the urban vegetation and showed that trees trap air pollution by up to about 7%.

Based on the focus studies, in concert with an in-depth literature review, the proposed attributes and their levels are presented in Table 1. Having attributes and levels determined, an orthogonal choice task design was used, resulting in eighteen choice tasks. In order to reduce the cognitive burden on respondents, each respondent was randomly chosen to face a block of nine choice tasks. For each choice task, respondents indicated their preference between two alternatives: one potential improvement program and the status quo (i.e., keeping all levels at their current levels). The status quo option remains identical across tasks. An example of a choice task is presented in Figure 2.

**Table 1: Attributes and levels**

<b>Attributes</b>	<b>Current levels</b>	<b>Improvement levels</b>
Health Risk related to air pollution:	Out of 100,000 people:	
People who get hospitalised due to air pollution-related diseases	200 people	200; 150; 100 people
People who die from air pollution-related diseases	36 people	36; 27; 18 people
Tree cover area	8 m <sup>2</sup> per capita	10; 14; 18 m <sup>2</sup> per capita
Change to household electricity bill, starting in 2020	No change	Increase of 5; 15; 25 thousand VND/month = 60; 180; 300 thousand VND/year

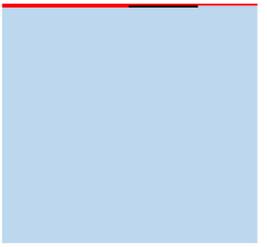
The structure of the questionnaire included three main components as follows:

+ The survey started with questions about respondents' perception of air pollution in Ha Noi. The overview of the Government's plans on improving air quality was presented to respondents. A list of relevant measures to improve air quality was also presented to respondents, who then were requested to make choices of three most preferred measures. Benefits of implementing those measures were discussed with respondents, and they also were requested to choose three types of benefits which are most relevant to their situations.

+ After being aware of benefits of improvements in air quality, respondents were requested to make choices in the series of nine choice tasks in Part 2. Respondents also were reminded about their budget constraints when making their choices. Follow up-questions were included to identify anomalies in the responses, such as reasons for zero bids, hypothetical bias (respondents may agree to pay because the payment is hypothetical).

+ The final part of the questionnaire collects respondents' socio-economic and attitudinal information to analyse the factors affecting the WTP for improvements in air quality in Ha Noi.

**Figure 2: An example of a choice task**

	<b>Current Situation</b>	<b>Proposed Improvement</b>
<p><b>HEALTH RISK related to air pollution</b></p> <p>Out of 100,000 people:  <b>200 people get hospitalised</b>  <b>36 people die</b></p> 	<p>Out of 100,000 people:  <b>150 people get hospitalised</b>  <b>27 people die</b></p> 	
<p>Out of 100,000 people:</p> <ul style="list-style-type: none"> <li><span style="color: red;">■</span> People who get hospitalised due to air pollution-related diseases</li> <li><span style="color: black;">■</span> People who die from air pollution-related diseases</li> <li><span style="color: blue;">■</span> Remaining population</li> </ul>		
<b>TREE cover area</b>	<p><b>8 m<sup>2</sup> per capita</b></p> 	<p><b>14 m<sup>2</sup> per capita</b></p> 
Change to household electricity bill, starting in 2020	<p>No change</p> 	<p><b>Increase of 15,000 VND/month</b>            =  <b>180,000 VND/year</b></p> 

*Survey implementation*

In January and February 2019, an online survey was designed using the Google Forms<sup>113</sup>. Residents of Hanoi city were invited to participate in the online survey. The survey was completed by 161 respondents. Table 2 presents a summary of the socio-economic characteristics of the sample in our CE exercise.

**Table 2: Socio-economic characteristics of the surveyed sample**

<b>Socio-economic characteristics</b>	<b>Mean</b>
Perception of air pollution levels <sup>a</sup>	4.07
Perception of air pollution impacts <sup>a</sup>	4.06
Age (years)	33
Percentage of college degree	92.5
Monthly electricity bill (thousand VND per household)	780
Sample size	161

<sup>a</sup> Perception was measured using 5-point Likert scales ranging from very high (5) to very low (1)

**3. Willingness-To-Pay for improving air quality in Hanoi city**

To estimate the WTP for improving air quality in Hanoi, conditional logit (CL) model was developed using NLOGIT 5.0 software. Results of the CL model are

<sup>3</sup> The questionnaire in Vietnamese is available here: <https://forms.gle/cxTGBKn53MUpFbLq9>

presented in Table 3. The sign of all attribute variables in Table 3 confirming the prior expectation that the likelihood of choosing an improvement program decreases as the increased payment in the electricity bill rises; the likelihood of choosing an improvement program decreases as numbers of air pollution-related illness and death increase; and as tree cover area rises, the likelihood of supporting an improvement program increases. All variables are statistically significant at the 1% or 5% level, confirming effects of the independent variables on residents' choices of supporting the improvements in air quality.

**Table 3: Results of conditional logit model**

Attribute variables	Coefficient ( $\beta$ )	Standard deviation	P-value
Air pollution-related Illness	-0.00313**	0,013	0.013
Air pollution-related Death	-0.04042***	0,007	0,000
Tree cover area	0.04889***	0,014	0,001
Change to household electricity bill	-0.02166***	0,006	0,000

Notes: \*\*\* = Significance at 1% level ; \*\* = Significance at 5% level

Mean marginal and total WTP per household for improvements in air quality in Hanoi city are reported in Tables 4 and 5, respectively. The total WTP was estimated for two improvement programs described as follows:

+ Medium improvement: number of people hospitalised 150/100,000, number of people died 27/100,000 and tree cover area of 14 m<sup>2</sup> per capita.

+ Maximal improvement: number of people hospitalised 100/100,000, number of people died 18/100,000 and tree cover area of 18 m<sup>2</sup> per capita.

**Table 4: Mean marginal WTP estimates in thousand VND per month**

Attribute variables	Coefficient ( $\beta$ )	Standard deviation
Reduction in air pollution-related Illness	0.144**	0.069
Reduction in air pollution-related Death	1.865***	0.660
Tree cover area	2.256***	0.722

Notes: \*\*\* = Significance at 1% level ; \*\* = Significance at 5% level

**Table 5: Total WTP estimates in thousand VND per month**

Program	Coefficient ( $\beta$ )	Standard deviation
Medium improvement	37.552***	10.930
Maximal improvement	70.591***	20.666

Notes: \*\*\* = Significance at 1% level

#### 4. Conclusions

In this paper, residents' WTP for improving air quality of Ha Noi was estimated. Hanoi residents expressed their strong preferences for increase of green spaces and reduction of air pollution-related death. The mean marginal WTP for the increase of 1 m<sup>2</sup> in per-capita tree cover is estimated at 2,256 VND per month; and for the reduction of 1 in 100,000 death related air pollution is about 1,865 VND per month. Hanoi residents appear to be willing to pay monthly 70,591 VND for the maximal improvements in air quality. This maximum amount of WTP accounts for about 0.5% of household income. The estimate in our study is similar to the WTP values of 0.4-0.7% of household income, which were estimated for improvements in air quality in some Chinese cities (Wang and Mullahy, 2006; Wang et al., 2006; Wang and Zhang, 2009).

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# MAINSTREAMING GREEN HOUSE GAS (GHG) EMISSION REDUCTION ASSESSMENT INTO GREEN GROWTH ACTION PLAN (GGAP) IN QUANG NINH PROVINCE

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## **Abstract**

*This paper combines the methodologies of green-house-gases (GHG) emission inventories, emission factors by the Inter-governmental Panel on Climate Change (IPCC) and specific emission factors for Vietnam to assess GHG emission, reduction potentials and costs in Quang Ninh province. GHG emissions from sectors of energy, transportation, agriculture, forest and land use (AFOLU) in Quang Ninh have a tendency to increase fast up to approximately 29.25 – 31.55 million tons of CO<sub>2</sub> equivalent (CO<sub>2e</sub>) in 2020 and around 32.90 – 35.13 million tons of CO<sub>2e</sub> in 2030. With 16 opportunities in industries and energy, 7 opportunities in AFOLU, the potentials of GHG reduction towards 2020 respectively are 3.03 and 2.22 million tons of CO<sub>2e</sub>; for 2030 respectively 4.34 and 2.38 million tons of CO<sub>2e</sub>, with the total costs respectively at 1,671 billion VND and 578 billion VND (exchange rate at VND 23,000 = USD 1). Quang Ninh province needs to complete and announce the provincial green growth action plan (PGGAP) with the list and information of GHG reduction opportunities to create consensus as well as attract investments from private sector and the community; review financial policy framework and other related policies to promote the GGAP implementation.*

**Keywords:** *Green House Gas (GHG); Emission Reduction; Green Growth Action Plan (GGAP); Quang Ninh province.*

## **1. Introduction**

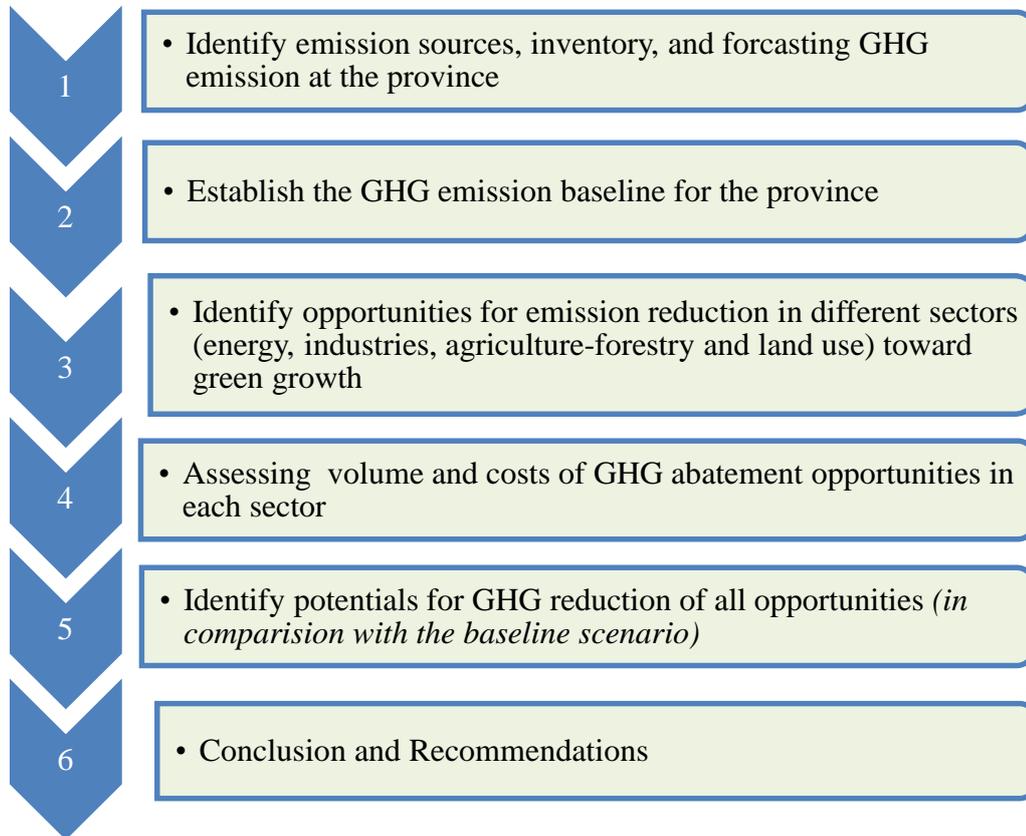
Green growth (GG) is increasingly recognized and accepted as a suitably fundamental model for sustainable development (SD) in the context of climate change (CC) by more and more countries worldwide. Vietnam is among some of pioneer developing countries that have issued National GG strategy (Decision No. 1393/QĐ-TTg dated 25/9/2013) and the National GG Action Plan (GGAP for the period 2013-2020 (Decision No. 403/QĐ-TTg dated 20/3/2014), with the objectives: to reduce the greenhouse gases (GHG) emission intensity around 8 - 10% for the period 2011 – 2020 in comparison to that of 2010; the direction towards 2030 - 2050 is to reduce GHG at least 1.5 - 2% annually. The National GGAP requests each province/ city to study and develop the GGAP and suitable GHG reduction plans.

Quang Ninh province - one of the economic drivers in the Key Northern Economic Zone and the whole country, has identified its priority in enhancing the capacity to respond to CC, reducing emission while increasing sequestration potentials of GHG. Quang Ninh People's Committee issued the provincial Action Plan no. 6970/KH-UBND dated on 16 November 2015 to implement the National GG strategy for the period 2016-2020. The province aims to sustainable socio-economic development in line with National GG strategy's targets, including prioritized ones: Economic structure is gradually shifting from "brown" to "green" activities, prioritizing non-mining industries and services, in parallel with more sustainable and cleaner coal mining; Intensifying investment for socio-economic infrastructure and applying science and technology; Environment protection and active responses to climate change. However, this action plan does not yet introduce the list of GHG reduction projects based on specific calculation on their reduction potentials and costs. Therefore, it is essential to study to assess these potentials and costs for GHG reduction, leading to the contribution for scientific foundation, proposing suitable mechanisms and policies to serve the formulation of Quang Ninh GGAP towards 2020 and 2030, making important part of the national efforts in realizing the National GG Strategy and Action plan for SD in Vietnam.

## 2. Research Methodology

### *Procedure for assessing GHG reductions*

The procedure for assessing GHG reduction includes 6 main steps as shown in Figure 1.



**Figure 1. Procedure for assessing GHG reduction in Quang Ninh province**

*Source: authors' proposal*

### *Methodology for calculating GHG emission*

Calculation of emission for GHG inventories and projection is conducted under GHG inventory methodology issued by IPCC for the 1<sup>st</sup> time in 1995, revisions in 1996, complimentaries in 2003 and 2006.

According to IPCC's methodology and related documents, GHG emission/ absorbance volume of an activity is calculated by the following formula:

$$E_i = AD_i \times EF_i \times CO_{2e}$$

*Where:*

E<sub>i</sub>: GHG emission/ reduction or absorbance volume of activity i (unit in ton of CO<sub>2e</sub>)

AD<sub>i</sub>: level of activity in sector/ sub-sector i (for example: number of transportation vehicles, rice cultivation areas, the number of husbandries, used fuel volume ...)

EF<sub>i</sub>: GHG emission factor estimated for each unit of activity (for example, kg of carbon emitted on each unit of cultivation area or fuel volume burnt,...).

CO<sub>2e</sub>: factor for converting emissions in to CO<sub>2</sub> equivalent.

Factors of EF<sub>i</sub> used in this study are specific factors (Tier 2 and 3) for Vietnam. In cases there are no respective data, public announcement or accepted by Vietnam, default factors Tier 1 by IPCC 2006 are used.

Three types of GHG that are assessed include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O; all converted into volume of CO<sub>2</sub> equivalent (CO<sub>2e</sub>) via global warming potential index (GWP) provided in the second report of IPCC in 1996 (SAR) and the fifth report in 2014 (AR5) (See Table 1).

**Table 1: Weights for converting GHG into CO<sub>2</sub> equivalent according to GWP index**

Type of gas	Symbolic	Global Warming Potentials (GWP)	
		SAR	AR5
Carbon dioxide	CO <sub>2</sub>	1	1
Methane	CH <sub>4</sub>	21	28
Nitrous oxide	N <sub>2</sub> O	310	265

*Sources: IPCC (1996, 2009,2016)*

Four sectors to be studied include (i) emission from energy in “non-transportation” activities (immobile energy); (ii) emission from transportation; (iii) emission from industrial processes; and (iv) emission from agriculture-forestry-other land uses.

#### *Identify opportunities for GHG reduction*

Two steps were conducted in identifying GHG emission reduction opportunities. Step 1 involved approach of brain storming, discussing with experts from Energy Institute, Ministry of Industry and Trade; Agriculture Environment Institute; Institute of Strategy and Policy for Agriculture and Rural Development; Ministry of Construction... A “long list” of 51 emission abatement opportunities were defined, which included: 24 opportunities in energy sector (transportation, tourism, buildings, hotels, restaurant, households, industry, aquaculture,...); 16 in agriculture, forestry and land use (infrastructure, environment, high-tech, ...); 5 in industry sector (activities in cement sector, construction materials and freezing system); 6 in institutional area. Step 2 is opportunities screening, which employed consultation with provincial departments and agencies in Quang Ninh (Departments of Planning and Investment; Industry and Trade; Agriculture and Rural Development; Natural Resources and Environment; Tourism; Transportation; Construction...), making analysis in all aspects of economic, social and environment, institution; strength, weaknesses, opportunities,

threats (SWOT) for groups of opportunities and each opportunity; using questionnaire for selecting opportunities. After all, a “short list” of 35 opportunities are considered as practical and get more than >50% of votes from local experts.

#### *Assessing GHG abatement opportunities and relevant costs*

Five steps to assess GHG abatement costs are simplified in the expert approach: (1) Consult with experts to identify abatement technologies/ opportunities in areas of energy, transportation, agriculture, forestry and land use; (2) Refer market prices and experts on investment and operation costs, project life cycles... of the abatement opportunities; (3) Develop Excel-based calculation sheet for calculation of cost-benefit of those selected opportunities; (4) Import calculated data to MACC Builder Pro – a software that allows to present marginal abatement costs of mitigation opportunities in the ranking order, from the lowest to highest cost; (5) Adjust prioritization of opportunities based on the outputs from MACC Builder Pro.

#### **Data sources**

Sources of data used in calculating GHG emission and mitigation in Quang Ninh include:

- Data on economic and emission sectors from Annual statistics, Provincial Statistics Agency; Provincial Department of Industry and Trade, Department of Planning and Investment, Department of Construction; Department of Transportation; Transportation Safety Committee; Department of Agriculture and Rural Development; National Electricity Master Plan; Electricity Corporation; Provincial socio-economic development master plans; Expert consultations.

- Data on emission factor and other parameters from Spreading factor of GHG in coal mining in Vietnam; Electricity transmission emission factor in Vietnam; Cement Emission Factor in Vietnam; Ratio of coal pit and open mining; Emission Factors in rice cultivation and husbandry waste management in Vietnam; GHG sequestration factor in forestry; Emission factors by IPCC revised in 1996, 2006; Conversion factors SAR, AR5; Ex-Act Tool (FAO, 2016).

*Time frame:* Time frame for GHG emission inventory (historical data) is 2010 – 2015; GHG emission and reduction projection serves for establishing Quang Ninh’s GGAP towards 2020 and 2030.

### **3. Results**

#### **GHG emission sources in Quang Ninh province**

Quang Ninh has the area of over 12,200 square km. The province holds diversified natural resources with specific species and large storage with high quality,

including: coal, kaolin, clay, glass sand and lime stones,...., top tourism potentials with famous beaches and Ha Long Bay and Bai Tu Long Bay Landscape...

Being the number 1 coal mining and supplying center of Vietnam with annual volumes from 35 to 40 million tons, this is one of the main emission sources of CH<sub>4</sub> at present and in the future. In addition, with nearly 2,000 MW thermal capacity, GHG emission from power generation in Quang Ninh is quite high. Road and water transportations play important role in the province's economic development and as one of the major GHG emission sources. In industry, with nearly 100 high energy consuming enterprises (covering 6% of the country's in 2015), there are various groups and large companies located in the province, energy consuming activities in industrial production has continued to one of the key GHG emission sources in Quang Ninh. Furthermore, buildings (offices and living quarters) and households are also remarkable emission sources.

Thus, main sub-sectors selected to be studied are those having visible impact on the provincial economic restructuring process, with remarkable emission levels, or emission absorbance, including: coal exploitation; power generation; energy for industrial production; energy in buildings and households; energy in transportation; industrial processes – cement production; husbandries; rice cultivation and forestry.

#### *GHG emission calculation and projection*

The results of GHG emission calculation and projection based on 2 conversion factor versions of SAR and AR5 are presented in Table 2.

**Table 2: GHG emission in year 2015, projection towards 2020 and 2030**

*Unit: thousand tCO<sub>2e</sub>*

Sectors	Emission factor in SAR			Emission factor in AR5		
	Year 2015	Year 2020	Year 2030	Year 2015	Year 2020	Year 2030
Energy	20,103.97	28,935.27	29,484.78	21,618.98	30,947.56	31,064.46
Agriculture	1,421.20	1,808.95	2,362.74	1,776.38	2,287.10	3,010.22
Forestry*	-3,529.21	-3,731.03	-3,731.03	-3,529.21	-3,731.03	-3,731.03
Industry	2,874.24	4,787.76	4,787.76	2,874.24	4,787.76	4,787.76
<b>Total (master plan)</b>	<b>20,870.19</b>	<b>31,800.95</b>		<b>22,740.39</b>	<b>34,291.40</b>	
<b>Total (revised master plan)</b>	<b>20,870.19</b>	<b>26,245.86</b>	<b>32,904.25</b>	<b>22,740.39</b>	<b>28,349.77</b>	<b>35,131.40</b>

\* Forestry sector absorbed GHG, then the net emission is less than 0 (<0)

*Sources: author's calculation*

The GHG projection towards 2020 and 2030 are based on socio-economic development targets set by the province (Quang Ninh’s socio-economic development master plan towards 2020, vision to 2030 – Decision No. 2622/QĐ-TTg, 2013; The revised master plan in 2015), and expert consultations on tendency of households’ consumption as well as technology trend in some sectors.

The calculation results show that energy is the largest emission sector in the province, accounting more than 80% of the total emission over years. However, the total emission volume of coal sector holds decreasing trend due to green economic direction, volumes of coal mining and consumption have reduced. Energy production and consumption from other sectors, as well as cement production industry tends to rise in recent years. Emission from agriculture-forestry sector remains negative (sequestration).

Using AR5’s emission factors leads to a higher emission from 7 to 10% in comparison with using those of SAR.

*Identification and assessment of potentials and costs of GHG emission reduction opportunities*

Based on reference to market prices, in discussion with experts and related departments in Quang Ninh on parameters and essential assumptions during the calculation of investment capital, annual costs/ benefits, project cycle, emission intensity, amount of CO<sub>2e</sub> emission reduced, ... for each opportunity in the short list. Costs/ benefits and investment parameters for each opportunity will be imported to Excel calculated sheet established by the author. The calculated results then continues to be imported to MACC Builder Pro software. There are just 23 opportunities with potential to come to final results by meeting the requirements of the Excel sheet and of MACC Builder Pro, include 16 opportunities in industry and energy sector and the other 7 in agriculture and forestry sector.

The total potential for emission reduction in industry and energy sectors in Quảng Ninh towards 2020 is 3.03 million tCO<sub>2e</sub> as shown in Table 3.

**Table 3. Potential for emission reduction in industry and energy sectors by the year 2020**

	<b>Opportunity</b>	<b>Costs of Implementation (mil VND)</b>	<b>Amount of emission reduction (tCO<sub>2e</sub>)</b>	<b>Project cycle (year)</b>
1	Assist in using biofuel E5, B5 in public transportation replacing 100% of traditional petroleum	50,000	30,480	35

	<b>Opportunity</b>	<b>Costs of Implementation (mil VNĐ)</b>	<b>Amount of emission reduction (tCO<sub>2e</sub>)</b>	<b>Project cycle (year)</b>
2	Assist in using biofuel E5, B5 in goods transportation, replacing 100% diesel	80,000	48,150	35
3	Assist in solar hot water tank (joining EVN efforts)	1,107,671	366,940	15
4	Develop public transportation system (bus replacing 9% of individual vehicles, electricity vehicles replacing 35% individual vehicles)	1,399,440	308,100	35
5	Assist high energy efficiency air conditioner for households (60% households in urban area, 20% in rural area).	348,153	267,580	7
6	Assist in using high efficient LED in lighting system in 90% of households	19,171	13,440	5
7	Assist in equipping high efficient refrigerators in 100% of households	50,055	24,480	7
8	Support to replace lighting systems with high efficient lights in buildings – hotels – trade and services (100% buildings in the province)	25,515	16,770	15
9	Equip solar heating water in hotels and buildings (65% of hotels/buildings in the province)	22,235	8,930	20
10	Establish energy control system in industrial enterprises (75% of enterprises located in the province)	15,000	15,040	25
11	Tourist Information centers and street lighting system using solar energy (10,000 centers and spots in the province)	42,000	14,700	20
12	Using high efficient amorphous for the electricity transmission network (100% amorphous stations to be newly invested and regularly maintained and upgraded)	700,000	151,250	15
13	Installing small/household scale solar system in remote mountainous areas and islands (15% of households)	4,725,124	1,160,820	20
14	Assist in installing waste heating recovering system for power generation in 4 cement plants in the province (total capacity is 16 MW)	201,600	98,940	30
15	Assist in installing high efficient air conditioner in hotels, high buildings (75% office/commerce buildings and hotels in the province)	255,150	268,330	7
16	Remove and replace 100% handmade brick kilns by advanced technology ones	907.87	238,840	8

*Source: Calculation results from Excel sheet and MACC Builder Pro software*

The total investment capital need for 16 opportunities (in present value) is around 9 thousand billion VND.

**In the Agriculture-Forestry-Land use, GHG emission reduction potential for 2020 of 7 opportunities is 2,22 million tCO<sub>2e</sub>., as shown in Table 4.**

**Table 4. GHG emission reduction potential in Agriculture-Forestry-Land use sector by the year 2020**

	<b>Opportunity</b>	<b>Volume of GHG emission reduced (tCO<sub>2e</sub>)</b>
1	Optimal use of and replace nitrogen fertilizer in all rice cultivation areas of the province	20,860
2	Using bio char to improve efficiency of rice plantation in all cultivation areas of the province	3,350
3	Water saving and control in rice cultivation using 3D3I (3 decrease and 3 Increase in all rice cultivation areas of the province	23,280
4	Convert unused land into special-used forest land	16.210
5	Convert unused land into protection forest land	529.990
6	Convert unused land into production forest land	690.810
7	Support to install biogas system for household and farm scale husbandry (50% of key cattle heads: pigs, cows)	933.250

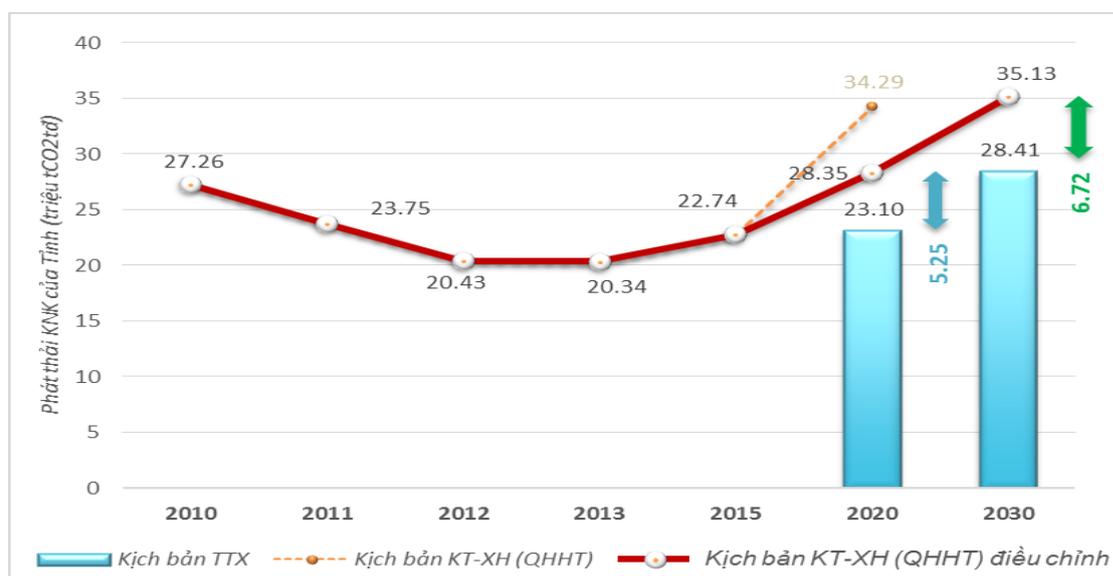
*Source: Illustration from calculation results by Excel sheet and MACC Builder Pro*

Continue to project to year 2030 on 16 opportunities in industry and energy sectors, GHG emission reduction potential is of 4.34 million tCO<sub>2e</sub>, total cost at present value is 1,671 billion VND; 7 opportunities in Agriculture – Forestry and Land use with the GHG emission reduction potential of 2,384 million tCO<sub>2e</sub>, total cost at present value is 578 billion VND.

#### **Analysis on GHG emission reduction’s impacts in different scenarios**

In comparison to business as usual (BAU) scenario, the total potential of GHG emission reduction for all opportunities in green growth scenario is 5.25 million tons of CO<sub>2e</sub> in 2020 and 6.72 million tons of CO<sub>2e</sub> in 2030, achieving 20 - 25 % of the

province's emission intensity in 2010; 23 – 28% of the province's emission intensity in 2015. The emission reduction in 2030 also reach approximately 21% of the province's emission intensity in 2020.



**Figure 2. Projected emission for baseline and green growth scenarios**

*Source: Calculation and synthesis by authors*

Additionally, if following the green growth scenario, the province's emission intensity in GDP will be down from 0.60 – 0.65 tons of CO<sub>2e</sub>/ 1 million VND to 0.15 – 0.16 tons of CO<sub>2e</sub>/1 million VND.

**Table 5. GHG Emission Reduction and Emission Intensity in GDP in various scenarios**

Item	Unit	Volume	
		SAR	AR5
Emission in 2010	million tCO <sub>2</sub>	25.13	27.26
Emission in 2020 (baseline scenario)	million tCO <sub>2</sub>	32.28	34.29
Emission in 2020 (master plan revised scenario)	million tCO <sub>2</sub>	26.25	28.35
Emission in 2020 (green growth scenario)	million tCO <sub>2</sub>	21.53	23.10
Emission in 2030 (projection)	million tCO <sub>2</sub>	32.90	35.13
Emission in 2030 (green growth scenario)	million tCO <sub>2</sub>	26.85	29.88
Emission reduction potential towards 2020	million tCO <sub>2</sub>	4.72	5.25
Emission reduction in 2020 in comparison with 2010	%	22.2	19.23
Emission reduction potential towards 2030	million tCO <sub>2</sub>	6.05	6.72
Emission reduction in 2030 in comparison with 2010	%	24.07	24.62

Item	Unit	Volume	
		SAR	AR5
Emission reduction in 2030 in comparison with 2020	%	23.04	23.72
<b>Emission intensity in GDP (comparative price in 1994)</b>			
2010	tCO <sub>2</sub> / million VND	0.60	0.65
2020 (baseline scenario)	tCO <sub>2</sub> / million VND	0.25	0.26
2020 (master plan revised scenario)	tCO <sub>2</sub> / million VND	0.19	0.22
2020 (green growth scenario)	tCO <sub>2</sub> / million VND	0.16	0.18
2030 (master plan revised scenario)	tCO <sub>2</sub> / million VND	0.18	0.19
2030 (green growth scenario)	tCO <sub>2</sub> / million VND	0,15	0,16
Emission intensity reduction in 2020 in comparison to that of 2010 (green growth scenario)	%	15.8	18.1
Emission intensity reduction in 2030 in comparison to that of 2010 (green growth scenario)	%	16.7	19.1

*Source: calculation by the authors*

#### **4. Conclusion and Recommendations**

##### ***Conclusion***

- Implementing GHG emission reduction opportunities in green growth action plan scenario is essential to achieve targets set in Vietnam's Green Growth Strategy (VGGGS);

- GHG emission reduction opportunities in Quang Ninh province are mainly in 2 key sectors of energy & industry (16 opportunities) and agriculture – forestry – land use (7 opportunities);

- Order ranking of priorities is based on factors having impacts on the cost effectiveness like time, project cycle, investment need and operation, abatement costs, emission reduction scale and potential, other technology, social and institutional... requirements. Among the 2 sectors, opportunities in the agriculture - forestry sector should be quickly realized.

- It is important to design plan and roadmaps for implementing opportunities, starting from simple ones with small investment need; at the same time, it is essential to establish institutions and strategy to promote mobilization from enterprises, local and foreign investors for big and long-term opportunities.

##### ***Recommendations***

- Based on the recognition of cost-effectiveness and potentials of GHG emission reduction opportunities in Quang Ninh, it is important to promote the implementation of those opportunities;

- There needs a suitable mechanism to attract, involve and support all individuals, institutions and sectors in and outside the province to develop and realize National Green Growth Strategy at the local level in Quang Ninh;

- It requires continuation of studying, identifying, updating and assessing new GHG emission reduction opportunities;

- Other activities include:

(i) Complete and publish the province's GGAP attached with the list of GHG emission reduction opportunities in full information to create the consensus and to attract investment from enterprises and communities;

(ii) Review all provincial regulations and strategies to propose either revision or issue new implementation framework in accordance with green growth direction;

(iii) Study to complete management organization structure to strengthen cooperation and coordination among agencies, institutions in realizing GG and sustainable development;

(iv) Complete the program for establishing mechanism and policy to mobilize and managing resources (finance, humans) for GG towards 2020 and 2030;

(v) Develop criteria to identify GG programs/ projects;

(vi) Formulate monitoring, evaluation and reporting framework/ plans on the implementation of Green Growth Strategy (GGS) and Action Plan;

(vii) Develop provincial policy framework for budget allocation and management to promote GGS implementation;

(viii) Establish financial policy framework (including: tax, fees, subsidies, facilities, sanctions, green/ sustainable criteria for enterprises posted on stock markets) to promote GGS implementation.

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# ESTIMATES AND PREDICTIONS OF GREENHOUSE GASES EMISSIONS FROM OPEN RICE STRAW BURNING IN QUANG NINH DISTRICT, QUANG BINH PROVINCE

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## **Abstract:**

*Quang Ninh district, Quang Binh province is an agricultural district, which workers in the agricultural sector accounted for more than 60%. In 2018, the quantity of rice straw in Quang Ninh district was approximated of about 74,103tons. In the summer-autumn season, the quantity of rice straw was about 43,853 tons (account 59% of the year). The result of 200 local farmers showed that open rice straw burning is the most common activity in the summer-autumn season (73%). In the winter-spring crop, 60% of rice straw is used for animal husbandry, 13% of rice straw is mixed with cow dung, manure... for composting. Based on the quantity of rice straw burning on the fields, the greenhouse gas emissions CO<sub>2</sub>, CH<sub>4</sub>, CO, PM10... was estimated by using research results of Gadde B et al 2009 and the ABC EIM guidelines. The results using research results of Gadde B et al 2009 show that CO<sub>2</sub> emissions are the largest with 44,405.9 tons/year (accounting for 96.2% of total emissions). In addition, there are small quantities of other gases such as CO (1055.4 tons/year), CH<sub>4</sub> (36.5tons/year), PM10(112.5tons/year). The total emissions from open rice straw burning in Quang Ninh district by using research results of Gadde B et al 2009 have similar values by using the ABC EIM guidelines on case of average emissions. Utilizations of rice straw to produce microbiological organic compost is suitable practices that need to study to reduce rice straw open burning activity in the next time.*

**Keywords:** *Quang Ninh district; air pollution; green house gas emissions; rice straw.*

## **1. Introduction**

One of the causes of climate change is the emission of greenhouse gases from agriculture and industry. In agricultural production, when harvesting rice, 10 years ago Vietnamese farmers chose to collect the straw for cattle feeding and fuel for

cooking, but with the decrease in number of cattle and buffalos due to increased mechanisation, development of industrial cattle feed and use of gas stove, most modern farmers choose to burn their rice straw, while only some incorporate the straw into the soil by ploughing instead, as a cheap disposal method. Recent research reveals that while in the rural areas, 30-40% of the rice straw is burnt on the field; the figure in the suburban area is at 60-70% [5]. That practices will pollute the air, especially increasing greenhouse gases including dust PM<sub>25</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>[3]... The determination amount of greenhouse gases arising from the burning of straw is the basis to proposal of mitigation solutions.

Quang Ninh district, Quang Binh province is an agricultural district, which workers in the agricultural sector accounted for more than 60%. In 2018, the total food output is 85,760 tons [1]. The strengthening agricultural production led to increase the quantity of agricultural waste such as rice straw, pesticides packaging, cow dung... At present, Quang Ninh district haven't a reasonable plan to collect and treat agricultural solid waste. So, Farmers treat waste in the traditional way such as burning, burying or disposing directly into the environment. This activity will have an adverse impact on the soil, water, air environment and people's health.

In the world, there have been some studies on emissions from burning straw such as research of Gadde B et al in 2009, the ABC EIM guidelines. However, in Vietnam, studies related to the burning of straw in the field are limited due to human resources and funding. This study was conducted to examine and calculate the amount of emissions from straw burning in the field, the case study: Quang Ninh district, Quang Binh province. The results of the study are the basis for the proposed solution to reduce the burning of straw.

## **2. Materials and Method**

### ***2.1. Study Area***

Quang Ninh is a district of Quang Binh province in the North Central Coast of Vietnam. Because of the rich soils and the suitable climate conditions, Quang Ninh district is the highest rice-producing area in Quang Binh province according to the density of rice paddy fields and greatest rice production, with 2 growing seasons per year. The first growing season in Quang Ninh district typically called Winter-Spring crop begins at the end of December, and the harvest is from the end of June to mid-July. The second growing called Summer-Autumn crop begins 15–20 days after the first season has ended, and the harvest is from mid-November to early December. However, recently in Summer-Autumn crop, most local farmers cultivate rice in the form of regeneration [2].



Where SGR is ratio of the amount of straw / rice yield (%); Wr is dry weight of straw (kg) and W<sub>1</sub> is rice yield (kg).

### 2.3.2. The amount of straw burned in the field

The amount of straw burned in the field in 2018 can be calculated as:

$$Q_{st} = Q_p \times SGR \times k \text{ (tons)} \quad (\text{Eq.2})$$

Where Q<sub>p</sub> is rice yield in 2018 (tons); SGR is ratio of the amount of straw / rice yield (%) and k is percentage of straw burned in the field (%) .

### 2.3.3. The emissions from burning straw

The greenhouse gas emissions can be calculated by using research results of Gadde B et al 2009 and the ABC EIM guidelines.

#### a. According to research by Gadde B et al 2009

The emissions from burning straw can be calculated as:

$$E_i = \frac{Q_{st} \times EF_i \times F_{co}}{1000} \text{ (tons/year)} \quad (\text{Eq.3})$$

Where E<sub>i</sub> is the emission of air pollutant i from burning straw (tons/year); Q<sub>st</sub> is the amount of straw burned in the field (tons); EF<sub>i</sub>- the emission factor (EF) of pollutant i in kg/tons dry matter burnt and F<sub>co</sub> is the combustion factor (dimensionless), The IPCC recommended F<sub>co</sub> value of 0.8 for rice residues was used in this study.

**Table 1. The emission factor EF<sub>i</sub> according to research by Gadde B et al 2009[3]**

Pollutants	CO <sub>2</sub>	CH <sub>4</sub>	CO	SO <sub>2</sub>	NO <sub>x</sub>	PM10	PM2.5
EF <sub>i</sub> (kg/tons)	1460	1.2	34.7	2.0	3.1	3.7	12.95

#### b. According to the ABC EIM guidelines

The emissions from burning straw can be calculated as:

$$E_i = \frac{Q_{st} \times EF_i \times \mu}{1000} \text{ (tons/year)} \quad (\text{Eq.4})$$

Where E<sub>i</sub> is the emission of air pollutant i from burning straw (tons/year); Q<sub>st</sub> is the amount of straw burned in the field (tons); EF<sub>i</sub>- the emission factor (EF) of pollutant i in kg/tons dry matter burnt and μ is the performance of straw burning, μ=0.85.

**Table 2. The emission factor EF<sub>i</sub> according the ABC EIM guidelines[4]**

Pollutants		CO <sub>2</sub>	CH <sub>4</sub>	CO	SO <sub>2</sub>	NO <sub>x</sub>	PM10	PM2.5
Emission levels	Low	791	9.6	64.2	0.18	0.62	3.5	3.2
	Medium	1,200	9.6	93	0.18	1.81	9.1	8.3
	High	1674	9.6	180	0.4	3.43	9.1	8.3

### 3. Results

The research has determined the amount of straw produced after harvest in Quang Ninh district in 2018 and the ratio of the amount of straw / rice yield.

The research has estimated the amount of greenhouse gas emissions from burning of straw in Quang Ninh district using research results of Gadde B et al 2009 and using the ABC EIM guideline.

The research has proposed solution to reduce the burning of straw in Quang Ninh district.

### 4. Discussion and Conclusion

#### 4.1. Ratio of the amount of straw / rice yield SGR

According to survey results, in Quang Ninh district, there are two rice crops: Winter-Spring and Summer-Autumn. The average rice yield of Summer-Autumn and Winter-Spring crop is respectively 5.8 tons/ha and 2.5 tons/ha. In Summer-Autumn crop, Farmers cultivate rice in the form of regeneration.

**Table 3. The ratio of the amount of straw / rice yield in Winter-Spring crop**

Sample	Winter-Spring crop		
	Averaging	The biggest	The smallest
Sample 1	0.86	0.90	0.83
Sample 2	0.73	0.80	0.69
Sample 3	0.75	0.83	0.70
Sample 4	0.80	0.85	0.77
Sample 5	0.81	0.85	0.78
Averaging	0.79		

(Source: Summary of questionnaire results)

**Table 4. The ratio of the amount of straw / rice yield in Summer-Autumn crop**

Sample	Summer-Autumn crop		
	Averaging	The biggest	The smallest
Sample 1	1.06	1.12	0.92
Sample 2	1.07	1.10	1.00
Sample 3	0.96	1.05	0.91
Sample 4	0.90	1.00	0.85
Sample 5	1.00	0.92	1.05
Averaging	1.00		

(Soure: Summary of questionnaire results)

Table 3 and 4 show that the ratio of the amount of straw / rice yield in Winter-Spring crop (the average value of 0.79) is lower than Summer-Autumn crop (the average value of 1.00). The ratio of the amount of straw / rice yield value in this study is almost identical to result of research by Gadde B et al 2009 (the ratio of the amount of straw / rice yield is 0.75).

#### ***4.2. The types of straw treatment in Quang Ninh district***

According to that survey, in Quang Ninh district, there are four common types of rice straw treatment and management: burning, composting, feeding and giving to neighbours. 73% of rice straw generated in the Summer-Autumn season was burnt directly on the field. In the Winter-Spring season, due to frequent rain, the rate of burning rice straw was decrease into 14%. This survey also confirms that most of farmers tended to continue burning rice straw in the following years.

**Table 5. Types of rice straw treatment in Quang Ninh district**

<b>Types of rice straw treatment</b>	<b>Percentage (%)</b>	
	<b>Winter-Spring crop</b>	<b>Summer-Autumn crop</b>
Burning	19	73
Composting	13	5
Feeding	60	22
Giving to neighbours	8	-

*(Source: Summary of questionnaire results)*

In the Winter-Spring season, 60% farmers chose to collect the straw for cattle feeding and fuel for cooking. But, In the Summer-Autumn season with the decrease in number of cattle and buffalos due to increased mechanisation, development of industrial cattle feed and use of gas stove, most farmers choose to burn their rice straw. Moreover, in recent years, combine harvester has been used more and more, the amount of straw spread on the fields is difficult to collect.

#### ***4.3. The amount of straw burned in the field in Quang Ninh District***

The amount of straw burned in the field in 2018 was estimated using Eq. (2) and the ratio of the amount of straw / rice yield (%) in table 3 and percentage of straw burned in the field in table 5.

**Table 6. The amount of straw burned in the field in Quang Ninh District in 2018**

Season	Winter-Spring	Summer-Autumn	Total
Rice yield (tons)	55,510	30,250	85,760
The ratio of the amount of straw / rice yield	0.79	1.00	
The amount of straw (tons)	43,853	30,250	74,103
percentage of straw burned (%)	19	73	
The amount of straw burned in the field (tons)	8,332	22,083	30,415

(Source: the author's calculation results)

#### **4.4. Estimation of greenhouse gas emissions from burning of straw in Quang Ninh District**

The amount of greenhouse gas emissions from burning of straw in Quang Ninh district was estimated using Eq. (3), Eq. (4) and the amount of straw burned in the field in 2018 in table 6.

*a. According to research by Gadde B et al 2009*

**Table 7. The greenhouse gas emissions from burning of straw in Quang Ninh district in 2018**

Pollutants		CO <sub>2</sub>	CH <sub>4</sub>	CO	SO <sub>2</sub>	NO <sub>x</sub>	PM10	PM2.5
Ei (tons/yr)	Winter-Spring	12,164.7	10	289.1	16.7	25.8	30.8	107.9
	Summer-Autumn	32,241.2	26.5	766.3	44.2	68.5	81.7	286
	Total	44,405.9	36.5	1055.4	60.9	94.3	112.5	393.9

(Source: the author's calculation results)

The results using research results of Gadde B et al 2009 show that CO<sub>2</sub> emissions are the largest with 44,405.9 tons/year (accounting for 96.2% of total emissions). In addition, there are small quantities of other gases such as CO (1055.4 tons/year), CH<sub>4</sub> (36.5 tons/year), PM10 (112.5 tons/year).

*b. According to the ABC EIM guidelines*

**Table 8. The greenhouse gas emissions from burning of straw in low emission level in 2018**

Air Pollutant	Low emission			Medium emission			High emission		
	Winter-Spring	Summer-Autumn	Total	Winter-Spring	Summer-Autumn	Total	Winter-Spring	Summer-Autumn	Total
CO <sub>2</sub>	6591	17468	24059	9998	26500	36498	13948	36967	50915
CH <sub>4</sub>	80	212	292	80	212	292	80	212	292
CO	535	1418	1953	775	2054	2829	1500	3975	5475
NO <sub>x</sub>	1	4	5	1	4	5	3	9	12
SO <sub>2</sub>	5	14	19	15	40	55	29	76	105
PM10	29	77	106	76	201	277	76	201	277
PM2.5	27	71	98	69	183	252	69	183	252
<b>Total</b>	<b>7268</b>	<b>19,264</b>	<b>26,532</b>	<b>11,014</b>	<b>29,194</b>	<b>40,208</b>	<b>15,705</b>	<b>41,623</b>	<b>57,328</b>

*(Source: the author's calculation results)*

The results using the ABC EIM guidelines show that CO<sub>2</sub> emissions are the largest from 24,059 to 50,915 tons/year corresponding to low to high emission. CO<sub>2</sub> emissions accounts for 96.2% of total emissions. Next, the amount of CO gas emissions from 1,953 to 5,475 tons/year, accounting for an average of about 7% of total emissions. The total emissions generated in the high emission is 57,328tons, 2.16 times higher than the low emission (26,532 tons) and 1.4 times compared medium emission (40,208 tons).

The total emissions from open rice straw burning in Quang Ninh district by using research results of Gadde B et al 2009 have similar values by using the ABC EIM guidelines on case of average emissions.

#### ***4.5. Proposed Solutions***

Compost is the relatively stable product that results after organic materials decompose. Compost usually contains relatively low amounts of major nutrients but they contain micronutrients, enzymes and microorganisms that are not often found in inorganic fertilizer.

The process of decomposing rice straw generates high temperature, keeping pathogen level low and reducing the viability of weed seeds may contain in rice straw. Straw must be removed from the field before piling and spreading in the field. The decomposing will take at least 1 to 1.5 month. Recently, in Vietnam, a newly invented biotic product, namely Fito-Biomix RR, will shorten the process of decomposing straw. So, with a cheap price, easy implementation, farmers tends to using of rice

straw to produce microbiological organic compost when they have spare time and area for composting process. This management method could be applied in most of regions in Vietnam.

#### **4.6. Conclusion**

The research has determined the amount of straw produced after harvest in Quang Ninh district in 2018 is 85,760 tons. The ratio of the amount of straw / rice yield is 19% in winter-spring crop and 73% in summer-autumn crop.

The amount of greenhouse gas emissions from burning of straw in Quang Ninh district was estimated:

According to research by Gadde B et al 2009: CO<sub>2</sub> emissions are the largest with 44,405.9tons/year (accounting for 96.2% of total emissions). In addition, there are small quantities of other gases such as CO (1055.4 tons/year), CH<sub>4</sub> (36.5 tons/year), PM10 (112.5 tons/year).

According to the ABC EIM guidelines: CO<sub>2</sub> emissions are the largest from 24,059 to 50,915 tons/year corresponding to low to high emission. CO<sub>2</sub> emissions accounts for 96.2% of total emissions. Next, the amount of CO gas emissions from 1,953 to 5,475 tons/year, accounting for an average of about 7% of total emissions. The total emissions generated in the high emission is 57,328tons, 2.16 times higher than the low emission (26,532 tons) and 1.4 times compared medium emission (40,208 tons).

Utilizations of rice straw to produce microbiological organic compost is suitable practices that need to study to reduce rice straw open burning activity in the next time.

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# ASSESSMENT OF COASTAL SEA WATER QUALITY FOLLOW THE SPACE AND PERIOD FROM 2013-2017 IN QUANG BINH TOURISM BEACHES

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## **Abstract**

*This study focuses on accessing the status and changes of coastal sea water quality in Hai Ninh and Nhat Le Beach in Quang Binh province from 2013-2017. According to monitoring results in 2017, generally, the sea water quality in Hai Ninh and Nhat Le Beach in dry and rain seasons was pretty good; all of the values of parameters were much lower than the standard. The values of the monitoring parameters vary between the observation periods in the year. TSS content tend to be higher in the first survey, lower in the third survey. Heavy metals such as Cd, Hg, As were relatively stable. Coliform densities in Nhat Le beach increased by 4 observation periods in the year. While coliform density in Hai Ninh beach changed unevenly. The average content of TSS,  $\text{NH}_4^+$ , Fe and coliform in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. In period from 2013-2017, almost of the values of monitoring parameters were much lower than the standard. There was not the sign of coastal sea water quality degradation in the Hai Ninh and Nhat Le Beach from 2013 to 2017.*

**Keywords:** *Coastal sea water quality; Quang Binh province; Tourism beaches.*

## **1. Introduction**

Quang Binh province, a well-known tourism site in the central Viet Nam, is famous not only because of its beauty, but also of the cultural and cuisine values. There are many beautiful beaches including the Hai Ninh and Nhat Le beach. The increased development of tourism in recent years creates the motive force for socio-economic development for the localities. However, it creates more and more stress to the environmental quality here. Moreover, the quality of coastal water is also affected by economic activities.

At present, waste from aquaculture ponds, factories... have caused certain impacts to the environmental quality, especially coastal environment. Besides, thousands of cubic meters of waste water is discharged every day from residential quarters. All of these have made the Hai Ninh and Nhat Le beach more and more polluted [1]. For these reasons, the water quality monitoring is necessary for effective and available management to protect the ecosystems here and for sustainable development.

Since 2013, monitoring coastal sea water quality programs in Quang Binh province are conducted regularly. The data from 2013 to 2017 is quite adequate, continuous and timely to have an overview of the situation and changes in coastal sea water quality[2]. The objective of this research is accessing the status and changes of coastal sea water quality in Hai Ninh and Nhat Le beach in Quang Binh province from 2013 to 2017.

## 2. Materials and method

### 2.1. Analytical sampling method

The water samples were collected at surface and bottom layers, using 5 L plastic vertical water sampler at selected sites (Fig. 1).

- + Hai Ninh beach, Hai Ninh commune, Quang Ninh district
- + Nhat Le beach, Hai Thanh commune, Dong Hoi city.

Samples had been collected in rainy and dry seasons through 5 years from 2013-2017. In dry season, we took 2 samples on 20/5/2017 and 15/8/2017; In rain season, we took 2 samples on 1/3/2017 and 3/11/2017.

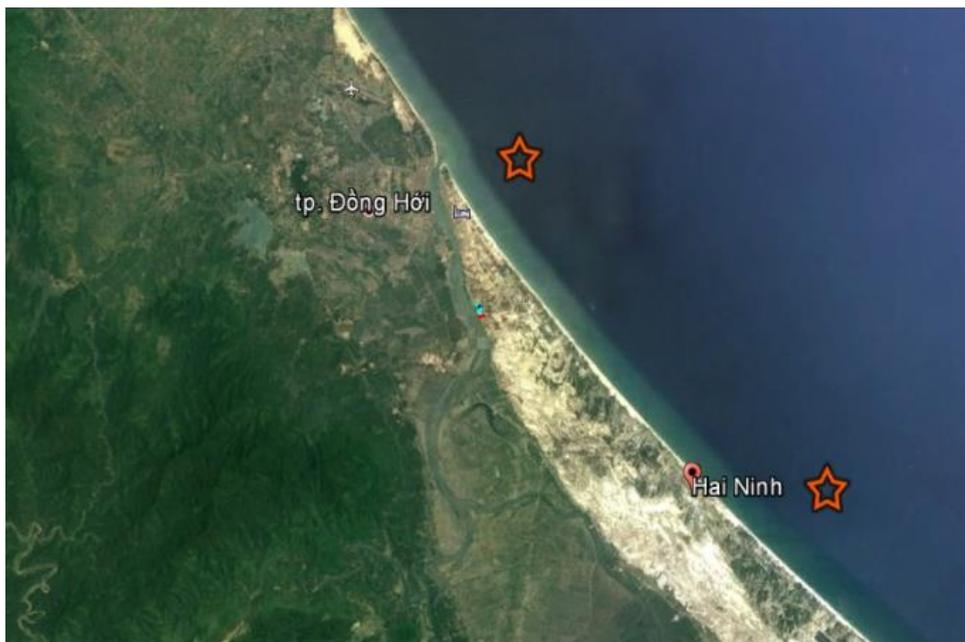


Figure1. Sampling locations[6]

Monitoring parameters: (pH, TSS, DO, BOD<sub>5</sub>), nutrient concentrations (N-NH<sub>4</sub><sup>+</sup>), heavy metals (Zn, As, Fe, Hg) and Coliform.

**Table 1. Characteristics of sampling locations[6]**

No	Location		Monitoring frequency
1	Hai Ninh beach	(106°37'58.7"E; 17°22'30.4"N)	4 times/year
2	Nhat Le beach	(106°39'55"E; 17°29'14.9"N)	

## 2.2. Statistic and comparison method

We use Microsoft Excel software, were applied to compare and estimate the trend of changes. Vietnam National Technical Regulation on Coastal Water Quality (QCVN 10 : 2015/BTNMT)[7] were used as references for accessing the environmental quality.

## 3. Results

We were collected the environmental Monitoring Data of Coastal Areas from 2013 to 2017 from Quang Binh Department of Natural Resources and Environment.

We were accessed the status and changes of coastal sea water quality in Hai Ninh and Nhat Le beach in Quang Binh province from 2013 to 2017.

## 4. Results and discussion

### 4.1. Status of Water Quality

#### 4.1.1. Water quality in dry season in 2017

**Table 2. Values of some basic, nutrient parameters, heavy metals and coliform in dry season[6]**

Areas		DO (mg/l)	BOD <sub>5</sub> (mg/l)	TSS (mg/l)	N-NH <sub>4</sub> <sup>+</sup> (mg/l)	Fe (mg/l)	Zn (mg/l)	As (mg/l)	Coliform (MPN /100ml)
Nhat Le beach	5/2017	6.5	3.8	11	0.15	0.03	< 1.84x10 <sup>3</sup>	< 1.84x10 <sup>3</sup>	35
	8/2017	6.53	4.5	5	0.38	0.07	< 1.84x10 <sup>3</sup>	< 1.84x10 <sup>3</sup>	95
Hai Ninh beach	5/2017	7.08	6.2	9	0.18	0.06	< 1.84x10 <sup>3</sup>	< 1.84x10 <sup>3</sup>	39
	8/2017	6.95	5.1	5	0.23	0.11	< 1.84x10 <sup>3</sup>	< 1.84x10 <sup>3</sup>	120
Standard		≥4	-	50	0.5	≤ 0.5	≤ 1.0	≤ 0.04	≤ 1000

For the basic and nutrient parameters, the data in dry seasons showed that most of values of these parameters were is lower than the standard (Table.2). For heavy metals parameters and coliform parameter, the data from Table.3 and Table.4 shows that heavy metals content were very low, except Fe. The metals such as Zn, As had the values much lower. However, compared to standard, Fe content were not higher.

#### 4.1.2. Water quality in rain season in 2017

**Table 3. Values of some basic, nutrient parameters, heavy metals and coliform in rain season[6]**

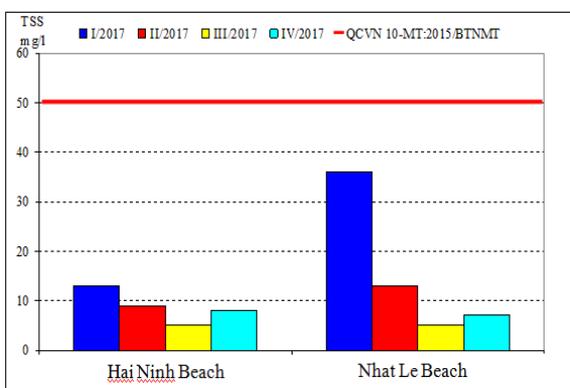
Areas		DO (mg/l)	BOD <sub>5</sub> (mg/l)	TSS (mg/l)	N-NH <sub>4</sub> <sup>+</sup> (mg/l)	Fe (mg/l)	Zn (mg/l)	As (mg/l)	Coliform (MPN /100ml)
Nhat Le beach	3/2017	6.5	3.4	38	0.24	< 0.01	< 1.84x10 <sup>3</sup>	36	36
	11/2017	6.18	4.3	6	0.12	< 0.01	< 1.84x10 <sup>3</sup>	120	120
Hai Ninh beach	3/2017	7.56	7.1	13	0.15	0.03	< 1.84x10 <sup>3</sup>	40	40
	11/2017	6.34	4.6	8	0.21	< 0.01	< 1.84x10 <sup>3</sup>	95	95
Standard		≥4	-	50	0.5	≤ 0.5	≤ 1.0	≤ 0.04	≤ 1000

For the basic and nutrient parameters, heavy metals parameters the data in rain seasons showed that all of values of these parameters were in the controlled level (Table 3). The TSS (total suspended solid) content were is higher than dry season. The basic, nutrient parameters and heavy metals parameters were in same status as dry seasons

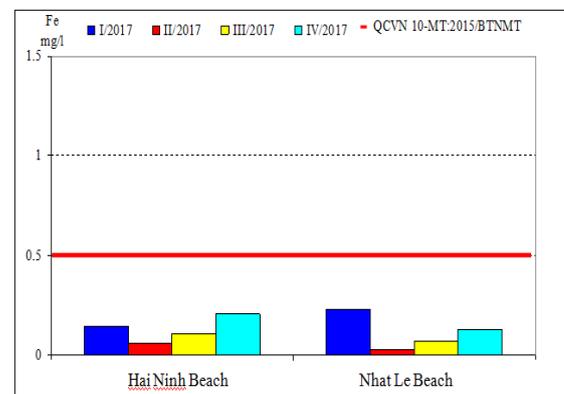
Summary, in 2017, generally, the sea water quality in Hai Ninh and Nhat Le Beach in dry and rain seasons was pretty good; all of the values of parameters were much lower than the standard.

#### 4.1.3. The changes of water quality in Hai Ninh and Nhat Le Beach in 2017

The values of the monitoring parameters vary between the observation periods in the year. TSS content fluctuated in the range of 5 - 36mg/l, the highest value in Nhat Le beach in the first survey, TSS content tend to be higher in the first survey, lower in the third survey.

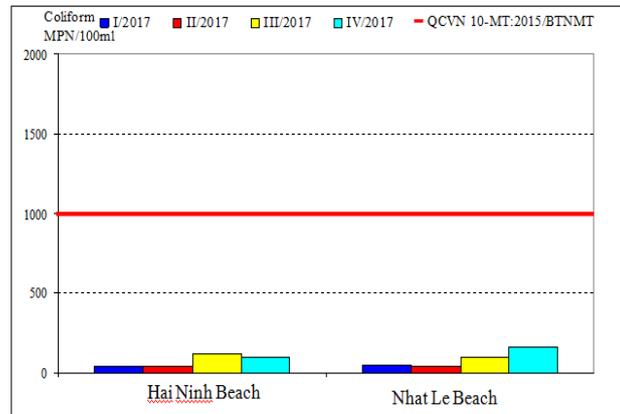


**Figure2. The changes of TSS content in 2017[6]**



**Figure 3. The changes of Fe content in 2017[6]**

Fe content ranged from 0.03 to 0.23mg/l, the highest and lowest value in Nhat Le beach in the first and second survey. Heavy metals such as Cd, Hg, As were relatively stable.



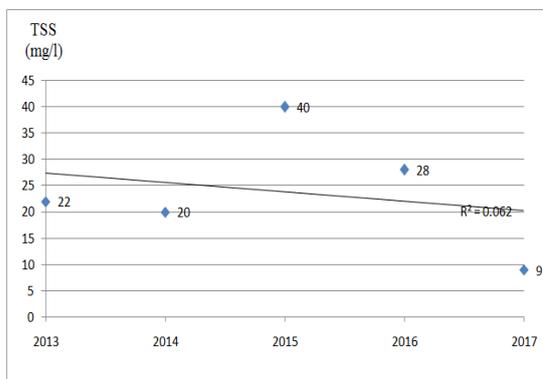
**Figure 4. The changes of Coliform content[6]**

Coliform densities ranged from 40 -160MPN/100ml. Coliform densities in Nhat Le beach increased by 4 observation periods in the year. While coliform density in Hai Ninh beach changed unevenly.

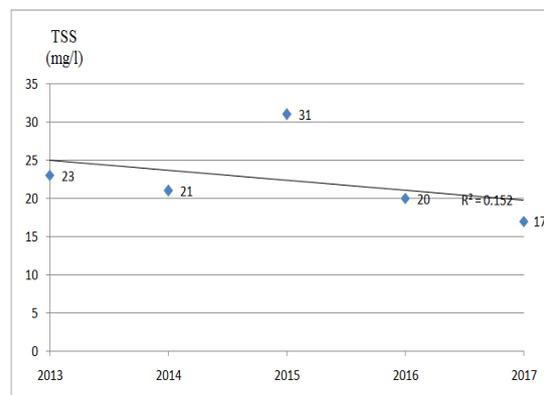
**4.2. The changes of water quality in Hai Ninh and Nhat Le Beach from 2013 to 2017**

**4.2.1. TSS**

The average content of TSS in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. However, in Nhat Le beach, The difference in TSS concentrations between the years was less. TSS concentration was highest in Hai Ninh beach in 2015 (40mg/l). In period from 2013-2017, all of the values of TSS were much lower than the standard. The comparisons are shown in Fig 5 and Fig 6.



**Figure 5. The changes of TSS content in Hai Ninh beach from 2013 to 2017[2,3,4,5,6]**

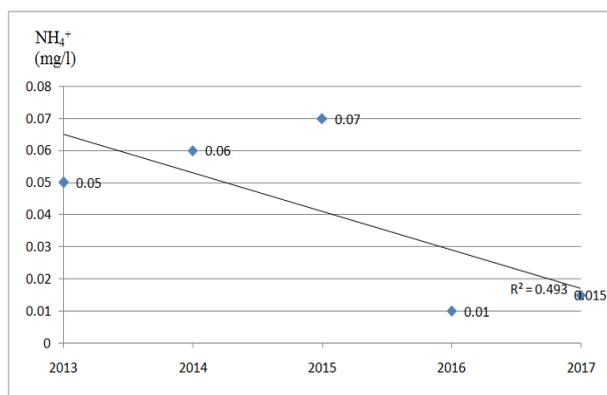


**Figure 6. The changes of TSS content in Nhat Le beach from 2013-2017[2,3,4,5,6]**

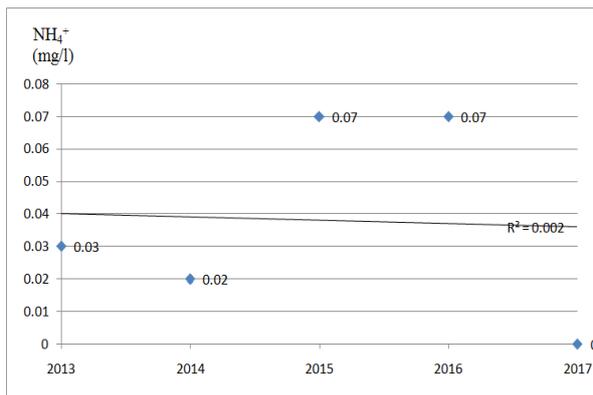
#### 4.2.2. $\text{NH}_4^+$

The average content of  $\text{NH}_4^+$  in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. In period from 2013-2017, all of the values of  $\text{NH}_4^+$  were much lower than the standard. The changes of  $\text{NH}_4^+$  content are shown in Fig 7 and Fig 8.

In Hai Ninh beach, the  $\text{NH}_4^+$  content were almost the same from 2013-2015 (ranged from 0.05 to 0.07mg/l). However, in 2016 and 2017, the  $\text{NH}_4^+$  content were sharply decrease (down to 0.01mg/l).



**Figure 7. The changes of  $\text{NH}_4^+$  content in Hai Ninh beach from 2013 to 2017[2,3,4,5,6]**



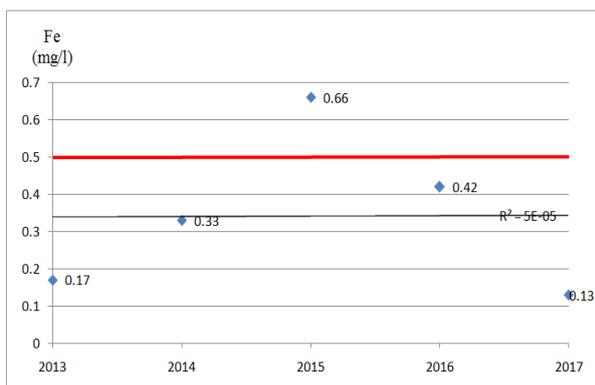
**Figure 8. The changes of  $\text{NH}_4^+$  content in Nhat Le beach from 2013-2017[2,3,4,5,6]**

In Nhat Le beach, the  $\text{NH}_4^+$  content has been changed significantly between years. The  $\text{NH}_4^+$  content was highest in 2015 and 2016 (0.07mg/l). In 2017, value of  $\text{NH}_4^+$  undered limit of detection.

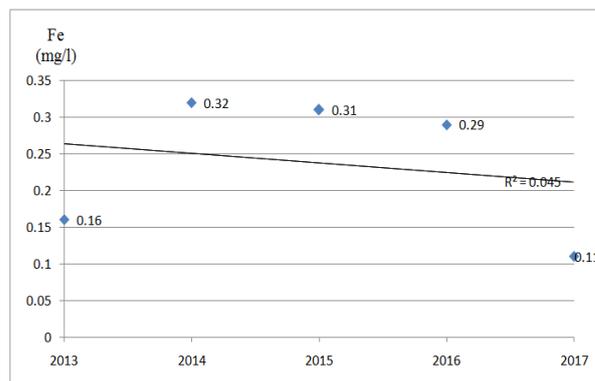
#### 4.2.3. Fe

The average content of Fe in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. In period from 2013-2017, almost of the values of Fe were much lower than the standard except Fe content in Hai Ninh beach in 2016.

In Hai Ninh beach, the Fe content has been increased steadily from 2013-2015. After that, the Fe content has been decreased steadily from 2015-2017. In 2015, Fe content was 1.3 times higher than standard. However, compared to other sea areas in Vietnam, this Fe content is not higher (even much lower than some)[8]. It might be explained that, the Iron from natural sources processes, which is major compared to the human activities sources.



**Figure 9. The changes of Fe content in Hai Ninh beach from 2013 to 2017[2,3,4,5,6]**



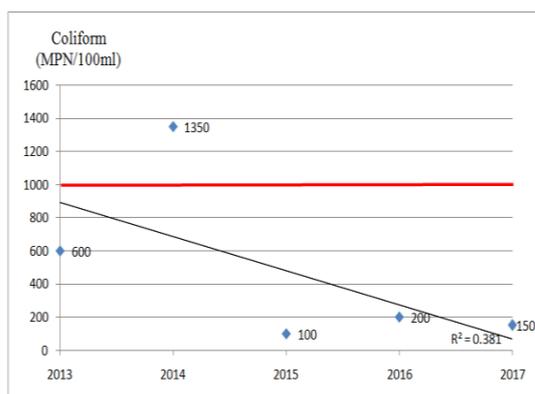
**Figure 10. The changes of Fe content in Nhat Le beach from 2013-2017[2,3,4,5,6]**

In Nhat Le beach, the Fe content has been decreased steadily from 2014-2017. The Fe content was highest in 2014 (0.32mg/l). The Fe content was lowest in 2017 (0.11mg/l).

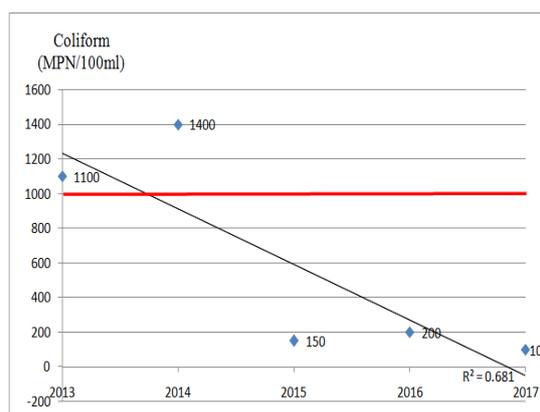
#### 4.2.4. Coliform

The average content of coliform in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. In period from 2013-2017, almost of the values of Coliform were much lower than the standard. The changes of Coliform content are shown in Fig 11 and Fig 12.

In Hai Ninh beach, the Coliform content has been decreased from 2014-2017 (ranged from 1350 to 150 MPN/100ml). In 2014, the Coliform content was 1.35 times higher than standard.



**Figure 11. The changes of Coliform content in Hai Ninh beach from 2013 to 2017 [2,3,4,5,6]**



**Figure 12. The changes of Coliform content in Nhat Le beach from 2013-2017[2,3,4,5,6]**

In Nhat Le beach, the Coliform content has been decreased from 2014-2017 (ranged from 1400 to 100 MPN/100ml). In 2013 and 2014, the Coliform content were higher than standard.

## 5. Conclusion

Because seawater quality in Hai Ninh and Nhat Le Beach affects ecosystems and life of local people, the riverine water quality should be also monitored thoroughly.

In 2017, generally, the sea water quality in Hai Ninh and Nhat Le Beach in dry and rain seasons was pretty good; all of the values of parameters were much lower than the standard. The values of the monitoring parameters vary between the observation periods in the year. TSS content tend to be higher in the first survey, lower in the third survey. Fe content ranged from 0.03 to 0.23 mg/l. Heavy metals such as Cd, Hg, As were relatively stable. Coliform densities in Nhat Le beach increased by 4 observation periods in the year. While coliform density in Hai Ninh beach changed unevenly.

The average content of TSS,  $\text{NH}_4^+$ , Fe and Coliform in Nhat Le and Hai Ninh beach from 2013 to 2017 tend to be decrease. Generally, all of the values of parameters were much lower than the standard. However, in Hai Ninh beach, in 2015, Fe content was 1.3 times higher than standard. In Nhat Le beach, in 2013 and 2014, the Coliform content were higher than standard.

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# **BUILDING SCALE FACTORS IN THE BUSINESS ENVIRONMENT AFFECT ASSET INVESTMENT OF SON LA'S ENTERPRISES**

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## **Abstract**

*Asset investment is a period which decides business results of enterprises. In addition, the business environment is also important for enterprises. In order to accurately determine the impact of factors in the business environment on the assets investment, especially the qualitative factors, the development of a measure of factors with measurement indicators is really needed. By combining qualitative and quantitative methods with 107 questionnaires in Son La, Vietnam, the author develops a scale that measures three groups of qualitative factors in the business environment that influence the asset investment of Enterprises, include: infrastructure and technology factors, local incentive factors and socio-cultural factors of the locality.*

**Keywords:** *Enterprise, factor, investment decision, scale.*

## **1. Introduction**

In recent years, the average production and business efficiency of enterprises in Son La province has been decreasing, the average return on asset has decreased from 1.31% in 2014 to 0.66% in 2017 and the average return on equity decreased from 3.42% in 2014 to 2.01% in 2017. This situation leads to concerns about rationalization and effectiveness of asset investment in enterprises. Therefore, clarifying the factors affecting asset investment of these enterprises is necessary in the current conditions.

Previous studies have confirmed that there are many factors affecting the overall investment of businesses (Gill et al., 2012; Erkaningrum, 2013; Piotr Bialowolski and Dorota Weziak-Bialowolska, 2014; Le Bao Lam and Le Van Huong, 2010). However, the research results had not uniformity, or yet to be shown dimension and tendency the impact of these factors. Meanwhile, in-depth research on the factors affecting the asset investment of enterprises is still very limited, especially the research on testing the relationship between qualitative factors in the business environment with asset investment of enterprises. Therefore, the scale of qualitative factors in the business environment influences asset investment of enterprises in

Vietnam in general and enterprises in Son La province - one of the Northwest provinces receives many preferential policies development of the state in particular - has not yet been built. This is a blank that needs further study.

In addition, the business environment has important implications for businesses, it will create favorable conditions for enterprises operating easier if businesses know how to utilize the advantages due to this environment brings, but also may be the constraints impede development if businesses do not adapt to this environment. To determine exactly the impact of factors in the business environment on asset investment of enterprises, especially qualitative factors, the construction of the scale of factors with measurement indicators is really needed. This is considered a prerequisite stage but it is decisive in the process of determining the impact of qualitative factors in the business environment to invest assets of enterprises.

Based on that theory and practice, the author builds scales for qualitative factors in the business environment affecting the asset investment of enterprises in Son La province.

## **2. Database and research methods**

The study was conducted with a combination of quantitative and qualitative research methods. In particular, qualitative research was conducted with in-depth interview techniques and quantitative research conducted with Cronbach's Alpha reliability assessment techniques and explore factor analysis (EFA). Specifically:

### ***2.1. In-depth interview techniques***

The in-depth interview technique was carried out in the process of finalizing the preliminary scale, after defining a temporary scale through desk research. Conducting in-depth interviews with 10 enterprises with the main purpose is to modify the scale of style, to avoid the situation that the interviewees understand incorrectly, inadequately, misunderstand the question or the questions are not consistent with the actual situation of enterprises in Son La province. On that basis, the questionnaire was completed and conducted on a large scale.

The in-depth interview process was conducted with the director or deputy director of the enterprise. Due to time constraints and depending on the coordination of interviewees, the interview process is conducted in two forms: direct and telephone exchanges. Interview time lasts from 30 minutes to 1 hour. The interview process was conducted by the author and recorded.

### ***2.2. Cronbach's Alpha reliability analysis***

Primary data collected through survey questionnaires were analyzed with techniques to assess the reliability of Cronbach's Alpha by SPSS software 20. Analysis of Cronbach's Alpha to check Cronbach's Alpha coefficients and variables

with correlation coefficient with the total variable is small will be deleted. According to Joseph F. Hair et al. (1998), the Cronbach Alpha coefficient from 0.6 and above is a qualified measurement scale, above 0.8 to nearly 1, which shows a very good measurement scale. At the same time, indicators to measure the same research concept must also be closely correlated. If the indicator has a total correlation coefficient of greater than 0.3, it is considered satisfactory (in case it is less than 0.3, it must be removed from the scale).

### ***2.3. Exploratory factor analysis - EFA***

The process of exploratory factor analysis - EFA is also implemented by SPSS software 20. According to Kim and Mueller (1978) and Kaiser (1974), the assessment of Cronbach Alpha reliability was done before analyzing the exploratory factor to eliminate garbage variables because garbage variables could create fake factors when analyzing exploratory factors. The tool used to analyze exploratory factors includes factor loading and extract variance. Specifically:

In theory, the KMO coefficient (Kaiser-Meyer-Olkin) is used to consider the appropriateness of factor analysis. KMO values must be at least 0.5 ( $0.5 \leq \text{KMO} \leq 1$ ) as a sufficient condition for factor analysis to be appropriate.

To review the correlation between the indicators of factors that can be used to test the Bartlett (Bartlett's test of sphericity). If the test results show no statistical significance: sig Bartlett's Test  $\geq 0.05$ , it means that the indicators do not correlate with each other, so factor analysis for the variables under consideration should not be applied. The case of Bartlett test results is statistically significant: sig Bartlett's Test  $< 0.05$ , means that the indicators are correlated with each other in the factor.

Eigenvalue value is a criterion for determining the number of factors in EFA analysis. With this criterion, only those elements with Eigenvalue  $\geq 1$  are retained in the analysis model. To test the appropriateness of the model, use the indicator Total variance Explained. If the total variance explained  $\geq 50\%$  indicates that the EFA model is appropriate. If the variation is 100%, then this value represents how much of the extracted factor is extracted and how much is lost in the indicator.

In addition, the relationship shows the correlation between the indicators with the factors expressed by Factor Loading. The higher the coefficient, the greater the correlation between the indicator and the larger factor and vice versa.

### **3. Range of research**

In-depth interview techniques were carried out with 10 enterprises in Son La city by convenient sampling method. Among them, 10 enterprises belong to different types of enterprises, have forms of ownership and operate in different business sectors.

According to Hair et al. (2006), the minimum sample size to use exploratory factor analysis should be 100 and the ratio of observations to the number of factors is 5: 1, each factor should be at least 5 observations. The survey was developed with 13 elements corresponding to 3 groups of factors, whereby the minimum sample size was determined to be:  $13 \times 5 = 65$  observations.

The study was carried out from April to June 2018 with 300 business managers (Director or Deputy Director of Enterprises) in Son La province according to the method of random sampling non probability. The results obtained were 107 questionnaires which were larger than the minimum sample size (65 observations). Thus, the sample size is suitable.

#### 4. Research results

##### 4.1. Results of desk research and in-depth interviews

When studying at the table, the author has formed a preliminary survey to serve the in-depth interview process. At the end of the in-depth interview process, the survey questionnaire was completed with specific questions, consistent with Vietnamese semantics and the reality of enterprises in Son La province. Specifically:

##### 4.1.1. Infrastructure and technology factor

This group of factors includes a scale reflecting both the factors of infrastructure and technology developed from the questionnaire in the study of Galan et al. (2007), Tatoglu et al (1998), Loree et al (1995) have adjusted and supplemented to match the characteristics of enterprises in Son La province. The scale details are presented in Table 1.

**Table 1: Scale of infrastructure and technology factor**

Sign	Description of the scale	Note
HT1	The development of infrastructure services ( <i>transport, electricity, water and telecommunications</i> ) meet the needs of enterprises' assets investment	Galan et al. (2007), Tatoglu et al (1998), Loree et al. (1995)
HT2	Ability to access modern technology and machinery/equipment to meet the needs of enterprises' assets investment	
HT3	Ability to access production and business premises is suitable for enterprises' assets investment demand	

#### 4.1.2. Factors of local preferential policies

Inheriting the scale in the study of Ulgado (1996), Tatoglu (1998), Yongqiang Gao (2011), but omitting some factors to ensure compliance with the situation in Vietnam and the Northwest sub-region. For example, the author does not use the "state support for profit sharing policy" scale to apply to research. Because in Vietnam, the state only intervenes and regulates the dividend distribution policy of state enterprises. Meanwhile, according to the provisions of the Law on Enterprises in 2014, the number of state-owned enterprises in these localities has become less and less. The dividend distribution policy of other types of businesses is not affected, so using this scale will not be feasible.

In addition, based on the status of investment promotion in the locality, especially preferential policies on land and tax for newly invested enterprises in the locality. The author adds two new scales: state/local support for access to production and business premises and taxes.

**Table 2: Scale of local preferential policies factor**

Sign	Description of the scale	Note
CS1	The level of state / local support / incentives for access to production and business premises	Decision No. 08/2013 / QD-UBND of the Provincial People's Committee was issued on June 3, 2013
CS2	The level of state / local support / preferential tax ( <i>CIT, excise tax, agricultural land use tax, ...</i> )	
CS3	The level of state / local support / incentives for on-site labor training	Ulgado (1996), Tatoglu (1998), Yongqiang Gao (2011)
CS4	The level of support / incentives of the state / locality on the selling price of output products, the purchase price of inputs	
CS5	Strict / strict level of state / local regulations on enterprises' asset investment activities	
CS6	The compatibility between the socio-economic development objectives of the state / the locality and the orientation of asset investment in enterprises	

#### 4.1.3. Factor of local cultural and social

This group of factors represents issues surrounding people's attitudes and levels of social and cultural development in localities, which are inherited from the scales used in previous research by Hofstede (1980), Galan et al. (2007) omitted some factors to ensure compliance with the local situation.

In addition, in view of economics, if the living standard is lower, the demand of people will be more limited, then enterprises may have to narrow the scale of production and business, which is synonymous with limiting asset investment and vice versa. Therefore, the author adds a scale related to the living standard / income of the local people. Besides, a characteristic of Son La province is that ethnic minorities live mainly on Thai, H'mong and Dao ethnic groups. Each ethnic group has different customs, like the H'mong people who live in high mountains with small and low houses while the Thai people live in tall and wide stilt houses. Therefore, they do not have much demand for construction, especially large civil works.

In addition, ethnic groups such as Thai and H'mong have a custom of living in villages with high community. With the distribution of such residential areas, it also affects the construction of product distribution systems of enterprises. In addition, the practice of sedentarization and settlement of ethnic minorities in high hills with small production methods, self-sufficiency by agriculture and forestry is essential. So consumer demand for luxury goods and services is very limited. Accordingly, local consumer goods are still essential goods. This situation also affects the orientation of providing products of enterprises, especially the determination of strategic products of enterprises in this market. On that basis, the study adds a scale of customs and practices of local people. The scale details are presented in Table 3.

**Table 3: Scale of local cultural and social factor**

<b>Sign</b>	<b>Description of the scale</b>	<b>Note</b>
VH1	The level of local socio-economic development	Galan et al (2007), Hofstede (1980)
VH2	Attitude of local people to the expansion of investment assets of enterprises	
VH3	The customs and practices of local people	Annual report on socio-economic situation of the province
VH4	Living standard / income of local people	

#### ***4.2. Results of Cronbach's Alpha reliability assessment***

The research results were carried out with 107 enterprises in Son La province, showing that basically, the measures are Cronbach's Alpha coefficient > 0.7; KMO coefficients, Bartlett testing, Eigenvalue values and total variance were all met (above 0.3). The results of scale reliability analysis are presented in Table 4.

**Table 4: Results of scale reliability analysis**

Sign	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
<i>Infrastructure and technology factor (Cronbach's Alpha = 0.802)</i>				
HT1	7.90	2.772	.607	.772
HT2	8.10	2.886	.681	.703
HT3	8.09	2.482	.665	.713
<i>Factors of local preferential policies (Cronbach's Alpha = 0.797)</i>				
CS1	18.51	10.045	.625	.748
CS2	18.28	9.713	.639	.743
CS3	18.88	9.428	.655	.739
CS4	18.74	10.591	.535	.769
CS5	18.87	11.341	.492	.779
CS6	18.78	11.138	.375	.807
<i>Factor of local cultural and social (Cronbach's Alpha = 0.803)</i>				
VH1	18.51	10.045	.625	.748
VH2	18.28	9.713	.639	.743
VH3	18.88	9.428	.655	.739
VH4	18.74	10.591	.535	.769

**4.3. Result of exploratory factor analysis (EFA)**

The results of the KMO coefficient and Barlett test are presented in Table 5, showing that the KMO coefficient = 0.856 > 0.5 and the critical value of the Barlett test is 0.000 which is satisfactory, it also means the indicators in the model is correlated with each other. Thus, the sample size is suitable and large enough to implement factor analysis techniques.

**Table 5: KMO coefficient and Barlett test results**

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.856
Approx. Chi-Square	579.649
Bartlett's Test of Sphericitydf	78
Sig.	.000

The results presented in Table 6 show that the indicators ensure the team converges. The total number of Rotation sums of squared loadings of 63.405% > 50% means that the use of factors representing 13 indicators can explain up to 63.405% of explanations of all indicators. Initial Eigenvalues = 1,197 in the third factor and starting less than 1 from the 4th factor shows that the indicators in the model converge to 3 factors.

**Table 6: Total variance explained**

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.458	41.982	41.982	5.458	41.982	41.982	2.912	22.403	22.403
2	1.588	12.215	54.197	1.588	12.215	54.197	2.687	20.666	43.069
3	1.197	9.208	63.405	1.197	9.208	63.405	2.644	20.336	63.405
4	.760	5.845	69.250						
5	.709	5.456	74.706						
6	.591	4.545	79.251						
7	.568	4.371	83.622						
8	.472	3.633	87.254						
9	.444	3.417	90.671						
10	.356	2.740	93.411						
11	.330	2.542	95.953						
12	.284	2.182	98.135						
13	.243	1.865	100.000						

Extraction Method: Principal Component Analysis.

With 3 scales and 13 indicators obtained after Cronbach's Alpha verification, EFA factor analysis is performed. In the process of analyzing the exploratory factor, the author chooses factor loading factor of 0.5, so the indicators with load factor less than 0.5 will be disqualified, so they are not displayed on the results table. Using Varimax Produce rotation method to rotate the original elements to minimize the number of indicators with large coefficients in the same factor. The Varimax rotating factor matrix shown in Table 7 shows that the load factor of CS5 and CS6 indicators is less than 0.5, so the remaining indicators are above 0.5.

**Table 7: Factor rotation matrix**

Rotated Component Matrix<sup>a</sup>

	Component		
	1	2	3
VH3	.829		
VH4	.828		
VH2	.668		
VH1	.572		
CS6			
HT2		.881	
HT3		.789	
HT1		.676	
CS5			
CS2			.822
CS3			.782
CS4			.763
CS1			.635

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

## 5. Conclusion

Thus, from 3 groups of factors with 13 initial indicators, after analyzing the factor of discovery, EFA has formed 3 groups of factors with 11 indicators to explain 63.405% of enterprises' asset investment, and 36,595 % investment of enterprises' assets explained by other factors. The groups of factors include: (1) Infrastructure and technology, (2) local preferential policies and (3) local socio-culture. They are all groups of qualitative factors in the business environment that can affect the asset investment of enterprises in Son La province. Details of the scale and indicators of completion are shown in Table 8. Research results are really necessary to serve the

process of finding qualitative factors affecting the asset investment of enterprises by quantitative research method.

**Table 8: Scale of factors in the business environment affecting the asset investment of enterprises in Son La province**

No	Sign	Scale / indicator
<i>I</i>	<i>Infrastructure and technology factor</i>	
1	HT1	The development of infrastructure services ( <i>transport, electricity, water and telecommunications</i> ) meet the needs of enterprises' assets investment
2	HT2	Ability to access modern technology and machinery/equipment to meet the needs of enterprises' assets investment
3	HT3	Ability to access production and business premises is suitable for enterprises' assets investment demand
<i>II</i>	<i>Factors of local preferential policies</i>	
1	CS1	The level of state / local support / incentives for access to production and business premises
2	CS2	The level of state / local support / preferential tax ( <i>CIT, excise tax, agricultural land use tax, ...</i> )
3	CS3	The level of state / local support / incentives for on-site labor training
4	CS4	The level of support / incentives of the state / locality on the selling price of output products, the purchase price of inputs
<i>III</i>	<i>Factor of local cultural and social</i>	
1	VH1	The level of local socio-economic development
2	VH2	Attitude of local people to the expansion of investment assets of enterprises
3	VH3	The customs and practices of local people
4	VH4	Living standard / income of local people

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# GROUND CLEARANCE: FACTORS INFLUENCING AFFECTED LAND USERS AND SOLUTIONS IN VIETNAM

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## **Abstract**

*This research analyzes factors which influence land users whose land is acquired for public purposes, therefore, proposes a number of solutions to improve compulsory land acquisition (CLA) in Vietnam. The supposed factors include legal basis on CLA, the attitude of affected land users towards projects, the knowledge level of land users in law, Disagreement between the Government and the land users (price and other factors). The solutions include both longterm and shorterms ones to better land acquisition progress.*

**Key words:** *Compulsory land acquisition, ground clearance, compensation*

## **1. Introduction**

Vietnam is growing rapidly, to catch up with this growing speed, it is essential that roads, schools and other facilities should be developed. However, when broadening roads or requiring land for other developing purposes, in many cases, the government has lots of difficulties in ground clearance. People whose land is located in clearance areas react and protest drastically. These leads to class action petitions and complaints, directly creates bad public opinion. Moreover, it is the main reason for slowing down the project progress. This report research what is the reason for this conflict and what is the suitable method to implement ground clearance, how to balance public needs and private interests.

## **2. Method**

Based on the combination of available materials and interviews of land users, this study researches and evaluates factors influencing the reacts of people to the government's decision of ground clearance together with providing examples.

Thanks to quick interviews with some affected land users, the author proposes some factors to research, one of them is the gap in compensation and market price. To have information, I contacted Tuan 123 joint stock company - the leading one in transactions of residential land in Vietnam. I ask for accessing to their statistic of houses sold on Dai La street (Hai Ba Trung district), based on price of 100 houses

sold from 2014 until now to get the average to compare to the government price and compensation price.

Therefore, the author proposes a number of solutions to better clearance progress.

### **3. Results**

#### ***3.1. Factors influencing reacts of affected land users***

##### **a. Unclear Legal basis on Compulsory Land Acquisition**

According to Article 53, 54 of the Constitution 2013 and Article 4 Land Law 2013, Land belongs to the entire people, is represented by the State and unified to manage the land. Section 1 of Chapter 6 Land Law 2013 indicates that the State may recover land for national defense or security purpose, for socio-economic development in the national or public interests and Section 2 regulates principals for compensation. These principals are offering properties of the same use value rights as the recovered land, in case there are no available land, the land users are offered compensation in money. However, the definition of “the same use value” is not clarified which causes the conflicts between the land users and the State. A typical example is the project of ring road 1, Hoang Cau – Voi Phuc. Information from interviews of 139 families on De La Thanh street, whose land is acquired for ground clearance. 139 families deny to move to the new resettlement areas. According to the decision of Hanoi People’s Committee, people in Ba Dinh district are offered resettlement land in Xuan La (Tay Ho district), Nghia Do, Nam Trung Yen (Dong Da), people in Dong Da street are offered land in Co Nhue 2 (Bac Tu Liem district), Nam Trung Yen, Trung Hoa (Cau Giay district). It is clear that Ba Dinh and Dong Da districts are located in the more central areas than Cau Giay and Bac Tu Liem districts. Their houses now locate at very high value positions which are called “street houses” which can be rent with high price or they can do business by themselves. In the new places, they are offered apartments in high buildings or less central areas. This change leads them to get familiar to the new life, many families have to change their careers. For those people, this change is not “the same value use rights”.

Another example is Ho Chi Minh road project. Mr Nguyen Thanh Thien, Dong Tien, Dong Vai, Xuan Mai, Chuong My, Ha Noi said the land users agree to move to the resettlement area in Ao Khoai, next to road 21. However, the resettlement area was changed to Dong Vai, Cay Va without full facilities for living. Land users did not agree to this change.

Article 74 Land Law 2013 shows that the compensation is based on the principal of allocating new land with the same land use purpose with the recovered

land. However the same land use purpose in different positions are different in value use rights. Is essential that Vietnam law clarify the definition of “land with the same land use purpose”? Should the State add the definition of “the same value use rights” as a principal in compensation?

Article 67 Land Law 2013 indicates that the competent authorities before officially issuing a decision on land recovery have to notify the land users at least 90 days prior to the recovery of agricultural land and 180 days prior to the recovery of non-agricultural land. Is the period of 90 days and 180 days long enough for land users to fully understand the projects? Do the land users have enough time to clarify all the problems and have answers to all questions? To have agreement from land users, it is essential that they have full understanding of the meanings of the projects and the competent state agencies should spend more time explaining and convincing land users.

**b. The attitude of affected land users towards projects: Land users do not agree with the changes in project**

In some cases, there are changes in the project compared to the project announced, these changes lead to benefits of land users are affected. For example, in Voi Phuc – Hoang Cau project, the land users believe that the recovered land is not in Plan 1999. The investors suppose this area is jamed land and propose this area is for parking and parks. Opposed to the investors, land users believe they live there for many years, from 1975, have lawful documents on land use rights (according to Mrs Pham Thi Nga at 369 De La Thanh). This is a question of to balance public and private interests. These land users feel surprised with the change in plan compared to plan 1999 and refuse to move. Until now, the problem of ground clearance of 139 families here is still in progress. De La Thanh street is now still full of banners protesting ground clearance.

**c. The knowledge level of land users in law: The confusion between land use rights and land ownership rights**

The Constitution 2013 indicates that land is owned by the entire people, not any individuals. However, due to the low understanding of many people, they think they hold the “red books”, they own land. This is confusing, what they own is the land use rights, not land. In many interviews with these families, they are not able to distinguish these definitions. This links to the fact that they think they “sell” land to the State, therefore, they demand a high price.

**d. Disagreement between the Government and the land users**

In a number of countries in the world, their laws admit 2 kinds of compensation: compensation for tangible and intangible benefits. Article 14.28 UK Land Compensation Act 1973 admits compensation for physical and unphysical factors.

Tangible benefits include land and properties attached to land. Intangible benefits mean benefits deprived from land recovered and land users such as mental damage, air pollution, noise pollution, etc. Land Law 2013 and other legal documents admits most tangible benefits which can be measured in money but intangible benefits. Land law 2013 mention government supports on career change, training, job seeking, however, this is “supports” that means it is not a kind of compulsory compensation. Moreover, these support activities are not implemented in a effective ways, most land users have difficulties in benefiting. In many projects, land users refuse the compensation, they demand to keep using the land because of vocational issues, especially families in street houses where they live on their shops.

### **A gap between compensation price and market price**

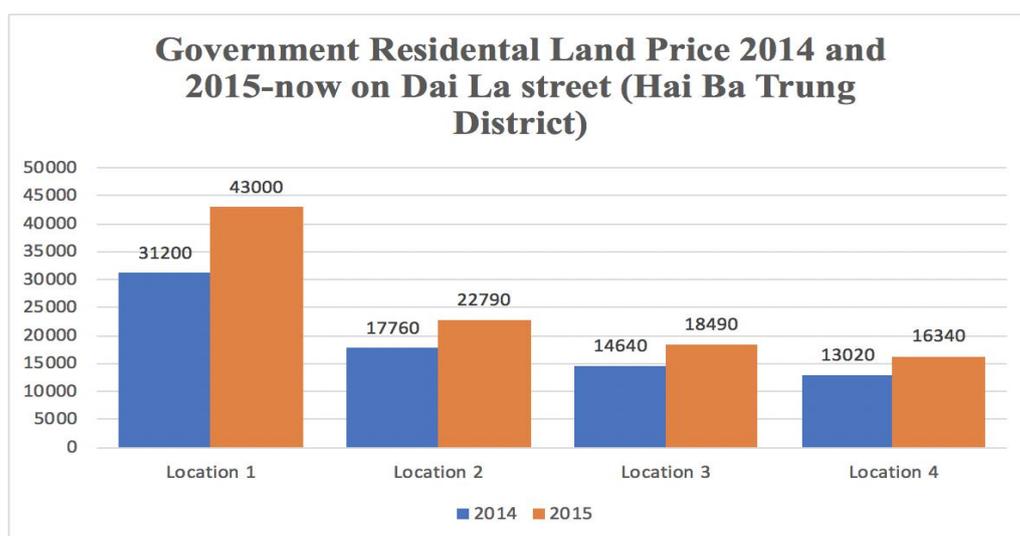
The main reason for conflicts in most projects is the gap between compensation price and market price. Land users demand market price for compensation instead of price offered by government. From 2015 until now, the State has increased the price for compensation however, it is still lower than market price. Ring road 2 project, in area of Dong Tam ward, Hai Ba Trung district is a typical example.

This graph below shows the increase in government price for residential land in Dong Tam ward.

Location 1, Location 2, Location 3, Location 4 definitions are detailed in 63/2013/QĐ-UBND and 96/2014/QĐ-UBND decisions (No change in 19/2017/QĐ-UBND decision)

**Table 1: Government Residential Land Price 2014 and 2015 – now Dai La street (Hai Ba Trung District)**

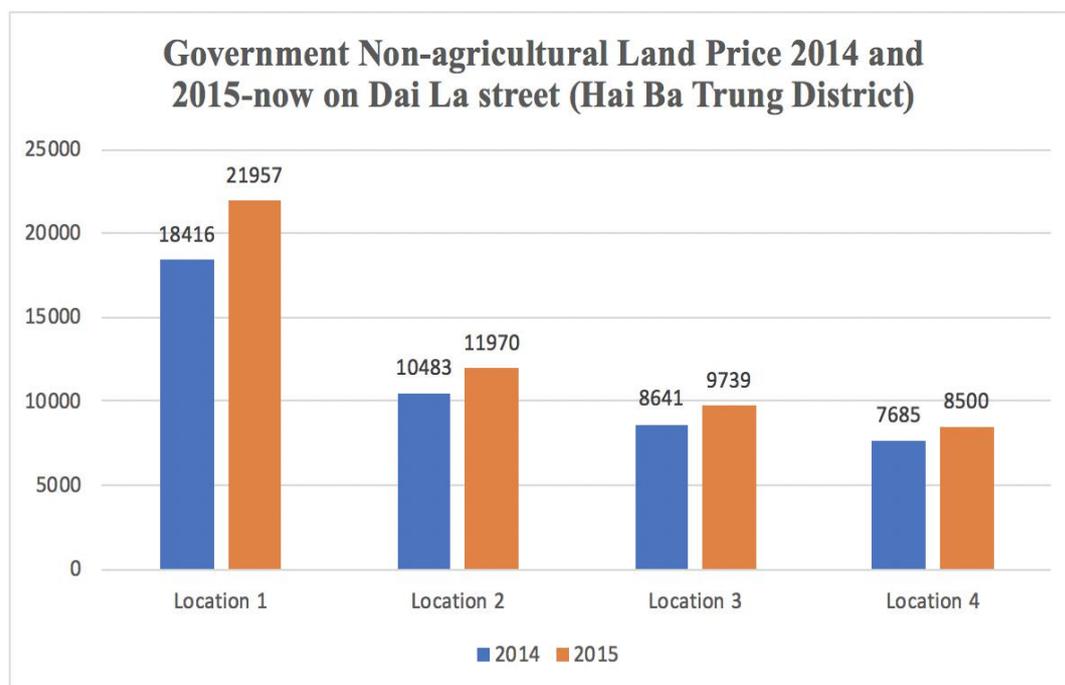
*000VNĐ/m<sup>2</sup>*



*Source: 63/2013/QĐ-UBND and 96/2014/QĐ-UBND decisions*

This graph below shows the increase in government price for non-agricultural land in Dong Tam ward:

**Table 2: Government Non-agricultural Land Price 2014 and 2015 – now Dai La street (Hai Ba Trung District)**



*Source: 63/2013/QĐ-UBND and 96/2014/QĐ-UBND decisions*

According to decision 96/2014/QĐ-UBND, land price adjustment coefficient  $k = 2,1384$  leads to the difference in government price and compensation price.

	Location 1	Location 2	Location 3	Location 4
<b>Government price</b>	43000	22790	18490	16340
<b>Compensation Price</b>	91951,20	48734,14	39539,02	34941,46

Despite the efforts of government, there is still gap between compensation price and market price. The market price is based on the statistic of Tuan 123 Joint Stock company. The market price is calculated by the average price of 100 houses sold by the company from 2014 until now.

Location	Location 1	Location 2	Location 3	Location 4
<b>Market Price</b>	232000	130000	85000	60000

*Source: Tuan 123 Joint stock company*

It is easily seen that, the land users here feel loss when compare compensation price to market price.

### **3.2. Solutions**

#### **a. Raise awareness of land users about land law**

It is indicated clearly in Constitution 2013 and Land Law 2013 that “Land belongs to the entire people with the State acting as the owner’s representative and uniformly managing land. The State shall hand over land use rights to land users”. The land users have the rights to use land, not land. Therefore, they should cooperate with the State in recovering land for public works.

A number of provinces have experience in ground clearance, for example Vinh Phuc. This province have a large number of staff come to every family to communicate with them and understand why they disagree as well as explain fully the meaning of the projects Noi Bai – Lao Cai highway project, 2012.

Almost all conflicts come from the misunderstanding, increasing communication with land users is the main solution to solve this problem.

#### **b. Remove gaps between compensation price and market price**

According to Phan Thi Thanh Huyen (2018), finance factors have the biggest influence on ground clearance progress with 27 percent. Therefore, solving this problem may bring a good result.

#### **c. Other solutions**

Besides, to simplify the order and procedures for compensation, support and resettlement when the state recovers land, providing land users more transparent information, building plans for longer periods while considering to balance public and private interests are other methods to improve ground clearance progress.

### **4. Discussion and conclusion**

By examining factors affecting reacts of land users to decisions on land recovery, this report propose some solutions for ground clearance. The most important and easiest way is to increase communication between competent agencies and the land users who are directly affected. Finance factors are the main reason in many cases, therefore an improvement in compensation which considers both tangible and intangible benefits should be effective. Ground clearance is a difficult question that needs cooperation between the State and competent agencies together with raising awareness of land users.

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# THE IMPACTS OF VIETNAM SOCIO-ECONOMIC DEVELOPMENT ON THE ENVIRONMENT

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## **Abstract**

*The current socio-economic development is the process of improving the physical and spiritual living conditions for people through the production of material wealth and the improvement of social relations as well as the improvement of cultural quality. In recent years, Vietnam showed robust growth in terms of economic development, along with the fast pace of urbanization and population increase. However, the economic growth has led to serious problems relating to the environment, such as the pollution of the air, water and soil, which hugely affected the quality of human life. Environmental Kuznets Curve (EKC) implied that a country with strong economic background shifting to industrialization or mechanization of agriculture will have positive GDP and the environmental damage level will decrease. The analysis and assessment showed that the environmental problems caused by economic activities are: air pollution in the urban area still maintained at high level; water pollution in rivers and limited fresh water supply; the soil pollution and declining water supply underneath soil are prevailing*

**Key words:** *socio-economic development, EKC, air, water, soil, air pollution, water pollution, soil pollution*

## **1. Introduction**

After impressive results in 2018, Vietnam's economy continued to be strong in 2019. The fast growth of socio-economic development nowadays led to an increasing need of natural resources, higher living quality, technology and a healthy environment. According to the General Statistics Office, in 2019, the GDP's growth reached 6.79%. Within the general growth, the industrial and construction sectors increased at 8.63%

- The highest rate amongst the sectors. The service sector and the agro-forestry-fisheries sector kept their momentum with upsurges of 6.5% and 2.68% respectively. It is expected that under the management of the Government, this year's growth target at 6.6%-6.8% is still reachable.

Besides the positive results of Vietnam's economy, the environment is also facing many challenges and pressures due to the impact of economic market in the development process. This report will tackle the influences of socio-economic development in Vietnam on the environment regarding three domains: air pollution, water pollution, and soil pollution since they are the essential natural resources of future people.

Compared to renewable resources, non-renewable resources such as metals, ores, petroleum and gas do not need much land use to exploit. However, exploiting these resources can contaminate water resources, destroy the ecological environment and create exhaustion that is no longer able to exploit for future generations. The impacts on the environment when exploiting natural resources is also reflected in the aspects of economic activities such as energy and water consumption, depleting ecological environment in rivers and seabeds. Therefore, to limit the negative effects of resources, it is suggested that Vietnam needs to provide better policies for environmental impact assessment, environmental management, for efficient and sustainable exploitation.

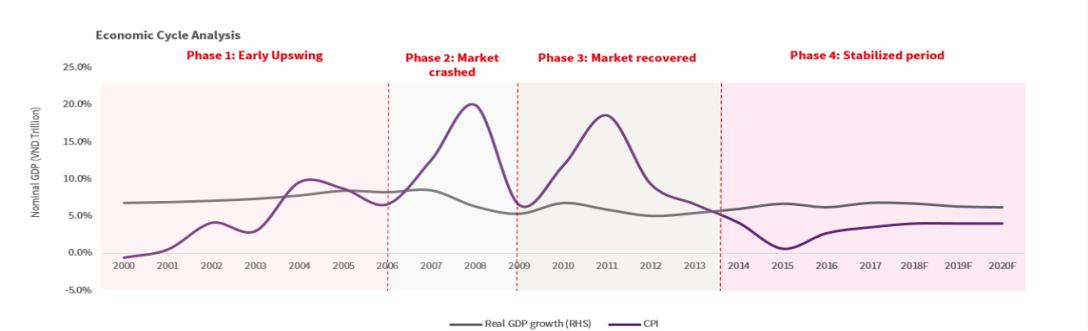
Summary of findings:

- The economy of Vietnam witnessed a massive growth in GDP and the foreign investment market has been more developing than before.
- Vietnam demographic trend to move on upward trend.
- Despite the success of economic growth in the past has produced many benefits, it also raised awareness of degradation of ecosystems and environment.
- Some environmental impacts are examined in the context of growth in economic activities, such as: air pollution, water pollution and soil pollution.

**2. Vietnam socio-economic overview**

**2.1. Vietnam Macroeconomic drivers**

**Figure 1: Economic cycle analysis**



Source: GSO Vietnam

From 2000 to present day, Vietnam's economy cycle can be divided into 4 stages as followings:

**Phase 1:** In 2000, Vietnam ratified the Bilateral Trade Agreement with the USA, marking a new age of the country's global economic integration. The expected accession of Vietnam to WTO helped to assure the positive market prospects over the period.

During this phase, Vietnam welcomed a sizeable number of FDI deals project, of that the majority of the FDI went into the real estate segment. Consequently, the excess liquidity from domestic banks and foreign funds (i.e. Indochina, Dragon, Mekong VinaCapital and so on) led to the real estate market boom, which resulted in a "bubble bust" later on.

**Phase 2:** The stock market dropped from 1,200 to below 300 points, high inflation of nearly 20% in 2008, financial crisis led to the breakdown in the banking industry from 2008 to 2010. Similarly, the real estate market experienced the "bubble" in 2007-09. GDP growth rate notably decreased in 2008 and 2009.

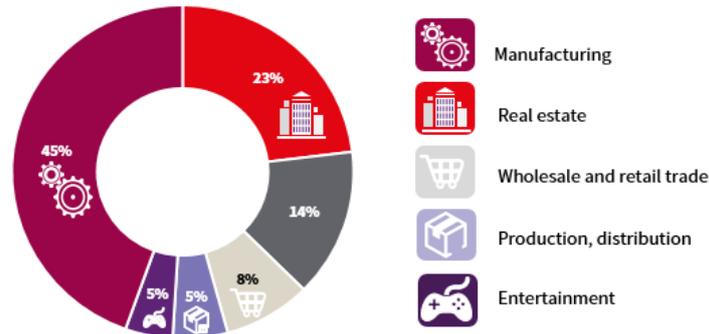
On top of it, the base rate, as well as rediscounting rate and refinancing rate, hiked sharply in 2008 and 2009.

**Phase 3:** Government loosened its fiscal and monetary policies as a means to tackle economic issues from 2009 – tax incentives in the first half of 2009 helped buoy rally. GDP recovered in 2010, and interest rates decreased significantly. However, in 2011, interest rates/inflation increased to almost the level seen in 2008. Cause of too high inflation compared to target (<7%) was due to the inevitable consequence of overextension of the money supply and credit growth in the previous stage and partly from the lack of proactive in operating monetary policy.

**Phase 4:** As of end-2015, the positive GDP growth rate of 6.68%, and this increase is expected to remain at 6.7% in 2017. Currency rate was also more stabilized in this period than in previous economic periods. Interest rates/inflation got the lowest level in a decade. Although such favourable conditions were expected no to last in the long run, Vietnam's economy would be likely to witness any abruptness in changes of inflation, currency and interest rates. In January 2016, ASEAN Economic Community (AEC) was officially formed, believed to highlight Vietnam's economy as well as other economies in the region.

Looking forward, the GDP in Vietnam is likely to remain flat by 2020 with positive growth rate. In the economic cycle life, the economic growth implies an increase in the amount of products and services through the development economic activities.

**Figure 2: Top 5 FDI attracting sectors in 2018**

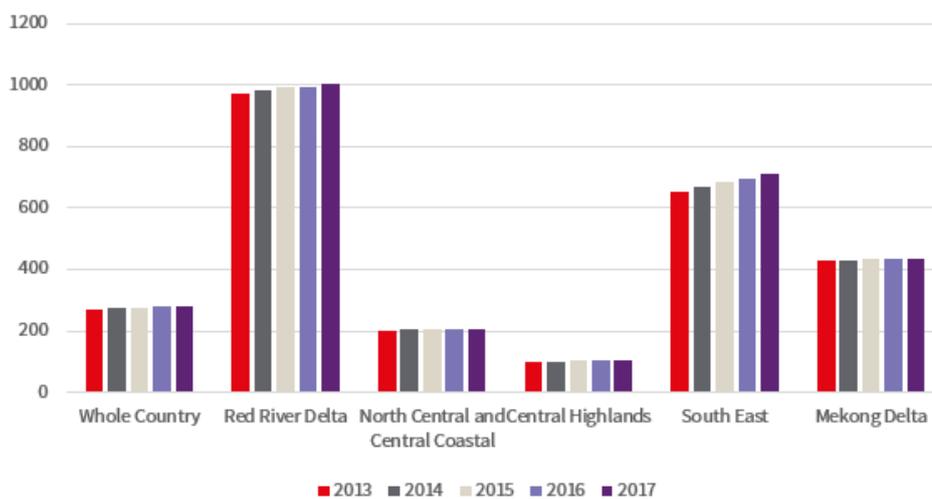


*Source: FIA Vietnam*

Whilst positive GDP reflects a healthy economy, the foreign direct investment (FDI) showed the interest level of enterprises or industry that present in the economy in the investment activities. In 2018, regarding the 17 investment industries, processing and manufacturing sector continued its leading place, attracting USD 11.3 billion and accounting for 44.6% of total capital. The real estate and retail sector followed up in second and third place with USD 5.8 billion and USD 2.1 billion, respectively.

## 2.2. Vietnam demographic drivers

**Figure 3: Vietnam Population Density by area (person/sq.m)**



*Source: GSO Vietnam*

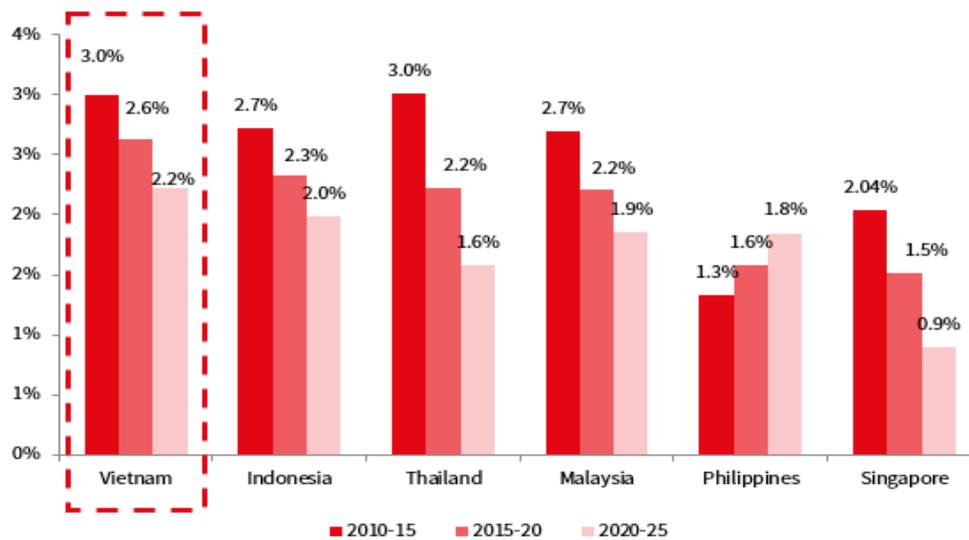
As of end-2017, the official population density in Vietnam was recorded at nearly 283 per capita per sq km, presenting an increase of 4.4% compared with 2013. On the contrary, Singapore and Philippines had population densities of over 7,908 and 346 person per sq km, respectively, in 2017.

In the five areas of Vietnam, the annual population density growth averaged approximately 1.1% during the 2013-17 period. Southeast area had the highest

growth of 8.5% yearly over the past five years, reaching 711 people per sq.km in 2017, nearly double times higher than that for the whole country, thanks mostly to the rapid infrastructure improvements, the fast pace of urbanisation and the increasing number of middle-income earners.

This increase resulted in the development of a large number of new urban areas, due to the considerable number of migrants from rural areas and nearby provinces who settled in developed cities as well as in key economic zones, such as HCMC, Hanoi, Danang, Hai Phong and Binh Duong.

**Figure 4: Urbanisation ratio by country**



*Source: World Development Indicators*

The urbanisation proportion of Vietnam was 34% as of 2015. Over the period of 2010-15, Vietnam annual growth rate have recorded at 3.0% per year. Compared to other regional countries such Malaysia, Indonesia, Thailand, Philippines, Vietnam is still on the way of rapid urbanisation.

By the end of 2015, Vietnam had 870 urban areas, adding roughly 100 areas to the urban system compared with 2013 and this is expected to increase to 1,000 urban areas by 2025.

On the contrary, the suburbanisation growth showed downward trend over the past five years, from more than 0.6% in 2012 to 0.15% in 2017. Meanwhile, the growth rate of urbanisation continued to show strong growth, from 1.98% in 2012 to nearly 2.8% in 2017, up by 0.8%.

Due to the rapid growth of Vietnam's economy, particularly in HCMC and Hanoi - the core of Vietnam's largest urban area that has attracted a large number of migrants from rural areas to these cities. As a result, this trend sets up new urban areas, where urbanisation has been taking place at a vigorous pace in the recent years.

Moreover, the urbanisation of Northern provinces have been improving yearly. Taking Hai Phong as an example, the province is one of the most important economic centers of Vietnam, thanks to its strategical seaports, increasing urbanisation, and many industrial parks invested by multinational corporations.

### **3. The impacts of socio-economic growth on the Vietnam's environment**

#### ***3.1. The linkages between the economic growth and the environment***

There are various perspectives about the relationship of economic growth and the environment. According to The Environmental Kuznets Curve (EKC), the graph describes the relationship between the economic development and the environment's health. The vertical axis is considered as the damage level of environment, while the X-axis describes the population income per capita.

**Figure 5: Environmental Kuznets Curve**

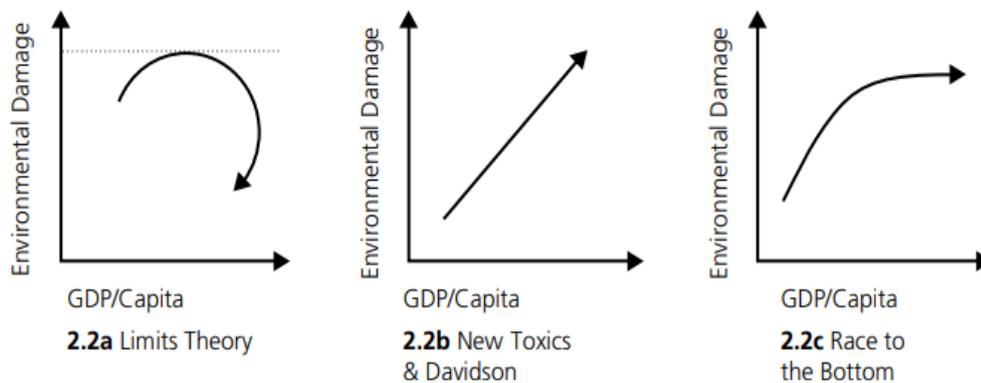


*Source: Economic Growth and the Environment, 2010*

In this theory, a country with strong economic background shifting to industrialization or mechanization of agriculture will have positive GDP and the environmental damage level will decrease. On the other hand, as at low GDP or negative GDP growth rate, the inequality is expected to increase.

There are other views on the economy-environment relationship. Arrow et al. (1996) said that small changes causing catastrophic damage focusing on the delivery from economic growth to environmental outcomes could be counter-productive, which is unlikely. For example, Dietz (2000) suggested that in the context of biodiversity, the increasing spending on maintaining species diversity will not be able to regenerate extinct species. Stern (2004) also pointed that the international competition could change the relationship between economic growth and the environment. The international competition could lead to increasing environmental damage, for example, developed countries start to bring their polluting activities, like moving industrial areas to developing countries. This model is called “race to the bottom”.

**Figure 6: Different views on the economic growth and environment relationship**



*Source: Economic Growth and the Environment, 2010*

For example, despite the success of economic growth in the past has produced many benefits, it also raised awareness of degradation of ecosystems. According to the Ministry of Natural Resources and Environment, in every year the whole country consumes more than 100,000 tons of plant protection chemicals; generated over 23 million tons of domestic waste, more than 7 million tons of industrial solid waste, more than 630,000 tons of hazardous waste while waste and wastewater treatment is still very limited.

The Vietnam Environment Situation report in 2015 highlighted that with the current economic cycle, the number of motorbikes in Hanoi and Ho Chi Minh City increased by 11.02% per year and 14.88% per year respectively. This growth rate, which is 1-1.5 times higher than the GDP growth, in line with the rapid growth of population, is putting the infrastructure as well as air pollution under much pressure.

Another illustration comes from growing population in Vietnam leading to the limited available space for infrastructure and traffic construction. The report No 427/BC-CP on 17/10/2016 of Government about Three years implementing Urban Law emphasized that the current land ratio for Hanoi infrastructure only reached less than 10%, while this rate should be around 20-26%. In addition, the urbanization also caused climate change issues, natural disasters and environmental incidents. The flooding in urban cities usually occur in rain season. It is partially because many lakes and rivers are backfilled to build commercial projects and residential properties. Also, the greenery system in the urban area is not paid attention. The greenery cover in Vietnam has not met standards as well as ecological balance. In two major cities in Vietnam, including Hanoi and Ho Chi Minh City, this number only reached around 2sqm/person

**Figure 7: The minimum greenery ratio by sqm per person**

Loại đô thị	Tiêu chuẩn (m <sup>2</sup> /người)
Đặc biệt	≥ 7
I và II	≥ 6
III và IV	≥ 5
V	≥ 4

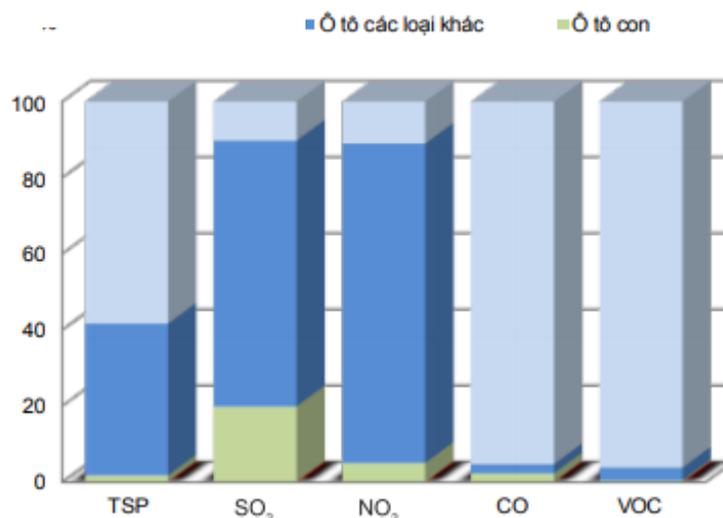
*Source: Vietnam Construction Planning Standards, 2008*

### 3.2. The impacts of socio-economic development on the environmental changes

#### Air pollution

According to the General Statistics Office, in 2017, the number of population in Vietnam surpassed more than 93.7 million people, which increased by more than 4.5 million people. The increasing number of population, in tandem with the transportation, the construction and industrial activities has triggered air pollution problems. Regarding transportation activities, the main emissions include SO<sub>2</sub>, NO<sub>2</sub>, CO, dust (TSP, PM<sub>10</sub>, PM<sub>2.5</sub>). Of which, the emissions rate of toxic emissions such as CO, SO<sub>2</sub> are mainly contributed by people using motorbikes.

**Figure 8: The proportion of emissions causing air pollution by means of transportation in 2014**



*Source: WHO, 1993*

In addition, the expansion and new set-up of industrial parks near the urban area also harm the environment, causing air pollution in urban areas. According to

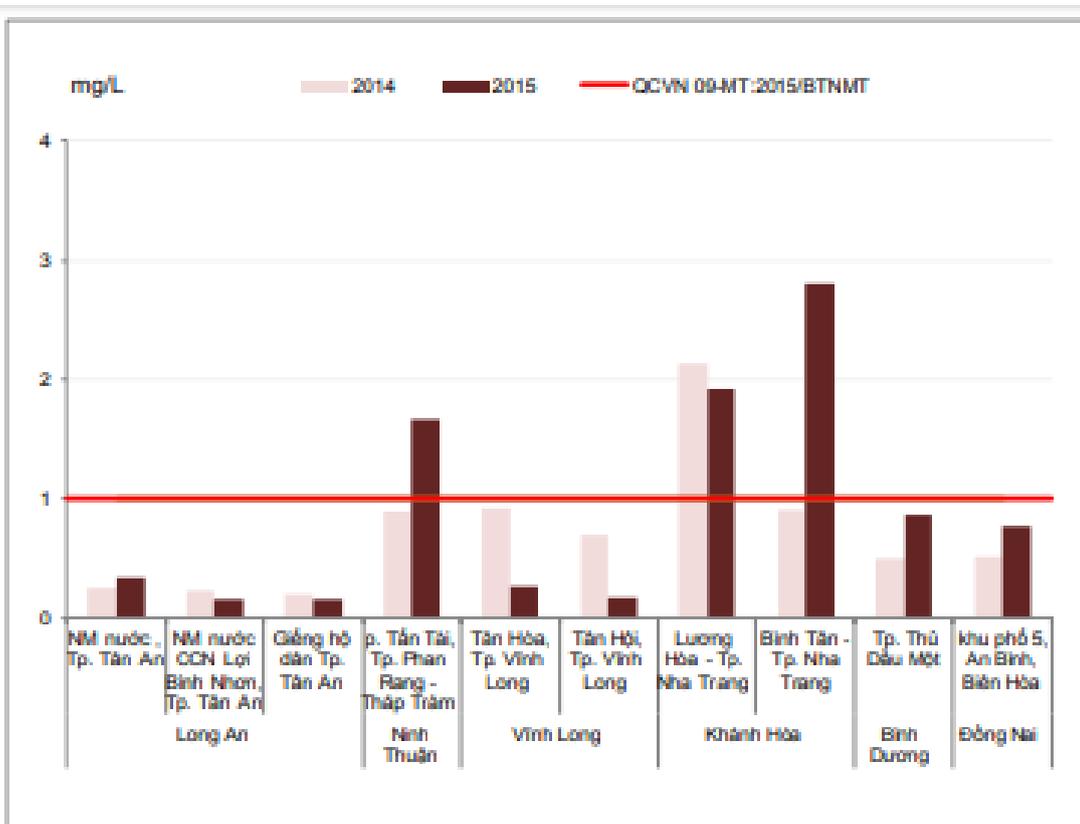
FIA Vietnam, the proportion of FDI pledged into the manufacturing, accounting for 45% in 2018. In particular, there are about 283 industrial parks with more than 550,000 m<sup>3</sup> of waste water per day and night. Most of polluted air from industrial parks are NO<sub>2</sub>, SO<sub>2</sub>,CO,etc, of which the emissions such as NO<sub>2</sub>,SO<sub>2</sub> and TSP are largely contributed to the total polluted air.

### Water pollution and limited fresh water supply

Compared to the rapid urbanization in Vietnam, the water supply has not met demand of the population in the urban area. In 2016, the Ministry of Natural Resources and Environment announced that 40% of total water supply in urban area in each year are exploited from underneath the soil. Because of the overexploitation and unreasonable use of water supply, many urban cities in Vietnam is lacking water underneath the soil, such as Vinh Yen (Vinh Phuc), Hanoi, Ho Chi Minh and Soc Trang.

Water pollution is a negative change of the the physical and biological of water, with the appearance of substances in liquid and solid form that make the water become harmful to humans and creature. Considering the speed of spread and the scale of influence, water pollution is a more worrying issue than soil pollution.

**Figure 9: The amoni proportion in the water in some urban areas**

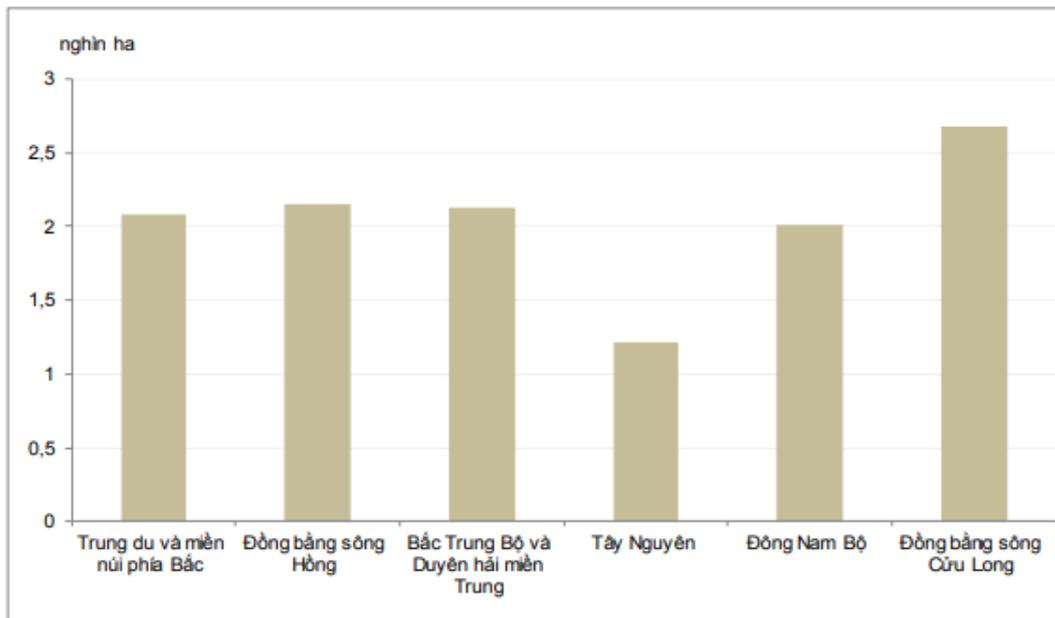


Source: Current environment situation in 2011-2015 in some provinces

## Soil pollution

The soil environmental quality in the urban cities are increasing polluted due to the outsource polluting from human activities. Currently, there are about 76% of industrial parks having waste treatment system and this polluted water absorbed in the soil. In 2015, the total area of landfill area are 12.26 thousand ha, accounted for 0.3% of total area in non-industry land, increased 4.39 thousand ha compared to 2010. However, the landfill area has not met the demand.

**Figure 10: Landfill area in Vietnam by region**



*Source: Ministry of Natural Resources and Environment, 2015*

Soil environment in some urban areas is also affected by the activities of production and commercial construction, hospitals, medical facilities, etc. According to the Decision 64/2003/QĐ-TTg, there are 26 organizations causing serious environmental pollution. Most of them are textile, cement, chemistry, oil industry, which are forced to leave urban areas of 13 provinces. In 2013, this number increased, with 34 organization forced to leave 15 provinces or having solution to improve the environment.

## 4. Conclusion

Along with the fast pace of urbanization and positive GDP growth, the pressure from development activities puts pressure on urban areas in Vietnam. In terms of the economic analysis, Vietnam's economy in 2018 flourished with the GDP growth in 2018 reached 7.08% compared to 2017 - the highest increase in 11 years. The quality of growth and business environment have been improved, with newly established businesses increased sharply. The macroeconomic foundation is strengthened and gradually enhanced.

The report also provided some perspectives about the linkages between socio-economic development and the environmental changes. The analysis showed that the GDP is a main contributor to the environmental damage and vice versa. Meanwhile, some other views pointed that economic growth to environmental outcomes could be counter-productive, or the international competition could lead to increasing environmental damage. However, different perspectives of the relationship between economic growth and environment supposed that the environmental changes are impacted by economic activities in line with the rapid growth of population and urbanization.

The analysis and assessment showed that the environmental problems caused by economic activities are: air pollution in the urban area still maintained at high level; water pollution in rivers and limited fresh water supply; the soil pollution and declining water supply underneath soil are prevailing. The pollution in urban area not only impacts on human well-being, but also lead to the negative economic situation, environmental landscape and environmental conflicts.

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