Journal of FINANCE & ACCOUNTING RESEARCH

EDITORIAL OFFICE
No. 58 LE VAN HIEN, BAC TU LIEM DISTRICT - HA NOI

Phone: 024.32191967
Email: tapchinctckt@hvtc.edu.vn
Website: https://tapchitckt.hvtc.edu.vn/
https://tapchitckt.hvtc.edu.vn/?language=en-US

MACROECONOMICS AND FINANCE

STUDY EXCHANGE

CORPORATE FINANCE

INTERNATIONAL ECONOMICS AND FINANCE

Printed at Statistical Publishing House - Publishing Lisence: 487/GP-BTTTT date 28/10/2016
Prints and deposits completed in December, 2023.

Tạp chí Nghiên cứu
TÀI CHÍNH KẾ TOÁN

TÒA SOẠN
SỐ 58 LÊ VĂN HIỀN, Q. BẮC TỪ LIÊM - HÀ NỘI

Điện thoại: 024.32191967
E-mail: tapchinctckt@hvtc.edu.vn
Website: https://tapchitckt.hvtc.edu.vn/
https://tapchitckt.hvtc.edu.vn/?language=en-US

KINH TẾ, TÀI CHÍNH VĨ MÔ

NGHIÊN CỨU TRAO ĐỔI

In tại Nhà xuất bản Thống kê - Giấy phép số: 487/GP-BTTTT ngày 28/10/2016
In xong và nộp lưu chiểu tháng 12 năm 2023.

GLOBAL FOOD SECURITY AND ITS IMPACTS ON VIETNAM'S RICE EXPORT

MA. Pham Thi Phuong Lien* - PhD. Le Nhu Quynh*

Abstract: ***After two years of difficulties due to the COVID-19 pandemic, the world continues to face the increasingly existential threat of the global food crisis with the sudden increase in food prices and hunger all over the world. As the world's population reaches 8 billion people by 2022, the task of ensuring global food security becomes more urgent than ever. The global food security crisis is affecting almost all countries in the world, including Vietnam. Besides the negative effects, the global food security crisis also brings opportunities for Vietnam, especially in increasing rice exports and affirming Vietnam's important role in ensuring global food security. The article provides an overview of the global food security situation, analyzes the impact of the global food security crisis on Vietnam's rice exports, and gives some suggestions for Vietnam to take advantage of opportunities in a new context.***

• Keywords: *crisis, food, rice export, security, Vietnam*

JEL codes: F50, Q02.

Date of receipt: 19th September, 2023

Date of delivery revision: 22th September, 2023

Date of receipt revision: 16th November, 2023

Date of approval: 01at December, 2023

Tóm tắt: *Sau hai năm gặp nhiều khó khăn do đại dịch COVID-19, thế giới lại tiếp tục phải đương đầu với mối đe dọa ngày càng hiện hữu của cuộc khủng hoảng lương thực toàn cầu với sự gia tăng đột biến giá lương thực và nguy cơ nạn đói gia tăng trên phạm vi toàn thế giới. Khi dân số thế giới đạt mốc 8 tỉ người vào năm 2022, nhiệm vụ đảm bảo an ninh lương thực toàn cầu càng trở nên cấp thiết hơn bao giờ hết. Khủng hoảng an ninh lương thực toàn cầu đang ảnh hưởng đến hầu hết tất cả quốc gia trên thế giới, trong đó có Việt Nam. Bên cạnh những ảnh hưởng tiêu cực, khủng hoảng an ninh lương thực toàn cầu cũng đem lại cơ hội cho Việt Nam, đặc biệt trong việc gia tăng xuất khẩu gạo và khẳng định vai trò quan trọng của Việt Nam trong việc đảm bảo an ninh lương thực toàn cầu. Bài viết khái quát về tình hình an ninh lương thực toàn cầu, phân tích sự tác động của khủng hoảng an ninh lương thực toàn cầu đến xuất khẩu gạo của Việt Nam và đưa ra một số gợi ý cho Việt Nam nhằm tận dụng cơ hội trong bối cảnh mới.*

• Từ khóa: *an ninh, lương thực, khủng hoảng, Việt Nam, xuất khẩu gạo.*

1. Introduction

During the first 20 years of the 21st century, poverty worldwide remained at an alarming rate. In 2021, the Global Report on the Food Crisis says people are surpassing all previous records in a negative direction (FSIN, 2021). Food is not evenly distributed, leaving the poorest areas of the world facing starvation. The year 2022 has seen a severe food security crisis "of an unprecedented scale, the largest in modern history" (according to a report by the United Nations World Food Program-WFP). Especially when the world population reaches 8 billion people, the task of ensuring global food security becomes more urgent than ever.

In Vietnam, after more than 35 years of renovation, we have basically ensured national food security, and at the same time maintained the position of the leading rice exporting country, contributing to ensuring the world's food security. The global food security crisis has more or less affected the development of Vietnam's economy. Rising food prices and constantly increasing fertilizer prices are also increasing risks to Vietnam's food security. However, this is also considered an opportunity for us to export agricultural products, especially rice, when the demand and prices of foods such as wheat and rice increase and more and more countries choose to cut exports and increase food hoarding.

** Thuongmai University; emai: lienpham281@gmail.com*

With the position of a leading agricultural product exporter, Vietnam can assert its role in contributing to global food security. Vietnam's rice exports in recent years have gained many remarkable achievements, despite the volatile world situation. However, Vietnam's rice production and export are still limited, so if we want to dominate the international rice market and take advantage of opportunities in the coming time, we need to have more timely and radical solutions.

2. Overview and literature review of food security

Food security is understood in different ways. According to Maxwell, there are nearly 200 definitions of food security (Maxwell, 1986, p.155) depending on each person or organization. In 1986, the World Bank defined food security as "the ability of people to access food at all times to have enough food to ensure health and functioning".

According to the FAO definition, *"Food security is the right of everyone to have access to safe, nutritious and adequate food at all times and places to maintain healthy and active lives"*. According to Le Anh Thuc (2018) *"National food security is the assurance that each country has an adequate and stable food source for its people so that they can access and consume to meet an active, healthy living standard; limit and reverse food shortages, hunger and dependence on imported food sources; ensure the promotion of competitive advantages in food production (if any) and income of food producers"*.

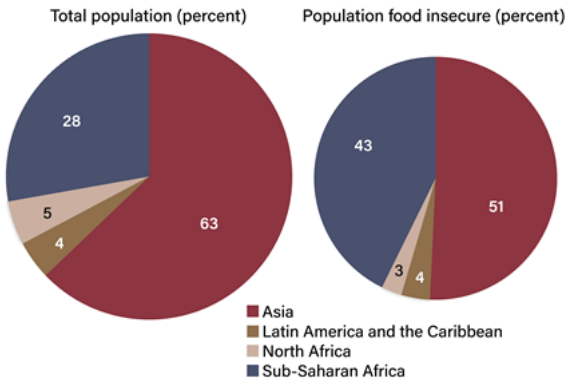
The World Food Summit in Rome (1996) introduced the official concept of food security, which stated: "Food security is ensured when all spaces, people are capable of economic and physical access to adequate, safe and nutritious food to meet needs, activities and health" (WFS, 1996).

The concept of "food security" is used at different levels: household, local, national and global. In this article, food security is used nationally and globally. National food security is having enough food in the country to provide enough food for all households within the country. Global food security is having enough food on a global scale to supply enough for all households in the world (Action Aid, 2000, p.22).

The opposite of food security is food insecurity. There are two types of food insecurity: chronic and temporary. Food insecurity is a long-term difficulty occurring at the household level due to lack of income and production capital or lack of money to buy enough food for the household. Meanwhile, temporary food insecurity is short-term food insecurity caused by a shock in food production or an economic system where the income or resources needed to regulate it are not readily available adjust for such shocks (Gladwin et al., 200). In addition to the above two categories, Oxfam (1998) also identifies cyclical food insecurity.

3. Overview of the situation of global food security

Figure 1. Percentage of insecure food population in 2022



Source: USDA, Economic Research Service

Global food production has decreased, and food shortages are getting worse. The United Nations warns that the number of people dying from food shortages is on the rise as around 828 million people, or 10% of the world's population, are in poverty by 2022 and more than 3 billion cannot afford for a healthy diet (FAO, 2022). Although the food security situation is estimated to have deteriorated in most countries by 2022, the extent of this varies across regions. Sub-Saharan Africa has the highest rate of food insecurity at 51%, reflecting the impact of food

price inflation on low-income populations in the region. Food insecurity in Latin America and the Caribbean is estimated at 29% and in Asia at 27%. North Africa is the most food-secure region with an estimated rate of food insecurity at 18% of the population by 2022. However, Asia's food-insecure population accounts for 51% of the population. The total population is food insecure among 77 IFSA countries (middle and low income countries), followed by Sub-Saharan Africa with 43% (Yacob Abrehe Zereyesus & Lila Cardell, 2022) (see Figure 1).

The shortage of food comes as the global supply chain has been disrupted since the outbreak of the COVID-19 pandemic in 2020 and will continue until 2022. The spreading COVID-19 pandemic makes the world can't help worrying about a food crisis when the supply chain is broken, and production has some difficulties. Uncertainty in food availability can create a wave of export restrictions, which causes scarcity in the global market. In the context of the complicated developments of the COVID-19 epidemic, countries around the world are trying to protect their food sources through different strategies. The exporting country is hoarding goods, exporting less, while the importing country tries to store a lot. As a result, some countries are at risk of facing food insecurity, even in the short term.

Another reason is that Russia and Ukraine export about a third of the world's wheat and barley, so the Russia-Ukraine conflict has hit the annual agricultural cycle and disrupted the sowing spring season in April and May, much of their final harvest is not shipped to the consumer markets and the grain is likely left behind or not harvested at all. In addition, the high prices of fuel and fertilizer because Russia exports nearly one-fifth of the world's fertilizer production in 2021. However, the conflict between Russia and Ukraine broke out, causing the supply of important nutrients for crops severely disrupted. Fertilizer prices skyrocket, causing farmers to rotate crops or use fewer nutrients, which is likely to lead to lower yields.

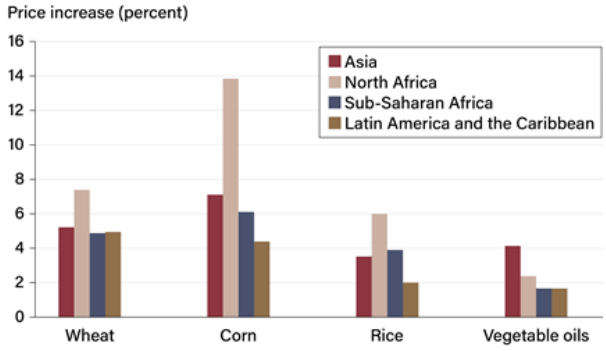
Besides, the worrying climate trends related to La Nina started in late 2020 and are continuing until 2022. The world is constantly witnessing unusual weather phenomena from droughts, floods, to storms and tornadoes… devastating farming and livestock activities. This is also the reason why global food production last year decreased and became scarce.

The food security crisis pushed up global food prices. 2022 has seen global food prices continue to soar, pushing millions of people into extreme poverty. According to the United Nations Food and Agriculture Organization, the global price of many food products has reached a record in 2022, increasing the risk of food insecurity in many countries. The Food and Agriculture Organization of the United Nations (FAO) said that global prices of food commodities such as cereals and vegetable oils have reached a record in 2022.

The FAO Food Price Index (a monthly index of the prices of commonly traded food items) fell 1.9% in December compared to a month before. For the whole of 2022, the index averaged 143.7 points, 14% higher than the 2021 average. According to the FAO, the 2022 food price index is the highest index since it was started to be measured in 1961. In 2022, the FAO ancillary indicators show a 17.9% increase in cereal prices compared to 2021, a 13.9% increase in vegetable oil prices, a 19.6% increase in dairy prices, the price of meat increased by 10.4% and the price of sugar by 4.7%. In December 2022, the FAO Food Price Index fell 1.9% from the previous month, recording the ninth consecutive monthly decline, the price of cereals, the largest component of the general food index, down 1.9%, meat prices down 1.2%, vegetable oil prices down 6.7%, milk prices up more than 1.1% and sugar prices up 2.4%. But the index rallied strongly in the first months of the year and ended 2022 much higher than the 2021 average. The decline of the past December was largely due to the market adjusting to the disruption of the US economy. distribution activities, higher transport prices and lower demand, and slowing global economic growth (FAO, 2022).

Inflation-adjusted domestic prices of major grains in 91% of IFSA countries are projected to increase in 2022 compared to 2021. On average, the regions most affected by the invasion of Russia entered Ukraine and high input prices were North Africa and Asia. It is estimated that North Africa, which is normally dependent on wheat and maize imports from the Black Sea region, will see a 7% increase in wheat and maize prices in 2022, and a 7% increase in maize prices in Asia and 5% for wheat in 2022 (see figure 2).

Figure 2. Increase food price in 2022 in some regions (%)



Source: USDA, Economic Research Service

The conflict in Ukraine is considered one of the factors that pushed up food prices, as global food stocks fell by 8%, especially cereals and wheat, products of which Russia and Ukraine contribute up to 30% of world production. As the conflict continues, the risk to food prices increases, and at the same time millions of people around the world are at risk of becoming food insecure.

According to the FAO assessment, Africa is the region affected most heavily by the "food price storm", when a third of the continent's population has to live in severe food shortages; one in five Africans have suffered from hunger in the past two years. Two-thirds of people in the category of "extremely poor", living on less than 1.9 USD/day as defined by the World Bank (WB), live in sub-Saharan Africa.

Regarding the state of the world rice market, according to Fitch Solutions (2023), the global rice market will record its largest shortfall in two decades by 2023. Rice has become an increasingly attractive alternative after prices for other major grains skyrocketed since the Russia-Ukraine conflict broke out in February 2022 with about half of the global population using rice as a daily staple. In which, the Asia - Pacific region is under great pressure because demand accounts for 90% of the world's rice. A deficit of this magnitude for one of the world's most cultivated grains will hurt major importers. According to the Fitch Solutions report, rice prices are expected to remain around current highs until 2024. The average rice price is expected to average $17.3/quintal through 2023 and will only drop to $14.5/quintal by 2024. The report also forecasts a global shortage in 2022/2023 at 8.7 million tons. That would mark the largest global rice deficit since 2003/2004, when the global rice market had a deficit of 18.6 million tons.

The reason for the above situation is due to a shortage of rice supply because of the impact of bad weather in the main rice-producing economies of China and Pakistan. The world's top rice producer, China, has just experienced its worst drought and crop failure in six decades. Pakistan, which accounts for 7.6% of global rice trade, also saw an annual output drop of up to 31% due to severe flooding in 2022. According to agricultural analytics firm Gro Intelligence, cumulative rainfall in Guangxi and Guangdong provinces - China's major rice production hub - is the second highest in at least 20 years. Similarly, Pakistan - which accounts for 7.6% of the global rice trade - has seen its annual output drop by 31% year-on-year due to severe flooding and the impact may be even worse than expected.

In addition, the war in Ukraine has hampered the ability to export wheat in Ukraine. Poland, Hungary, Slovakia and Bulgaria have blocked grain from Ukraine to protect the domestic agricultural industry against the wave of dumping. The ban on food exports and severe supply disruptions from some countries such as India and Indonesia made the price increase even stronger. Along with that, the cost of agricultural inputs such as fertilizers and

pesticides skyrocketed, leading to an increase in the selling price of finished rice.

4. The impact of global food security on Vietnam's rice exports

Over the past 35 years, Vietnam has gained many great achievements in various fields, the country is undergoing a strong transformation in the process of industrialization, modernization and international integration, of which the outstanding achievements are poverty reduction, ensuring national food security, while maintaining the position of a leading rice exporter, contributing to ensure the world's food security. However, there are limitations to ensure national food security, such as unsustainable food security when there are disparities in food access between groups and between some regions of the country; food production is affected by global climate change and shocks from the world food market; requirements to promote comparative advantage from the position of leading rice exporting country to increase productivity and income for food producers; sometimes the production is not according to the planning, leading to a local surplus of food, affecting the producers; The income of rice farmers is still low, the life of a part is still difficult...

In fact, Vietnam imports from Russia and Ukraine many input materials for domestic agricultural production such as wheat, corn and especially fertilizers (in normal conditions, it can reach 1 million tons, accounting for about 20% of total wheat imports), maize (3% of total imports of corn) for animal feed and especially fertilizers (10% of total fertilizer imports). Therefore, along with high food prices, the constantly increasing fertilizer prices are also increasing risks to Vietnam's food security.

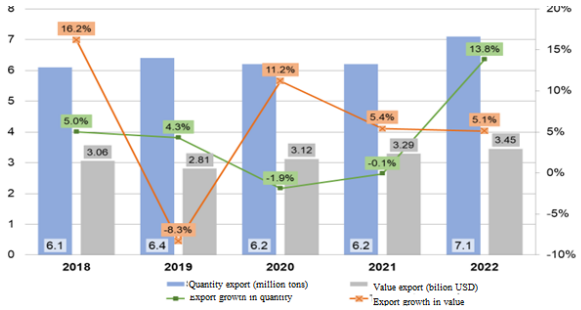
However, besides these negative effects, the global food security crisis also brings opportunities for Vietnam. Since the beginning of 2022, the food crisis, the consequences of the COVID-19 pandemic and the disruption of the global supply chain have caused the demand for foods such as wheat and rice to increase. Data from the Food and Agriculture Organization of the United Nations (FAO) shows that food prices have increased by 30% in the past year, as the COVID-19 pandemic and the conflict in Ukraine tightened global supply chains. To cope with this situation, more and more countries are choosing to cut exports and increase food and food hoarding. This move is considered likely to cause prices to continue to escalate and the situation to become worse. Specifically, since the conflict between Russia and Ukraine broke out, about 30 countries have implemented measures to limit food exports. In which, many countries are expected to shoulder the task of supplying raw materials to the world such as India, Brazil, Argentina... have intention to limit exports.

In the context that countries are looking for ways to stabilize food security, Vietnamese businesses are making efforts to export to meet the increasing demands of customers around the world. With the position of a leading exporter of agricultural products, Vietnam affirms its role in contributing to ensure global food security. Especially in difficult circumstances, with high prices of fertilizers and animal feeds, disruption of the supply chain, agricultural production in Vietnam is still growing. In 2022, Vietnam's agricultural industry recorded many development targets that met and exceeded the set plan, marking the year of renewing thinking and growth models, improving the quality and efficiency of production and business, with a trade surplus of over 8.5 billion USD, accounting for nearly 76% of the trade surplus of the whole economy. Specifically, in 2022, the added value of Vietnam's agricultural sector will reach 3.36%, which is the highest increase in recent years; agriculture-forestry-fishery export turnover reached 53.22 billion USD, up 9.3% compared to 2021; trade surplus of over 8.5 billion USD. For the whole year of 2022, the agriculture, forestry and fishery sector increased by 3.36%, contributing 5.11% to the growth rate of total added value of the whole economy; at the same time, exceeding the target assigned by the Government to grow by 2.5-2.8%... Livestock products in Vietnam still have high growth compared to previous years, specifically: the output of raw meat of all kinds reached over 5.1 million tons, an increase of 5.33% over the

same period in 2021. The output of raw meat of Vietnam in 2022 reached over 7 million tons. Most of Vietnam's other agricultural products have maintained their output or achieved higher output compared to previous years, such as: pepper, cashew, coffee, tea, fruit... still maintaining and increasing export volume, thereby contributing to meet consumer demand and contribute to limit global price inflation of agricultural products and food (GSO, 2022).

Regarding rice production, Vietnam is always in the group of the largest rice producing and exporting countries in the world. With the recent geopolitical impacts, the price of our country's rice exports increased to the highest level in the past 10 years. In 2022, Vietnam's rice production will still reach over 43 million tons, in addition to serving the domestic food demand, the total rice export volume will reach more than 7.1 million tons, up 13.8% over the same period last year. In terms of export value, reached more than 3.45 billion USD, up 5.1% over the same period last year. This is the highest number in the last 5 years. And it is also a number that exceeds the industry's expectations in the context of the world's many fluctuations, continuing to be a billion-dollar item of Vietnam. Regarding rice price, in 2022, the average export price will reach 486 USD/ton. According to the Vietnam Food Association, the export price of Vietnamese rice has surpassed Thailand and is the highest in the world. Besides maintaining orders to traditional markets, businesses are also promoting exports to "difficult" markets such as the US or EU countries such as Italy, Germany, Sweden, Belgium, Spain... (see Figure 3)

Figure 3. Vietnam's rice export 2018-2022

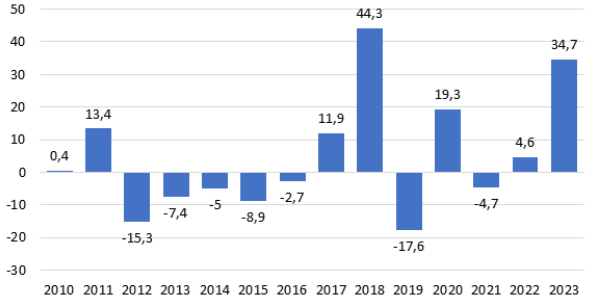


Source: General Statistics Office

In the first 6 months of 2023, Vietnam's rice exports grew well compared to the same period in 2022 in both traditional and potential markets. Rice export value is estimated at 2.3 billion USD, up 34.7% over the same period last year; ranked 3rd in export value in the group of agricultural products. Rice exports were estimated at 4.27 million tons, up 22.2% over the same period last year (See Figure 4).

Figure 4. Vietnam's rice export in 6 months from 2010-2023

Increase/decrease compared to the same period last year (%)



Source: Vietnam General Statistics Office (2023)

** Cumulative data in 6 months*

Vietnam's current rice export opportunities are very high. The global food crisis is an opportunity for Vietnam to increase rice exports and play an important role in ensuring global food security.

However, besides the achieved results, rice export activities still have difficulties and limitations such as: the market strategy is not really stable and long-term; market development has not been commensurate with the potential of the industry; fierce competition from rice exporting countries; input prices soar…

5. Some solutions to improve the efficiency of Vietnam's rice exports in the context of the global security crisis

In order to boost rice production and export activities in the coming time, take advantage of market opportunities, Vietnam can research and implement the following solutions:

Firstly, continue to improve institutions and policies to create favorable conditions for farmers and businesses to promote research and development of high-yield and high-quality

rice varieties in line with market requirements, effectively use the brand and trademark of Vietnamese Rice; develop standards on production, processing and product quality in line with international integration in the current situation.

Secondly, building infrastructure (post-harvest technology, product preservation warehouse), investing in the development of high-value rice varieties, creating a brand image. Promote digital transformation, apply scientific and technological advances to production, reduce dependence on fertilizers and pesticides that affect rice quality and cause environmental pollution, in order to increase rice yield and rice quality, and raise export prices.

Thirdly, continue to effectively implement policies to encourage and support the construction of raw material sectors, strengthen linkages in production and consumption of paddy and rice; improve organizational capacity of cooperatives, remove difficulties and obstacles in mechanisms and policies related to production and consumption of rice.

Fourthly, promote bilateral and multilateral negotiations to sign agreements on conformity and mutual recognition of quarantine, product quality, and food safety standards with key markets in order to take advantage of market opening opportunities and dominate markets.

Fifthly, orient farmers and traders to strengthen preservation and processing to meet import regulations of markets on quality, food safety, pesticide residues, quarantine, and traceability.

Sixthly, diversifying rice export markets, stably, sustainably and effectively; flexibly organize and implement trade promotion activities, combining traditional and online forms to maintain and strengthen traditional rice export markets such as the Philippines, China, Indonesia, Africa... and develop new, potential, FTA markets; exploiting niche markets with aromatic rice, high quality rice such as EU, Korea, USA, North America...

Seventhly, step up the work of market research, assessment and forecast of import demand and the ability to conduct trade promotion of rice in import markets; promptly update information for Vietnam Food Association and rice exporters to serve business and export orientation.

Eighthly, studying the negotiation and signing of preferential trade agreements with a number of potential export markets; take advantage of the process of reviewing the Agreements that have been put into effect to propose partners to open up more and increase quotas for Vietnam.

Ninthly, building a brand for Vietnamese rice products through the national program on trade promotion, the national brand program and related programs and projects of the ministries, branches and localities. Strongly reforming administrative procedures creates favorable conditions to promote rice exports.

Tenthly, strengthen propaganda to raise awareness of traders about the provisions of the new generation free trade agreements and bilateral agreements to make the most of the tariff quota for Vietnamese rice.

References:

Lê Anh Thực (2018), An ninh lương thực trong bối cảnh toàn cầu hoá: Kinh nghiệm quốc tế và gợi ý đối với Việt Nam, Thesis of International Economics, University of Economics, Hanoi National University

General Statistics Office (2022), Thông cáo báo chí về tình hình kinh tế - xã hội quý IV và năm 2022.

Action Aid (2000), Thương mại quốc tế và an toàn lương thực, Reference book, National Political Publishing House, Hanoi.

Gladwin, Christina H., Anne M. Thomson and et al. (2001), "Addressing food security in Africa via multiple livehood strategies of women famers", Food Policy, Volume 26, Number 2: 179-180.

FAO (2022), The State of Food Security and Nutrition in the World 2022, Retrieved from https://www.fao.org/documents/card/en/c/cc0639en

FSIN (2021), Global Report on the Food Crisis 2021. Retrieved from https://docs.wfp.org/api/documents/WFP0000127343/download/?_ga=2.190010786.887918287.1675300493-1667735721.1666363818

Maxwell. Gerald G. and Daniel M.Saltman (1986), "The Human Ecology Perspective", Bouder and London: Westview Press.

Oxfam (1998), "Monitoring indicators in food security", The Da Krong Program, Quang Tri Provice, Vietnam, April 1998.

World Food Summit (1996), "Declaration on World Food Security", Rome.

Yacob Abrehe Zereyesus, & Lila Cardell (2022), "Global Food Insecurity Grows in 2022 Amid Backdrop of Higher Prices", Black Sea Conflict.

STRUCTURAL CHANGE AND ECONOMIC GROWTH: EVIDENCE FROM VIETNAM

PhD. Nguyen Huu Tan*

Abstract: ***The article delivers a comprehensive theoretical examination of how structural change influences economic growth. It delves into an analysis of how this restructuring process impacts Vietnam's economic growth and extracts insightful implications for the direction of structural transformation. This research relies on statistical data from Vietnam from 2005 to 2022 and employs the Autoregressive Distributed Lag (ARDL) model to assess the effects of economic sector restructuring on growth. The findings reveal that structural change has a positive impact on GDP growth. Furthermore, it is accompanied by increased domestic investment, government expenditure, and trade openness, all of which collectively drive economic growth.***

• Keywords: *structural change, economic growth, ARDL.*

JEL codes: F40, F43

Date of receipt: 20th September, 2023
Date of delivery revision: 21th September, 2023
Date of receipt revision: 27th October, 2023
Date of approval: 28th November, 2023

Tóm tắt: *Bài viết đưa ra một đánh giá lý thuyết toàn diện về sự thay đổi cơ cấu ảnh hưởng như thế nào đến tăng trưởng kinh tế. Nó đi sâu vào phân tích xem quá trình tái cơ cấu này tác động như thế nào đến tăng trưởng kinh tế của Việt Nam và rút ra những hàm ý sâu sắc về định hướng chuyển đổi cơ cấu. Nghiên cứu này dựa trên dữ liệu thống kê của Việt Nam từ năm 2005 đến năm 2022 và sử dụng mô hình Độ trễ phân phối tự hồi quy (ARDL) để đánh giá tác động của tái cơ cấu ngành kinh tế tới tăng trưởng. Các phát hiện cho thấy sự thay đổi cơ cấu có tác động tích cực đến tăng trưởng GDP. Hơn nữa, nó đi kèm với sự gia tăng đầu tư trong nước, chi tiêu chính phủ và độ mở thương mại, tất cả đều thúc đẩy tăng trưởng kinh tế.*

• Từ khóa: *thay đổi cơ cấu, tăng trưởng kinh tế, ARDL*

1. Introduction

Economic growth has been a central concern in the field of economics since its inception. Every country aspires to achieve robust economic growth, but it is far from an automatic or spontaneous process. The significant disparities in economic performance among countries have spurred extensive investigations into the determinants of these divergent outcomes (Opoku & Yan, 2018).

Structural change, among other factors, plays a pivotal role in economic growth. The concept of 'structural change' or 'structural transformation' is frequently invoked in economics, especially in the realm of development literature. Structural change has remained a vital aspect of development economics for an extended period (Erumban et al., 2019). Page (2017) highlights that it was a primary focus of growth theories in the 1950s and 1960s. However, the emergence of neo-classical growth theories in the 1980s and 1990s, emphasizing the "whole economy," temporarily overshadowed this concept. The argument was that their recommendations, such as investments in physical and human capital, trade openness, institution building, and governance, offered little assistance to policymakers. Consequently, there was a resurgence of interest in structural change among economic theorists in the late 20th century (Arena, 2017).

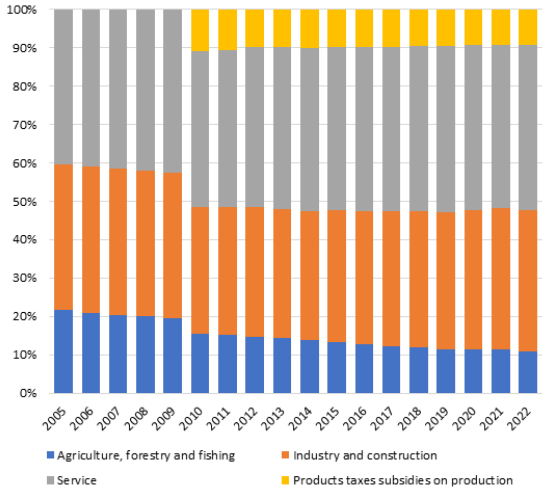
Structural change encompasses various dimensions and serves numerous purposes within economics. Broadly, as Gabardo et al. (2017) suggest, it encompasses all changes in production

** Academy of Finance; email: nguyenhuutan@hvtc.edu.vn*

and employment within and between sectors, including the emergence of new sectors and the decline of older ones. In a narrower sense, it refers to compositional shifts within the primary, secondary, and tertiary sectors of the economy. Van-Neuss (2019) defines structural change as the "reallocation of economic activity across the three broad sectors: agriculture, manufacturing, and services." The current study adopts this understanding of structural change and examines its role in the growth process.

As economies progress, their structures evolve over time (Olczyk & Kordalska, 2018). According to Briones and Felipe (2013), Asia has experienced rapid structural transformation over recent decades, attracting significant interest in its future development. They anticipate that, in the coming decades, Asia will emerge as an economic powerhouse, surpassing Europe and North America. The factors contributing to its sustained growth include manufacturing and services, but not agriculture. Agriculture is excluded due to its slower growth compared to other sectors and its declining contribution to overall output. Aizenman et al. (2012) attribute the unprecedented scale and speed of structural change in Asian economies to their rapid and sustained economic growth, noting that these changes occurred more swiftly than in advanced countries worldwide.

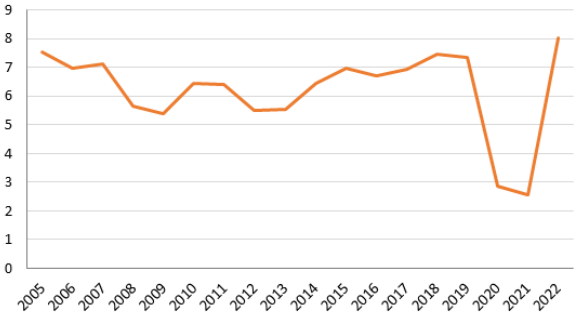
Figure 1. Economic structure of Vietnam from 2005 to 2022



Source: General Statistics Office

Structural change is an objective process that alters the structure, proportion, speed, and quality of economic relationships between sectors, regions, and economic components to achieve a more rational structure, creating new conditions and forces for economic and social growth and development. However, in reality, the dynamics and changes in economic structure are diverse, sometimes not following their laws, and the results obtained from economic structural transformation can also depend on various subjective or objective factors.

Figure 2. GDP growth rate of Vietnam from 2005 to 2022



Source: Databank, World Bank

In the years following its separation, Vietnam's economy has continuously expanded, with the GDP scale increasing rapidly and consistently, and a positive shift in economic structure. The industrial and service sectors have developed rapidly, driving changes in the economic structure and fostering rapid economic growth, although these assessments have been qualitative. Therefore, it is necessary to quantitatively evaluate the impacts of structural change alongside other factors on GDP growth, to derive implications for restructuring the economic sectors and creating new impetus for the economy.

2. Empirical review

A variety of empirical studies exist that seek validation of the structural change nexus with structural change and economic growth. According to Nick Henry (2011), the history of economic development has shown a close and complex relationship between economic growth and the structural transformation of economic sectors. Specifically, economic growth can lead

to changes in the structure of economic sectors, or changes in the economic sector structure can influence economic growth. This is because the structural transformation of the economy reflects the ability of an industry, region, or economy to adapt to new competitive pressures and opportunities.

The research by Tania-Georgia, Viciu; Adrian, Vasile; Carmen-Eugenia, and Costea (2012) focuses on examining the relationship between economic structures and the overall economic growth of the Romanian economy. The results indicate that the distribution of economic output in the country is considered successful as it transitions from an old regime to a market economy. However, labor allocation is still inefficient, especially in the agriculture sector, where approximately 30% of the workforce contributes only 10% to GDP. Therefore, modernizing and restructuring the economy should aim to create sustainable and productive activities in all sectors of the economy.

Valli and Saccone (2015) conducted a comparative study, analyzing the relationship between structural change, globalization, and economic growth in China and India, while also evaluating their impact on social issues and contributions to overall labor productivity. In both countries, especially China, there has been significant growth in labor productivity. While in India, although the rate of labor productivity growth is slower, a better balance has been achieved.

According to the research by Muhamed and colleagues (2015), many countries have achieved sustainable economic growth through the structural change of their economies. However, there are differences in the nature of this growth between developed and developing countries. Additionally, Muhamed and his colleagues also identified that in the past three decades, some countries have experienced high economic growth rates, particularly in terms of stable income growth, by continuously innovating their technology and changing the structure of their economies.

According to the research by Joseph and Peter (2016), structural change in economic sectors is crucial to maintaining stable economic growth in the Australian economy. They also argue that government policies related to labor have an impact on the structure of Australia's economic sectors.

Araujo and colleagues (2017) suggest that structural transformation is a strategy for economic growth in developing countries because it better disperses the positive effects of industrial productivity through the production chain, leading to higher value-added exports. Furthermore, countries that shift to producing goods with higher income elasticity of demand are less vulnerable to unpredictable changes in the international environment. The study also emphasizes the importance of producing industrial goods for export based on the actual needs of trading partners when it comes to structurally transforming production sectors.

3. Research Methodology

3.1. Model Specification

The main goal of this research is to conduct an empirical investigation into the potential influence of structural changes on economic growth. In this context, the model used is similar in its broad outlines to those employed by other researchers (such as Teixeira & Queirós, 2016, and Opoku & Yan, 2018). The model is structured as follows:

$$y_t = \alpha y_{t-1} + \beta_1 SC_t + \beta' X_t + \varepsilon_t \quad (1)$$

In the above expressions, subscripts like 't' denote the time (t = 1, 2, 3, …, T). y_t and y_{t-1} denote the current period per capita GDP and initial period per capita GDP respectively. SC stands for structural change which is our main variable. The symbol 'X' is a matrix of control variables (Domestic Investment, Government Expenditure, Trade Openness, and Inflation). Also, 'ε_{it}' is the usual error term. Alternatively, equation (1) can be written as follows:

$$y_t - y_{t-1} = \alpha y_{t-1} - y_{t-1} + \beta_1 SC_t + \beta' X_t + \varepsilon_t \quad (2)$$

$$Or: Growth = (\alpha - 1) y_{t-1} + \beta_1 SC_t + \beta' X_t + \varepsilon_t \quad (3)$$

$$Or: Growth = \beta_0 y_{t-1} + \beta_1 SC_t + \beta' X_t + \varepsilon_t \quad (4)$$

Where $\beta_0 = \alpha - 1$ is the convergence coefficient. Equation (4) is the baseline model for estimation.

3.2. Estimation techniques

This study employs time series data spanning from 2005 to 2022, encompassing information on the GDP growth rate, Structural change, Domestic Investment, Government Expenditure, Trade Openness, and Inflation. The data are extracted from the General Statistics Office and World Development Indicators.

Unit root test

Like many time series datasets, including GDP, expenditure, and price levels, which often display pronounced trends, these variables seem to be non-stationary at their base levels. However, their first differences exhibit stationarity. To ascertain the stationarity of the variables, or in simpler terms, to test for unit roots in the data under consideration, the augmented Dickey–Fuller (ADF) or Levin-Lin-Chu method, as proposed by Green (2003), is applied.

The Autoregressive Distributed Lag (ARDL) Model

In cases where series show the integration of varying orders, a combination of both level and first-difference stationarity, the appropriate cointegration test is the autoregressive distributed lag model (ARDL) introduced by Pesaran, Shin, and Smith (2001). This method is particularly well-suited for datasets with mixed orders, encompassing both I(0) and I(1) series, as it provides realistic and efficient estimates (Nkoro and Uko, 2016). An advantageous feature of this technique is its ability to accommodate lags in both the dependent and independent variables, thereby reducing the risk of endogeneity.

Moreover, the ARDL approach can be coupled with the Bounds test to assess whether a cointegration relationship exists among the variables. Cointegration signifies a long-term association between the variables, and the Bounds test plays a pivotal role in establishing this relationship. However, it is crucial to carefully select the optimal lag length for conducting the ARDL Bounds test.

Finally, the study conducts the ARDL Bounds test by testing the null hypothesis of no cointegration against the alternative hypothesis of cointegration. This test helps determine whether a long-run relationship exists among the variables under investigation. Transforming and specifying equation (4) in an ARDL form becomes:

$$\Delta Growth_t = \delta_0 + \sum_{i=1}^{p} \beta_{1ti} \Delta Growth_{t-1} + \sum_{i=1}^{q} \beta_{2ti} \Delta SC_{t-1} + \sum_{i=1}^{p} \beta'_{ti} \Delta X_{t-1} + \theta Growth_{t-1} + \alpha_1 SC_{t-1} + \alpha' X_{t-1} + \varepsilon_t \quad (5)$$

Where: p and q denote the maximum lag for the dependent and independent variables respectively; Δ indicates the difference operator; δ_0 represents the drift component. In equation (5), the long-run coefficients in the model are represented by α while the dynamic components with the β reflect the short-run.

The ARDL Bounds test of cointegration is employed to ascertain the presence of a long-run relationship. This is achieved by comparing the F-statistic with critical values, which serve as upper and lower bounds. A straightforward guideline dictates that if the F-statistic exceeds the critical value corresponding to the upper bound at a specified significance level, it signifies the existence of a long-run relationship. In such cases, the null hypothesis of no cointegration is rejected. Conversely, if the F-statistic falls below the critical value of the upper bound, it suggests the absence of cointegration and, consequently, no long-run relationship within the model.

When the F-statistic surpasses the critical value for the upper bound, we make an adjustment to equation (5) to create an error correction model, leading to the reparametrized ARDL model presented as follows:

$$\Delta Growth_t = \delta_0 + \sum_{i=1}^{p} \beta_{1ti} \Delta Growth_{t-1} + \sum_{i=1}^{q} \beta_{2ti} \Delta SC_{t-1} + \sum_{i=1}^{p} \beta'_{ti} \Delta X_{t-1} + \sigma ECT_{t-1} + \varepsilon_t \quad (6)$$

Where equation (6) shows a model in first difference that includes an error correction term (ECT). The ECT reflects the model's speed of adjustment for any short-run disequilibrium to the long-run.

4. Results

Unit root test

All the series analyzed in Table 1 were found to be stationary, with some achieving stationarity at their original level and others necessitating the first difference. The significance levels varied,

with certain series showing significance at 1 percent, 5 percent, or 10 percent levels.

Table 1. Unit Root Test

Variables	Level	First Difference
Growth	-4.5551***	
SC	-1.2334	-1.9891**
LGDPPC	2.2028	-1.4460*
Domestic Investment	-1.0247	-1.3633*
Government Expenditure	0.1345	-1.6013*
Trade Openness	-0.1749	-1.5870*
Inflation	-0.6881	-4.4607***

*Note: ***, ** and * indicates significance at the 1, 5 and 10 percent level of significance.*

Source: Author's computation using output from Stata

It was observed that the variable "Growth" exhibited stationarity at its original level, whereas SC, LGDPPC, Domestic Investment, Government Expenditure, Trade Openness and Inflation required differencing to achieve stationarity. These findings from the unit root test align with the utilization of an Autoregressive Distributed Lag (ARDL) model for estimation, as the ARDL model accommodates series with mixed orders of integration.

Optimal lag selection

In order to identify the optimal lag for the model, the study made use of lag order selection criteria. This particular step held significant importance since the utilization of inappropriate lag lengths could result in imprecise estimation outcomes. To address and rectify this potential issue, a lag length criteria assessment was introduced. In this research, the Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), Hannan-Quinn Information Criterion (HQ), and Final Prediction Error (FPE) were employed as lag length criteria. These criteria served the purpose of evaluating the adequacy and fit of various lag lengths.

By examining the results presented in Table 2, the lag length criteria indicated that lag 2 is the optimal lag to be used in the model.

Table 2: Optimal lag selection criteria

Lag	FPE	AIC	HQIC	SBIC
0	1.0e+12	47.4986	47.469	47.8181
1	-1.4e-09*	17.665	17.458	17.898
2	1.75e+05	-362.042	-362.456	-357.568
3	-2.47e-05	-376.151*	-376.565*	-371.677*
4	2.74e-08	-367.994	-368.408	-363.521

** Indicates lag order selected by the criterion*

Source: Author's computation

Cointegration bounds test

After establishing that the series displayed mixed orders of integration and were stationary, the ARDL bounds test for cointegration was applied to examine the presence of a long-term relationship among these series. The cointegration analysis outcomes are presented in Table 3 of this study. As per the results, the F-statistic (6.036) surpasses the upper bound, I(1), at a significance level of 1%. Consequently, this study confirms the existence of a long-term relationship among the variables.

Table 3: Bounds Test for Cointegration

Test statistics	Value	Significance level	I(0)	I(1)
F-Statistic	6.036	1%	3.79	4.87
K	6	5%	5.05	5.89
		10%	3.20	4.09

Source: Author's computation using output from Eviews 11

ARDL result presentation and analysis

The shift in economic sector structures has a positive impact on economic growth. This suggests that altering sector compositions leads to more efficient resource allocation, thereby fostering economic growth.

Besides, most of the chosen control variables align with their expected theoretical signs and exhibit significance. The lag of GDP per capita consistently displayed a negative and significant impact, indicative of conditional convergence among the countries, as suggested by Zulfiqar and Ain (2018).

The relationship between government expenditure and economic growth is a subject of uncertainty and debate in the literature, as noted by Nyasha and Odhiambo (2019). In the current analysis, it exhibited a negative effect, supporting the notion that it can lead to detrimental consequences for economic growth, including inefficiencies, distortions, and crowding-out

effects. The trade openness variable was found to be statistically insignificant. This outcome aligns with the findings of Keho (2017), who highlighted that the growth effects of trade openness vary depending on factors such as the sampled countries, dataset, period, and methodology. Therefore, this result may not be generalizable, considering the diverse group of sampled countries in this study.

Lastly, the inflation variable was found to be negative. This result runs counter to the a priori expectation that high prices have adverse effects on economic growth.

In summary, the structural change has had a substantial, positive impact on the GDP growth in recent years. This mutual reinforcement between the depth of transformation and economic growth underscores the study's key observations.

Table 4. ARDL Regression Based on AIC

Dependent Variable = Growth			
R-Squared = 0.6577			
	Growth	**Coef.**	**p-value**
LR	SC	0.0694*	0.089
	LGDPPC	-0.0302*	0.056
	Domestic Investment	0.0904	0.280
	Government Expenditure	-0.6178**	0.038
	Trade Openness	0.1055**	0.036
	Inflation	-0.2040***	0.000
SR	$Growth_{-1}$	0.5036*	0.098
	$d.SC_{-1}$	0.0129***	0.009
	$d.LGDPPC_{-1}$	-0.0076**	0.014
	$d.Domestic\ Investment_{-3}$	0.0394	0.794
	$d.Government\ Expenditure_{-1}$	-0.7980**	0.028
	$d.Trade\ Openness_{-2}$	0.0834**	0.057
	$d.Inflation_{-1}$	-0.2120***	0.000

Notes: LGDPPC is lag of the GDP per capita, SC is structural change measured by SSA method.

, **, * denote significance at 10%, 5% and 1% respectively.*

Source: Author's computation using output from Eviews 11

5. Conclusions and recommendations

5.1. Discussion

Firstly, the structural change has had a positive impact on economic growth. It has stimulated and improved labor productivity to drive economic growth in-depth, quality, and efficiency.

Secondly, the expansion of the economic scale has been continuous, with a growth rate exceeding the national average. However, the growth has been unstable and gradually decreasing. Key economic sectors that have developed rapidly have created new momentum for growth and economic structural transformation.

Thirdly, the economic sector's internal structure has changed positively and is of good quality. The internal structure of economic sectors has shifted positively and with various trends depending on each sector.

5.2. Policy Implications

Firstly, the economic sectors should be developed following the directions of:

(i) Promoting industrial development with high growth rates, creating development momentum for the entire economy. Enhance infrastructure investment and attract investments that effectively utilize industrial parks. Focus on investing in industries with potential advantages, such as processing agricultural and aquatic products, beverages, construction materials, and cement production, mineral and mineral processing, mineral water, natural gas, chemical fertilizers, mechanical and metal products, energy and electricity supply, water production and distribution, labor-intensive industries, and export-oriented production, etc. Emphasize the application of advanced, modern, clean, and energy-saving technologies in various industries.

(ii) Develop agriculture, forestry, and fisheries towards commodity production, intensive cultivation, using advanced and clean technologies, linked with processing industries, ensuring food security, and environmental conservation for sustainable development.

(iii) Take a significant leap in the business system and cooperative economy; develop trade, tourism, and services, increase contributions to the economy, create more jobs, and increase incomes for the population.

Secondly, develop human resources to drive economic structural change:

(i) Focus on labor restructuring in the economy. Restructure the labor force to emphasize the

development of industry and services, creating employment opportunities within the provincial economy.

(ii) Improve the quality of the labor force, with an emphasis on scientific, technical, and managerial training, a high-quality labor force, and skilled technical workers, capable of meeting the socio-economic development requirements of the province in the new period.

Thirdly, promote the development of science and technology and harness the achievements of the Fourth Industrial Revolution and the digital economy:

Enhance the development and application of science and technology, considering this a key factor for breakthroughs in productivity, product quality, contributing to the rapid process of structural transformation and promoting sustainable economic growth. The development of science and technology must be closely linked and effectively serve the socio-economic development of the province and meet the requirements of regional and international integration.

Fourthly, focus on building a synchronized infrastructure, developing a modern urban network, and creating a solid foundation for the next stage of development.

References:

Ahson, U., Siddiqi, M. W., & Mirza, F. (2017). Structural change and economic progress: Empirical evidence from selected Asian countries. Pakistan Journal of Social Sciences, 37(2), 549-565. http://pjss.bzu.edu.pk/website/journal/article/5ec615142b5c1/page

Aizenman, J., Lee, M., & Park, D. (2012). The relationship between structural change and inequality: a conceptual overview with special reference to developing Asia. Asian Development Bank. https://www.adb.org/sites/default/files/publication/156251/adbiwp396.pdf

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297. http://dx.doi.org/10.2139/ssrn.2175383

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The Review of Economic Studies, 58(2), 277. https://doi.org/10.2307/2297968

Arena, R. (2017). Modern structural economic dynamics in the short and the long run. Journal of the History of Economic Thought, 39(1), 101–123.

https://doi.org/10.1017/s105383721600105x

Barro, R. J. (1991). Economic growth in a cross section of countries. The Quarterly Journal of Economics, 106(2), 407. https://doi.org/10.2307/2937943

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87(1), 115-143.

https://doi.org/10.1016/s0304-4076(98)00009-8

Bond, S. R., Hoeffler, A., & Temple, J. (2001). GMM estimation of empirical growth models (No. 3048). CEPR Discussion Papers. https://ssrn.com/abstract=290522

Bound, J., Jaeger, D. A., & Baker, R. M. (1995). Problems with instrumental variables estimation when the correlation between the instruments and the endogenous explanatory variable is weak. Journal of the American Statistical Association, 90(430), 443-450. https://doi.org/10.1080/01621459.1995.10476536

Briones, R., & Felipe, J. (2013). Agriculture and structural transformation in developing Asia: review and outlook. Asian Development Bank Economics Working Paper Series No.

363. https://doi.org/10.2139/ssrn.2321525

Busse, M., Erdogan, C., & Mühlen, H. (2019). Structural transformation and its relevance for economic growth in Sub-Saharan Africa. Review of Development Economics, 23(1), 33-53. https://doi.org/10.1111/rode.12543

Carmignani, F., & Mandeville, T. (2014). Never been industrialized: a tale of African structural change. Structural Change and Economic Dynamics, 31, 124-137.

https://doi.org/10.1016/j.strueco.2014.09.002

Carraro, A. & Karfakis, P. (2018). Institutions, economic freedom, and structural transformation in 11 sub-Saharan African countries. FAO Agricultural Development Economics Working Paper 18-01. Rome, FAO. http://www.fao.org/publications/card/es/c/I8422EN/

Caselli, F., Esquivel, G., & Lefort, F. (1996). Reopening the convergence debate: a new look at cross-country growth empirics. Journal of Economic Growth, 1(3), 363-389.

https://doi.org/10.1007/bf00141044

Chenery, H. (1960). Patterns of industrial growth. The American Economic Review, 50(4), 624-654. http://www.jstor.org/stable/1812463

Olczyk, M., & Kordalska, A. (2018). Growth and structural changes in transition countries: the chicken or the egg? Journal of Business Economics and Management, 19(3), 544-

565. https://doi.org/10.3846/jbem.2018.6580

Opoku, E. E. O., & Yan, I. K. M. (2018). Industrialization as driver of sustainable economic growth in Africa. The Journal of International Trade & Economic Development, 1-27. https://doi.org/10.1080/09638199.2018.1483416

Padilla-Pérez, R., & Villarreal, F. G. (2017). Structural change and productivity growth in Mexico, 1990-2014. Structural Change and Economic Dynamics, 41, 53-63.

https://doi.org/10.1016/j.strueco.2017.02.002

Page, J. (2017). Structural transformation: it's not just manufacturing anymore. The Brookings Institution, G-24 Technical Working Group. https://www.g24.org/wpcontent/uploads/2017/04/1.-Page-Structural-Transformation-It%E2%80%99s-NotJust-Manufacturing-Anymore.pdf

Rodrik, D. (2014). the past, present, and future of economic growth. Challenge, 57(3), 5-39.https://doi.org/10.2753/0577-5132570301

Roodman, D. (2009). How to do Xtabond2: an introduction to difference and system GMM in Stata. The Stata Journal: Promoting Communications on Statistics and Stata, 9(1),

86-136. https://doi.org/10.1177/1536867x0900900106

Silva, E. G., & Teixeira, A. A. (2011). Does structure influence growth? a panel data econometric assessment of "relatively less developed" countries, 1979-2003.

Industrial and Corporate Change, 20(2), 457-510. https://doi.org/10.1093/icc/dtr003 Teixeira, A. A., & Queiros, A. S. (2016). Economic growth, human capital, and structural

change: a dynamic panel data analysis. Research Policy, 45(8), 1636-1648.

https://doi.org/10.1016/j.respol.2016.04.006

Timmer, M. P., & Szirmai, A. (2000). Productivity growth in Asian manufacturing: the structural bonus hypothesis examined. Structural Change and Economic Dynamics, 11(4), 371-392. https://doi.org/10.1016/s0954-349x(00)00023-0

Van-Neuss, L. (2019). The drivers of structural change. Journal of Economic Surveys, 33(1),309-349. https://doi.org/10.1111/joes.12266

Vu, K. M. (2017). Structural change and economic growth: empirical evidence and policy

insights from Asian economies. Structural Change and Economic Dynamics, 41, 64-77. https://doi.org/10.1016/j.strueco.2017.04.002

Zulfiqar, K. & Ain, Q. (2018). An analysis of income convergence across Asian countries.

Forman Journal of Economic Studies, 14, 125–141.

https://doi.org/10.32368/fjes.20181406.

Zulkhibri, M., Naiya, I., & Ghazal, R. (2015). Structural change and economic growth in selected emerging economies. International Journal of Development Issues, 14(2), 98-116. https://doi.org/10.1108/ijdi-09-2014-0064

EXPANDING SOCIAL INSURANCE COVERAGE TO CONTRACT INFORMAL WORKERS IN VIETNAM

PhD. Nguyen Thanh Thao* - Nguyen Tien Dung**

Abstract: ***Formal labor and informal labor are associated with the formal economic sector and the informal economic sector. The informal labor force is measured on the basis of criteria for social insurance participation and labor contracts. Expanding formal employment and labor will contract informal employment and labor. There is a movement between these two types of labor. If for some reason they do not meet the conditions of formal labor, these workers will move to informal labor. This article analyzes the situation of informal labor from the perspective of employment status; considers the size of this workforce in each employment position; finds out the main reasons that limit employees' participation in social insurance; Consequently, we propose a number of solutions to expand social insurance coverage to increase the size of formal workers and contract informal workers in Vietnam.***

• Keywords: *informal economy, informal labor, social insurance, position of labor.*

Date of receipt: 20th September, 2023
Date of delivery revision: 22th September, 2023
Date of receipt revision: 27th October, 2023
Date of approval: 01st December, 2023

Tóm tắt: *Lao động chính thức và lao động phi chính thức gắn liền với khu vực kinh tế chính thức và khu vực kinh tế phi chính thức. Lực lượng lao động phi chính thức được đo lường trên cơ sở các tiêu chí về tham gia bảo hiểm xã hội (BHXH) và hợp đồng lao động. Mở rộng việc làm và lao động chính thức sẽ thu hẹp việc làm và lao động phi chính thức. Hai loại lao động này có sự dịch chuyển qua nhau, nếu vì lý do nào đó không đáp ứng được điều kiện của lao động chính thức thì số lao động này sẽ chuyển sang lao động phi chính thức. Bài viết này phân tích tình trạng lao động phi chính thức trên giác độ của vị thế việc làm; xem xét quy mô lượng lao động này trong mỗi vị thế việc làm; tìm ra nguyên nhân chính hạn chế tham gia BHXH của người lao động; từ đó đưa ra một số giải pháp mở rộng diện bao phủ BHXH để gia tăng quy mô của lao động chính thức và thu hẹp lao động phi chính thức của Việt Nam.*

• Từ khóa: *kinh tế phi chính thức, lao động phi chính thức, BHXH, vị thế của lao động.*

1. Introduction

Socialist-oriented market economy in Vietnam includes diverse economic sectors: state economy, private economy, foreign invested economy; circular economy, sharing economy... The formal economic sector involves workers with labor contracts and the informal economic sector consists of freelance workers without labor contracts.

In a market economy, each type of market has different functions and roles. The labor market and the goods market have a close relationship with each other. The formal and informal economic sectors are closely related to the formal and informal labor market. Shifting resources from the informal economic sector to the formal sector will create investment opportunities, expand access to credit and aim at sustainable employment in the labor market. However, shifting labor in the direction of reducing informal labor and increasing formal labor requires changes in appropriate economic and financial management; In particular, the tool that has an important impact and influence on this transition process is social insurance. Therefore, this article focuses on in-depth research on informal workers, the status of different types of informal workers and social insurance solutions to increase formal workers and shrink informal workers in Vietnam.

2. Research approaches and methods

Research approaches: From criteria on informal labor related to social insurance and labor contracts; The article focuses on criteria for participating in social insurance based on the classification

** Academy of Finance; email: thanhthaonguyenntt@hvtc.edu.vn*
*** Thanh Cong branch - Joint Stock Commercial Bank for Foreign Trade of Vietnam, Hanoi; tiendungnguyen412@gmail.com*

of informal workers according to employment status in Vietnam. Based on the basic reasons limiting access to social insurance for Vietnamese workers, the article offers some solutions to expand social insurance coverage to increase the formal workforce and shrink informal workers to protect the legal rights and benefits of Vietnamese workers.

Research methods: based on the methodology of dialectical materialism and historical materialism, the article uses qualitative research method through the process of collecting secondary data from reliable sources of domestic and international research, combining statistical methods, synthesis, comparison and analysis to clarify research issues.

3. Literature review

Studies of the formal economic sector and the informal economy

Do Thien Anh Tuan, Nguyen Thai Hoa (2019), *Methods for classifying and measuring the size of the informal economic sector*, Fulbright School of Public Policy and Management, Vietnam Fulbringht University. The article mentions criteria for measuring the size of the informal economic sector, classifying the informal economic sector; Research on labor in the informal economic sector; Briefly assess the current status of the informal economy in Vietnam, trends and prospects of this economic sector.

Nguyen Cong Nghiep (2019), *Scale of the informal economic sector in Vietnam*, Hanoi University of Business and Technology. The book addresses the theory of the informal economic sector, the current economic status of the informal sector and some solutions to improve the economic efficiency of the informal economic sector in Vietnam.

ILO (2013), *Measuring Informality: A Guidebook to Statistics on the Informal Sector and Informal Labor*, the handbook covers criteria for classifying the informal sector, how to implement statistics on the size of the informal sector and informal labor.

ILO (2019), *Definition and measurement of informal labor*, the document provides information about the ILO's concept of informal labor based on the basic criteria of participating in social insurance and measuring informal labor of Vietnam according to the criteria of classifying workers into formal and informal economic sectors.

CIEM & ADB (2017), *Formalizing Household Businesses in Vietnam*, the report mentions how to classify Vietnam's Household Businesses, criteria for classifying business models and standardizing criteria for evaluating operating results of business households in the economy.

Studies on formal labor and informal labor

ILO (2021), *Informally employed workers in Vietnam: trends and impact factors*. The report evaluates Vietnam's informal labor over the past time, future trends and factors affecting informal labor and Vietnam's informal economic sector.

ILO & GSO (2018), *Report on informal labor in 2016*. The report points out the forms of informal labor in Vietnam and some policy solutions to narrow this type of labor.

Ministry of Labor, War Invalids and Social Affairs (2021), *Summary report on the implementation of the Social Insurance Law*. Report summarizes the situation of participation in compulsory and voluntary social insurance and health insurance of employees; At the same time, it shows that workers are not currently participating in social insurance in both the formal economic sector and the informal economic sector.

GSO (2021), 2021 *Economic Census - official results*, summary document of formal and informal economic sectors; workers participating in these economic sectors.

Le Duy Binh (2022), *Role, position, contribution of labor and informal employment in the socialist-oriented market economy*, Fourth Vietnam Economic Forum 2022. The article mentions definition and approach to employment and informal labor, analysis of the current situation of policies, informal labor by region and solutions to expand formal labor.

Nguyen Huu Dung (2022), *Proposal for labor and employment policy in the new context*, Vietnam Economic Forum 2022. The article presents the new context for labor and employment policy, evaluating the policy of labor and employment.

Pham Truong Giang (2022), *Solutions to expand social insurance coverage to contribute to sustainable development of the system according to Resolution No. 28/NQ/TW to meet the socio-economic development requirements of Vietnam*, Economic Forum Vietnam economy 2022. The

article discusses the current situation of social insurance coverage in the period 2016-2021 with mandatory and voluntary social insurance; Overall assessment of advantages and limitations in both aspects of policy and implementation; At the same time, propose a number of sustainable development solutions for social insurance coverage in the orientation of Resolution No. 28-NQ/TW for the period 2022-2030.

In summary: The above studies have partly analyzed and evaluated the situation of the formal and informal economic sectors; formal and informal workers; relationship between economic sector and labor market. This article focuses more deeply on research on informal labor, with the following contents: concepts of informal labor, criteria for classifying labor; especially criteria for employees' participation in social insurance; Consequently, we propose a number of solutions to expand social insurance coverage to increase formal workers and reduce informal workers in the labor market.

4. Research content and results

4.1. Some related concepts

An informal worker: "is a worker who does work that, according to law or in fact, is not protected by labor laws, does not have to pay income tax or does not enjoy social protection regimes and other working regimes" (Bui Sy Loi, 2022).

International labor statistics standards, informal employment includes all informal jobs in formal sector enterprises, informal sector production and business establishments or households. Thus, informal employment includes both jobs inside and outside the informal sector.

According to the ILO, informal employment "is employment without social insurance" (ILO, 2018).

Informal labor is closely linked to informal employment. According to the concept of the General Statistics Office: *Informal workers are those who work without social insurance and without a labor contract of 3 months or more* (GSO, 2016).

Looking at the overall labor market, there is mutual movement between formal and informal workers. The expansion of formal labor or employment will shrink informal labor. However, for some reason, if formal workers do not meet the criteria of formal workers, they will switch to informal workers. Thus, to reduce informal labor, formal labor must be expanded. It is necessary to provide conditions for workers in the informal sector to meet certain conditions for them to return to the formal sector, which means converting informal workers into formal workers.

4.2. The current situation of informal labor in Vietnam

4.2.1. Overview of informal workers according to social insurance payment criteria

If considering only the criteria of social insurance contributions (ILO, 2018), Vietnam's current informal workers are very diverse; The majority of these workers are currently in the informal economic sector, and some are in the formal economic sector. Informal workers in Vietnam have large differences in employment positions, economic and financial conditions, and professional capacity; requires that the policies set out to manage this workforce also have certain differences for each specific target group.

Table 1: Overview of Vietnamese workers who do and do not participate in social insurance in 2020 by job position (thousands of people)

Types of workers	Total	Participation in socical insurance		No participation in socical insurance	
		Number	Percentage (%)	Number	Percentage (%)
Workers receiving salaries from state budget	2.226	2.026	100%	0,0	0%
Workers in registered enterprises	14.700	12.642	86%	2.058	14%
Workers in Cooperatives	167	36,7	22%	130,3	78%
Workers in non-agricultural individual business households	8.684	434	5%	8.250	95%
Workers in agricultural and forestry business households	13.000	390	3%	12.610	97%
Qualified and skilled workers work on their own under a flexible mechanism	500	10	2%	490	98%
Laborers working abroad	650	7	1%	643	99%
Other freelance workers	8.380	168	2%	8.212	98%
Total	**48.361**	**15.959**	**33%**	**32.672**	**67%**

Source: General Statistics Office, Ministry of Labor, Invalids and Social Affairs, Social Insurance, 2021 Economic Census

From the perspective of participating in social insurance, by the end of 2020, Vietnam had about 16 million people participating in social insurance (33% of the total labor force). If calculated since the Social Insurance Law took effect on January 1,

2016, the number of people participating in social insurance has increased by about 3.76 million people with an average annual growth rate of 5.5% in the period 2016-2020 (Le Duy Binh, 2022).

Table 2: Number of people participating in social insurance by insurance payer (million people, %)

Criteria	Unit	2016	2017	2018	2019	2020
Participation in compulsory social insurance	Million people	12,85	13,59	14,45	15,20	14,839
Participation in voluntary social insurance	Million people	0,204	0,224	0,277	0,558	1,12
Percentage compared to labor force	%	0,43	0,47	0,57	1,14	2,34
Total number of people participating in social insurance	Million people	13,1	13,8	14,7	15,76	**15,959**
Percentage compared to labor force	%	27,37	28,68	30,25	32,10	33,26

Source: GSO, Vietnam Social Insurance

According to the characteristics of the social insurance payment: in 2020, there will be nearly 15 million people participating in Compulsory Social Insurance, accounting for 31% of the total employed labor force. Compared to the beginning of 2016, the number of people participating in social insurance has increased by about 2.8 million people, the average growth rate reached 4.5%/year.

Regarding the number of people participating in voluntary social insurance, the number tends to increase; In 2020, there was about 1.12 million people, an increase of 6 times compared to 2016, accounting for 2.34% of the total labor force, an average growth rate of 36%.

In terms of type of labor or job position, the rate of workers participating in social insurance in 2020 has a positive relationship; The highest rate of social insurance coverage belongs to workers on the payroll receiving salaries from the state budget at 100%, followed by workers in registered enterprises with 86%, followed by workers in cooperatives with 22% and finally the other self-employed group about 1%.

In general, the correlation between participation in social insurance and employment status is also consistent with legal regulations on social insurance. Currently, Vietnam only regulates compulsory social insurance for the first three types of workers: receive salary from the state budget, work in registered businesses and work in cooperatives, the remaining types are not regulated.

4.2.2. Current situation of informal workers in Vietnam by employment status

Informal workers in enterprises registered under the enterprise law

If considered according to the criteria of participating in social insurance, the formal economic sector still has a high number of informal workers. In 2020, about 2.1 million workers in the registered business sector do not participate in social insurance; This shows that the number of workers working at enterprises without labor contracts or social insurance is very high.

According to statistics from the GSO and the Ministry of Home Affairs in 2020, workers working at registered businesses are 14.7 million people, (of which: workers in state-owned enterprises are 1.108 million people), workers in FDI enterprises are 4.969 million people and workers in private enterprises are 8.623 million people). But the number of people participating in insurance is only 12.642 million people, so the number of people working in the registered business sector who do not participate in insurance is 2.058 million people, accounting for 14% of the total labor force registered to operate in business area. The statistical report summarizing the labor force of 100% state-owned enterprises all participate in compulsory social insurance, so the number of informal workers belonging to FDI enterprises and private enterprises is 14%.

Until December 31, 2020, the country had 684,300 operating enterprises with production and business results, attracting 14.7 million workers (GSO, 2021 economic census). However, according to the Ministry of Labor, Invalids and Social Affairs, the number of enterprises participating in compulsory social insurance in 2020 is 622,020 enterprises. This shows that the number of enterprises registered under the Enterprise Law whose business results do not participate in mandatory social insurance is 62,280 enterprises. If compared to data from the Ministry of Planning and Investment (2021), in 2020, 811,538 businesses generated revenue and tax obligations, the number of businesses that do not participate in mandatory social insurance is much higher (189,518 businesses).

Informal labor in cooperatives

According to the GSO's 2021 economic survey data, as of December 31, 2020, Vietnam had 15,300 operating cooperatives with production and business results, attracting 167,000 workers. The average number of employees in the period 2016-2020 is about 13 people/cooperative, 23.5% lower compared to the period 2011-2015. The labor structure of cooperatives by economic sector in 2020, agriculture, forestry, fishery and aquaculture accounts for 43.3%, industry and construction accounts for 21.8% and services accounts for 34.7%. By economic region, the labor structure is distributed as follows: Red River Delta 32.1%, Northern Midlands and Mountains areas 14.7%, North Central and Central Coast 23%, Central Highlands 3.2%, Southeast 13.4% and Mekong Delta River 13.6% (GSO, 2022).

According to the 2014 Law on Social Insurance effective in 2016, Article 2, Clause 3 stipulates: *"Employers participating in compulsory social insurance include: state agencies, public service entities, people's armed forces units; political organizations, socio-political organizations, socio-professional organizations, other social organizations; foreign agencies and international organizations operating in Vietnamese territory; Enterprises, cooperatives, individual business households, cooperative groups, other organizations and individuals that hire and use labor under labor contracts".* Thus, cooperative owners are also subject to compulsory social insurance if they hire or employ workers under labor contracts. Although there are only 167,000 workers working in cooperatives, the membership list of cooperatives is about 5.94 million people, showing that this is a potential workforce to participate in voluntary social insurance.

According to the Social Insurance Law, cooperatives are official economic establishments subject to compulsory social insurance participation; However, currently, not participating in social insurance or not participating fully is a common situation. In some provinces/cities, the number of cooperatives registered to participate in compulsory social insurance and health insurance for employees is still low. For example, in Thanh Hoa province in the period 2016-2020, the average number of newly established cooperatives each year is 59 units, but the number of cooperatives participating in paying social insurance for workers is only 40% (Le Duy Binh, 2022).

Members of cooperatives are encouraged by the state to participate in voluntary social insurance and there needs to be a solution for cooperatives to fully fulfill their obligations to pay social insurance for employees in order to reduce informal labor in the concentrated economic sector.

Informal workers in non-agricultural individual business households

Conditions to become a business household, according to Decree 01/2021/NQQ-CP are: "A business household can be established by an individual or members of the household. Business households are registered at the district business registration agency (Finance and Planning Department under the district People's Committee). Business households do not have legal status.

According to the 2021 economic census (GSO, 2021), in 2020 the country had about 5.2 million individual non-agricultural, forestry and fishery production and business establishments, an increase of 290,500 establishments (+5.9%) compared to 2016, an average annual increase of 1.4% in the 2016-2020 period, lower than the 2011-2015 period of 3%/year and the 2006-2010 period of 4.4%/year.

Statistics show that the total number of employees in individual business households is 8.7 million people. However, currently up to 70% of individual businesses do not register their business, do not register for taxes and do not participate in voluntary social insurance. According to the General Department of Taxation (2021), there are 1.7 million individual business households that pay taxes, with a total number of attracted workers of 5.2 million people, but do not participate in social insurance. This figure shows that: the economic sector of individual business households contributes over 30% of the country's GDP with a total number of employees participating in activities of up to 8.7 million people (18% of the total workforce), but not participating in social insurance, this confirms that all of these workers are informal workers.

Informal workers belonging to agricultural, forestry and fishery production households

In Vietnam, in agricultural, forestry and fishery production, the household is the basic

economic unit. In 2020, there will be over 9.1 million households nationwide; Of these, 20,611 households have developed large-scale farms and regularly employ many workers.

The total number of workers active in production and business in households in 2020 is about 13 million people. These workers almost do not participate in compulsory social insurance, the number participating in voluntary social insurance is not large, only about 3%.

Informal labor for workers working abroad

According to a report by the Department of Overseas Labor Management of the Ministry of Labor, War Invalids and Social Affairs, by the end of 2020, Vietnam had about 700,000 people working in over 40 countries and territories in more than 30 groups of different professions and fields.

Data reported by Vietnam Social Insurance shows that the number of people working abroad currently participating in compulsory social insurance is only about 9,000 people (1.3% of the total number of people working abroad). Thus, according to the criteria for paying social insurance, 98.7% of people working abroad are classified as informal workers. Because the number of workers working abroad participating in compulsory social insurance is still too low; Therefore, for the period 2015-2020, the average annual growth rate reached 27%/year but the total social insurance revenue for these subjects was not high. However, this is an important potential source of revenue that Vietnam Social Insurance needs to pay attention to.

Informal workers with qualifications and skills work on their own under a flexible mechanism

Industrial Revolution 4.0 promotes the rapid development of the digital economy, with the emergence of many new business models that facilitate the development of a labor market with high skills and self-employment based on the economy. technology platforms such as: *"consultants, designers, architects, individuals providing intellectual services, artisans, engineers, skilled workers, singers, artists..."* . They do not work on the basis of long-term labor contracts, they may or may not register for a tax code. However, up to now there have been almost no reports on social insurance participation of this group of workers. The digitalization process through technological innovation, digital transformation and supply chain diversification, digital labor platforms have created new job opportunities. Currently, Vietnam has hundreds of thousands of people working in this environment such as: driving technology vehicles, delivering goods...; generate income on digital platforms such as; Youtube, Tiktok, sales. Based on Facebook, Zalo... platform; work for partners on online platforms; online business on e-commerce sites... survey results show that the number of self-employed workers on digital platforms in Vietnam in the next decade could reach about 2 million people.

The problem is that self-employed workers on this digital technology platform are business individuals who do not have a labor relationship with technology companies; They are self-employed workers or business partners in the online work environment. They generate significant income but most do not participate in social insurance or fulfill tax obligations. Currently, this workforce in Vietnam is about 500,000 people, but up to 98% of this type of workforce does not participate in social insurance and they are informal workers.

Other freelance workers

Self-employed workers with low professional qualifications (freelance workers in occupations such as construction, food and beverage sales, small self-employment, domestic workers , cleaning the apartment...). Currently, the number of workers of this type is about 8,380 million people, the majority of whom do not participate in social insurance (98%); accounts for a very large proportion of informal workers in Vietnam, about 25.1% of the total number of informal workers.

This type of worker is characterized by low or unstable income, so they need to be supported by the state to access social insurance.

4.3. Causes of limitations in accessing social insurance for Vietnamese workers

For the officially registered business sector according to law, especially private enterprises and FDI enterprises, the problem here is the situation of not participating in social insurance for employees, not fully participating in paying compulsory social insurance for all employees. The main reason is a gap in management and failure to strictly implement the Social Insurance Law.

For the cooperative sector: Low income, unstable employment, cooperative owners are

uncertain about legal policies, especially policies on social insurance, health insurance, and unemployment insurance. The main reason is the difficulty in the cooperative's operations with a high number of elderly people working, unstable income and their unwillingness to participate in social insurance according to regulations. Laborers often work short-term jobs and are paid daily; Signing labor according to oral contracts, avoiding participation and not fully implementing rights for employees due to incorrect awareness of the owner.

For non-agricultural individual business households: these business households are mainly small and micro businesses, low income, operating for the purpose of making a living. On the other hand, there are many business households that do not have business registration or tax codes. Currently, many regulations on tax rates, procedures, and processes for this type of business are often imposed by regulations for large enterprises, so they are not suitable for small and micro enterprises; Therefore, business owners do not want to participate in social insurance for their employees.

For agricultural, forestry, and fishery production and business households: Vietnam has many small business and production households in the agricultural, forestry, and fishery sectors whose income is low and unstable. The main reason here is that they do not receive timely support from the Government and their awareness is incomplete about participating in voluntary social insurance. Therefore, there is a need for state support in implementing voluntary social insurance participation.

For workers working abroad: income for this type of worker is not the main obstacle for them to become official workers in the labor market. The main reason here is probably the awareness of workers and the labor management organization of competent agencies.

For freelance workers with high professional qualifications operating on technology platforms: this type of worker, for many people, is not an obstacle to participating in social insurance; The main reason here is that their awareness in implementing the law needs to be paid more attention; Currently, tax management measures for this group of workers need to be combined with social insurance management.

For other self-employed workers: the main reason why informal workers account for most of this type of worker is their low income and awareness and understanding about the benefits of participating in social insurance.

4.4. Some solutions to expand social insurance coverage to reduce informal labor in Vietnam

Firstly, compulsory social insurance.

- Currently, the number of workers participating in compulsory social insurance is only about 31% of the total workforce in the country. In the orientation of Resolution 28-NQ/TW issued on May 23, 2018 of the 12th Party Central Committee on social insurance policy reform with the goal of universal coverage. Orientation to complete the rate of social insurance participation coverage compared to the labor force in the age group is 45% in 2025, 60% in 2030, the number of people receiving pension is about 55% in 2025 and 60% in 2030. Therefore, adding subjects to participate in compulsory social insurance for all employees who have jobs, income and wages and will initially apply to subjects falling under Clause 3, Article 2 of the 2014 Law on Social Insurance. Especially propose to include the following subjects: individual business household owners, business managers, and non-salary cooperative managers; Amending and supplementing the Law on Social Insurance specifically regulates the implementation of compulsory social insurance collection for employees working non-full time.

- Strengthen and further enhance the responsibility of the social insurance management agency and related agencies in identifying and managing all subjects eligible to participate in compulsory social insurance according to regulations. One of the important reasons for the development of compulsory social insurance participants in Vietnam in recent times is the responsibility of the management agency in identifying and fully managing social insurance participants. Coordinate data sharing between the Tax agency, the Ministry of Planning and Investment, the Ministry of Home Affairs and the social insurance agency to closely and promptly manage issues related to employees' income and wages to receive benefits represented and managed in the social insurance database.

- Research and complete legal regulations on subjects participating in social insurance, health

insurance, unemployment insurance, and insurance for labor accidents and occupational diseases. Adding subjects participating in compulsory social insurance, health insurance, and unemployment insurance not linked to labor contracts in the orientation of the ILO.

- Complete the legal regulations on social insurance, health insurance, unemployment insurance and salaries with the following contents: stipulating a specific list of salary allowances and other related supplements as a basis for calculating social insurance and health insurance contributions, compulsory unemployment insurance.

- Amend a number of contents related to one-time social insurance beneficiaries; Specifying some terms such as "other tricks" in the Penal Code (Article 216) are actions for management agencies to properly deploy during the implementation process. Additional specialized inspection functions in the field of payment and settlement of social insurance, health insurance, and unemployment insurance regimes for employees.

- For Vietnamese workers working abroad: currently only 1.3% of Vietnamese workers working abroad participate in social insurance, a number too small compared to its potential. To manage these workers well, in the coming time, it is necessary to amend and supplement the Social Insurance Law in the direction of assigning businesses and public service entities sending people to work abroad the responsibility of: collecting documents, collecting social insurance contributions from employees so that they can register with the social insurance agency on behalf of the employee and pay into the social insurance fund.

Second, voluntary social insurance.

The report summarizing the implementation of the 2014 Social Insurance Law, Resolution 28-NQ/TW, pointed out that the basic reason why workers in the informal economic sector have not actively participated in voluntary social insurance is due to short-term they do not realize their rights. Most of them only see the act of paying money monthly and for quite a long time, up to 20 years. Therefore, it is necessary to quickly add immediate benefits to them, such as:

- Reduce the conditions on the number of years of social insurance payment to receive monthly pension. Clearly stipulate the roadmap to reduce the conditions for the number of years of social insurance payment from 20 years to 15 years and possibly down to 10 years, thereby creating conditions for employees aged 45-50 years to participate in social insurance to have the opportunity to receive a monthly pension.

- Financial support to ensure social security for workers within the ability to balance the state budget. Currently, there is a big difference in the rate of social insurance contributions paid by employers from the salary fund to the retirement and death fund. In the formal economic sector, most workers only have to pay 8% of their salary, the remaining 18% is paid by the employer. Meanwhile, informal workers have to pay 22% of their income into the retirement and death benefit fund. Low and unstable income is the main reason for the ability to pay voluntary social insurance.

- Supplementing maternity benefits for participants in voluntary social insurance to help improve birth rates and balanced development policies for children, as well as promote the process of converting workers from the informal sector to the formal sector.

- Additional regulations for groups of formal workers who have not yet reached retirement age when converting jobs to the informal sector (sharing economy, freelance economy) must be transferred to social insurance until they reach retirement age.

Third, some other solutions

- With the goal of building a digital government, digital economy, and digital society, Vietnam Social Security needs to strengthen the application of information technology and complete the construction of a digital database to improve efficiency in managing participants of social insurance.

- Strengthen inspection, examination and handling of violations in social insurance management to ensure the strictness of the law. Coordinate with relevant agencies in handling violations of the rights of employees participating in social insurance, health insurance, and unemployment insurance.

- Reform aims to simplify administrative procedures, reduce management costs, thereby creating trust for people and workers in the Vietnam social insurance system.

- Propagate to raise awareness of people and workers so they understand the rights, benefits, and responsibilities of social insurance, health insurance, and unemployment insurance policies for social security, social order, safety, and security. politics to create consensus and unity in awareness and implementation of social insurance policy, thereby developing social insurance participants to shift labor from the informal economic sector to the formal economic sector.

5. Conclusion

Transforming informal workers into formal workers is concerned not only with moving them into the formal economic sector, but also ensuring that informal workers meet the criteria of formal workers, which is to participate in social insurance and workers' rights are protected and no requirements are placed on labor relations through labor contracts; Thus, it is necessary to increase formal labor in the informal economic sector. The article summarizes the situation of informal workers in Vietnam according to the criteria for paying social insurance, the situation of informal workers in Vietnam according to employment status, and then offers some solutions to expand Social insurance coverage which aims to transition the labor force from informal to formal labor. However, the article also confirms that informal workers exist even in the formal economic sector. Therefore, there needs to be a solution to expand social insurance coverage for both compulsory and voluntary social insurance to increase formal employment in the informal economic sector. Another issue to contract informal labor, perhaps Vietnam should also agree on the ILO's concept of determining informal labor, which is not to use the criterion of having a labor contract.

In summary: through the article, we can agree on the following statements:

Firstly, the existence and role of the informal sector in the economy is objectively inevitable. There should be a policy recognizing the legal existence of this area.

Second, through improving social insurance services to reduce the proportion of the informal sector.

Third, there needs to be appropriate education and training policies to improve workers' skills, increase labor productivity, and create long-term working conditions in the formal sector.

Fourth, the labor market has many segments, it is necessary to pay due attention to informal workers, creating conditions for them to participate in the ability to add common value. And have policies to support disadvantaged workers in the market.

Fifth, it is necessary to build a data system on the informal economy and informal labor; This database must be linked from central to local and between ministries and branches; have a system of indicators, monitoring and evaluation and serving the state's macro policy planning process.

References:

Vu Dinh Anh (2019), Research on labor scale in the informal economic sector in Vietnam, financial magazine, issue 1, August 2019.

Le Duy Binh (2022), Role, position, contribution of labor and informal employment in Vietnam's socialist-oriented market economy, Fourth Vietnam Economic Forum, 2022.

Ministry of Planning and Investment (2021), reporting the number of registered businesses.

Ministry of Labor, War Invalids and Social Affairs (2016-2020), National Program on Labor Protection and Occupational Safety for the period 2011-2015 and period 2016-2020, Hanoi.

Labor Code No. 45/2019/QH14, November 20, 2019.

https://www.gso.gov.vn/du-lieu-va-so-lieu-thong-ke/2021/10/thong-cao-bao-chi-tinh-hinh-lao-dong-viec-lam-quy-3 và-9-thang-nam-2021/.

https://vnexpress.net/nha-may-gap-kho-khi-dua-lao-dong-tro-lai-4375591.html.

https://baomoi.com/ho-tro-on-dinh-thi-truong-lao-dong-trong-boi-canh-dai-dich-covid-19/c/40914928.epi.

ILO & GSO (2018), informal labor report 2016.

Economica Vietnam (2013), Non-agricultural Household Business Sector in Vietnam.

ILO (2021), Informally employed workers in Vietnam: trends and influencing factors.

Proceedings of the scientific conference (2022), thematic report serving the summary of Resolution 26-NQ/TW on agriculture, farmers, and rural areas, Publishing House of the Academy of Agriculture.

Pham Thu Lan (2021), Organizations representing and protecting the rights of informal workers: practice in Vietnam and international experience, ILO 2021.

Employment Law No. 38/2013/QH13 dated November 16, 2013.

Law on Vocational Education No. 74/2014/QH13 dated November 27, 2014.

Law on Social Insurance No. 58/1014/QH13 dated November 20, 2014

Law on Vietnamese workers working abroad according to Contract No. 69/2020/QH14 dated November 13, 2020.

Law on occupational safety No. 84/2015/QH13 dated June 25, 2015.

Nguyen Cong Nghiep (2019), Scale of the informal economic sector in Vietnam, Hanoi University of Business and Technology.

Resolution 28-NQ/TW on social insurance policy reform, issued on May 23, 2018, 7th Conference of the 12th Party Central Committee.

Resolution No. 116/NQ-CP dated April 9, 2020 on measures to support employees and employers affected by the covid-19 pandemic from the unemployment insurance fund.

Decision No. 28/2021/QD-TTg of the Prime Minister dated July 7, 2021, Regulations on the implementation of policies to support employees and employers affected by the covid-19 pandemic from the unemployment insurance fund.

GSO (2022), Economic Census 2021 - official results, NXBTK 2022

General Department of Taxation (2021), Report on non-agricultural enterprises and individual households paying taxes.

Do Thien Anh Tuan, Nguyen Thai Hoa (2019), Method for classifying and measuring the size of the informal economic sector, Fulbright School of Public Policy and Management, Fulbringht University of Vietnam.

VCCI (2021), report on survey results on the impact of the covid-19 pandemic on employment in enterprises, Hanoi.

Dao Quang Vinh (2021), Current situation and policies for informal workers in Vietnam, ILO 2021.

THE ROLE OF GREEN HUMAN RESOURCE MANAGEMENT, GREEN SOCIAL AWARENESS AND GREEN SOCIAL BEHAVIOR IN ACHIEVING SUSTAINABLE DEVELOPMENT: EVIDENCE FROM VIETNAMESE EXPORTERS

Assoc.Prof.PhD. Pham Hung Cuong* - MA. Ngo Thi Lan Oanh*

Abstract: ***Green management and practices have emerged as an essential concept within organizational management, and organizations aim to adopt new green strategies to foster development. Through an investigation the analysis was 250 employees who provide services in export organizations in Vietnam in October 2022, the present study identified three critical factors: (1) Green human resource management (GHR); (2) Green social awareness (GSA); (3) Green social behavior (GSB), that can impact sustainable development in the context of the export industry in Vietnam. In addition, the underlying mechanism through which these identified variables influence sustainable development was evaluated using the mediating role of green commitment (GC). The moderating role of green knowledge sharing (GKS) was empirically tested in the relationship between the independent variables and GC.***

• Keywords: *green human resource management, green social awareness, green social behavior, green knowledge sharing, green commitment, sustainable development.*

Date of receipt: 21th August, 2023

Date of delivery revision: 22th August, 2023

Date of receipt revision: 25th September, 2023

Date of approval: 01st November, 2023

Tóm tắt: *Quản lý và thực hành xanh đã nổi lên như một khái niệm thiết yếu trong quản lý tổ chức và các tổ chức hướng tới việc áp dụng các chiến lược xanh mới để thúc đẩy sự phát triển. Thông qua một cuộc điều tra, phân tích 250 nhân viên cung cấp dịch vụ trong các tổ chức xuất khẩu tại Việt Nam vào tháng 10 năm 2022, nghiên cứu này đã xác định ba yếu tố quan trọng: (1) Quản lý nguồn nhân lực xanh; (2) Nhận thức xã hội xanh; (3) Hành vi xã hội xanh, có thể tác động đến sự phát triển bền vững trong bối cảnh ngành xuất khẩu ở Việt Nam. Ngoài ra, cơ chế cơ bản mà qua đó các biến được xác định này ảnh hưởng đến phát triển bền vững đã được đánh giá bằng cách sử dụng vai trò trung gian của cam kết xanh. Vai trò điều tiết của việc chia sẻ kiến thức xanh đã được thử nghiệm thực nghiệm trong mối quan hệ giữa các biến độc lập và cam kết xanh.*

• Từ khóa: *quản lý nguồn nhân lực xanh, nhận thức xã hội xanh, hành vi xã hội xanh, chia sẻ kiến thức xanh, cam kết xanh, phát triển bền vững.*

Introduction

In response to the issue of environmental deterioration in Vietnam, an increasing number of companies have begun integrating environmental management procedures into their business plans and executing green diversification of product strategies (Le Van et al., 2019). Many businesses implement green human resource management practices in response to urgent environmental issues. This "green transformation" will be made possible in large part by the financial sector. In Volz (2018)'s study, the significance of including environmental factors in the financial system is examined, and the function of financial governance is emphasized. It looks at how green lending and investment are doing in Asia, gives a rundown of initiatives for green financial governance, and identifies market innovations for green finance. The study also emphasizes financial policies, investment roadblocks, and priority areas that policymakers should concentrate on. Pursuing sustainable development has become a global imperative in response to environmental challenges.

Vietnamese exporters are beginning to realize how important it is to integrate green practices into their daily operations. However, a thorough understanding of the contribution of green human resource management, green social awareness, and green social behavior to achieving sustainable

** Foreign Trade University, Ho Chi Minh City Campus*

development in this context. The moderating and mediating effects of sharing green knowledge on these relationships have yet to be sufficiently investigated. The need to investigate the interactions between green human resource management, green social awareness, green social behavior, green commitment, and green knowledge sharing, as well as their combined effects on sustainable development among Vietnamese exporters. Therefore, this study examines the combined impact of green social awareness, human resource management, and social behavior on sustainable development by considering the moderation of green knowledge sharing and mediation of green commitment in the context of Vietnamese exporters.

Review of literature

Businesses must develop conditional mechanisms to meet the worldwide standard for conservation and preservation. Green HRM is rapidly expanding as an organizational discipline. An effective environmental management strategy can be achieved by incorporating natural locations and practices into a company's primary development goals (Ali et al., 2020). Green HRM adopts a sustainable approach and seeks to establish a green workplace that motivates employees to carry out their duties in the most sustainable manner possible (Kuo et al., 2022). Green behavior is in favor of the environment. Their mindset, faith, and, ultimately, behavior will be shaped by their understanding of the surroundings causing the desired behavior (Handayani et al., 2021). Personal environmental awareness and sustainable behavior are causally related. A person who upholds strong environmental principles will likely be conscious of how their behaviors impact their surroundings. This demonstrates how being conscious of the environment encourages pro-environmental behavior (Mkumbachi et al., 2020). Due to the potential for a competitive edge, sustainable advertising has become one of the marketing professionals' top focus areas (Lal and Hareez, 2021).

The willingness of consumers to pay for sustainable goods is directly impacted by their awareness of the environment, which is also linked to green purchasing behaviors (Ayodele et al., 2017). The concept of worker-green behavior is becoming more interesting to academics and practitioners in this setting (Katz et al., 2022). People exhibit green self-efficacy concerning that and subsequent green behavior, which refers to one's capacity to meet environmental objectives. There is sufficient research to back up the idea that GHR has a major impact on employees' green behavior (Salau et al., 2020). The authors claim that by incorporating green components and making clear green tasks in all areas of HRM, including hiring, performance evaluations, and rewards, while embracing GHR activities, organizations can encourage green personnel behavior (Chen et al., 2021).

People's behavior patterns are also influenced by societal variables or social dynamics (Babutsidze and Chai, 2018). Discussions about environmental concerns, knowledge sharing, and encouraging one another to carry their fair portion of the load are helpful (Kim et al., 2017). SD is a method of development that makes use of natural assets in a manner that ensures their continued existence for future generations. Social advancement, environmental balance, and economic expansion are the three goals of SD (Zhai and Chang, 2018). This supports the claim that equity across generations, which acknowledges both the immediate and long-term effects of sustainability and SD, is inherent in SD (Mensah, 2019). The term "SD" is broadly defined according to all factors considered. Policymakers and scholars have focused on SD for four primary reasons. Since the purpose of all other objectives for development is to reach an extent of prosperity that is ecologically sound, SD is regarded as a comprehensive developmental goal. SD is anticipated to benefit the natural world and every one long term based on socioeconomic status (Ozili, 2022).

Green human resource management positively influences organizations' sustainability in developed and developing countries because HRM is a big management source. Moreover, sustainability has been promoted as a key concept capable of responding to global changes (Bombiak and Marciniuk-Kluska, 2018). According to research (Pocztowski, 2016), green human resource management is the key to effectively managing the environment, as it is crucial for sustainable human resource management (Bombiak and Marciniuk-Kluska, 2018). Social awareness about the environment of different business firms is necessary to research as it promotes the understanding of the environment and positively impacts sustainable

development. Moreover, socially aware companies focus on something other than profit rather focus on developing their business in an eco-friendly manner to make the environment safe, promoting a healthy lifestyle for the planet. During the past three decades, environmental awareness has become a major concern for developed countries (Chen & Chai, 2010).

During this period, the manufacturers have enhanced the production of green and eco-friendly products (Naderi and Van Steenburg, 2018). Therefore, green social awareness is a crucial variable to be studied. Sustainability is the main requirement of organizations in this modern era. That is why various organizations today have shifted to sustainable practices and ensure that the employees working under them promote sustainable behavior, also known as green social behavior. Sustainable development (SD) is necessary for organizations as the depletion of natural resources will be proven as a backlash for the organization's success, so, to achieve competency, the GSB of the personnel is a crucial element as it significantly and positively impacts the development of the enterprises. According to research (DuBois and Dubois, 2012), green employee behavior is one of the most notable factors that promotes the organization's environmental performance and successfully achieves sustainability targets or goals.

Green knowledge sharing (GKS) has been characterized as a significant moderator to ensure the achievement of sustainability for the organization by promoting a sustainable environment within the workplace. Recent research (Ooi, 2014) has illustrated that corporate staff of companies has identified knowledge as a significant tool for achieving competitiveness and success (Shahzad et al., 2020). In addition, knowledge is shared and used to gain competency and customer satisfaction (Mothe et al., 2018). Knowledge-based organizations make a fundamental market part by having a large and considerable share (Abili, 2011). The perception of knowledge shares that knowledge is the main cause of creating organizational worth, and this value creation chiefly depends on the capability of the company to share and collect knowledge (Zhou and Li, 2012). Knowledge sharing is a practice through which knowledge is split into several forms between individuals, groups, and organizations. Research (McAdam et al., 2012) has elaborated that knowledge sharing aims to collect knowledge, contribute to the exchange of knowledge, and apply the knowledge to achieve the organizational outcome (Allameh, 2018).

Green commitment is considerably mediating in promoting the influence of green HRM, green social behavior, green social awareness, and sustainable development. Green commitment may be defined as the intention of the employees to prove themselves beneficial to the organization by developing sustainable behavioral attributes. This green behavior is the key to the organization's sustainable development. Employees who are committed to their work and focus on achieving the goals and objectives based on the company's sustainability are key assets for the firm. From the perspective of research (Sharma et al., 2021) based on employees' commitment, it has been illustrated that the innovations and the altered initiatives thus chosen by the employees at a workplace are based on their commitment and consistency toward their work. Green commitment (GC) is the outcome of Green HRM practices of the employees where the employees' attitude, organizational values and norms, and the employees' efforts are meant to develop a sustainable environmental performance within the company (Pham et al., 2020). Therefore, the researcher has focused on studying the role of green commitment between green human resource management and sustainable development.

Research methodology

Data Collection: Different perspectives on the size and number of samples should be utilized in quantitative research. The appropriate sample size is necessary for the study's validity. This study uses the sampling formula of linear regression. Related to the formula, the number of observed 25 items, and each item is rated by 10 respondents by this formula, a total of 250 employees who provide services in export organizations in Vietnam. The questionnaire was distributed to respondents in October 2023 to collect their responses, and the time limit to collect responses was four weeks. Respondents with working experience in targeted export organizations in Vietnam were preferred.

The development of the survey after the successful formulation of the questionnaire is dispersed online to the group of respondents. In this accordance, the survey was developed at Google Forums and distributed to respondents via e-mail. The e-mail

list was gained from the management of the export industry in Vietnam. A day before the distribution of the survey, a consent form was sent to managerial authorities and respondents, which illustrated the objectives and purposes of the study for them. The motive behind the consent form is to gain respondents' permission and approval to participate.

Result and discussion

Cronbach's alpha reliability

The researcher used Cronbach's Alpha to establish the consistency of variables. The criteria stipulate that the value for Cronbach's Alpha must be above 0.7. Moreover, the correct item-total correlation must not be less than the value of 0.3. The result in Table 1 shows that all the items of GHR were above the threshold of 0.3; hence, no items were removed (Table 1).

Table 1. Cronbach's alpha of green HRM

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
GHR1	17.00	23.269	.921	.899
GHR2	17.07	24.244	.834	.911
GHR3	17.16	24.853	.773	.919
GHR4	17.19	25.326	.742	.923
GHR5	17.16	25.045	.762	.921
GHR6	17.11	25.409	.733	.924

Source: Compilation of authors.

For GSA, it can be seen that all four items satisfied the corrected-item total correlation criteria; similarly, Cronbach's alpha values were above the threshold of 0.7 (Table 2).

Table 2. Cronbach's alpha of green social awareness

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
GSA1	10.62	12.084	.935	.995
GSA2	10.54	11.880	.983	.983
GSA3	10.53	11.905	.980	.984
GSA4	10.54	11.791	.990	.981

Source: Compilation of authors.

The Cronbach's Alpha values for each item of GSB. With a corrected-item total correlation above 0.8, the specified criteria were achieved (Table 3).

Table 3. Cronbach's alpha of green social behavior

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
GSB1	6.86	6.212	.851	.921
GSB2	6.93	5.810	.882	.897
GSB3	6.90	5.902	.873	.904

Source: Compilation of authors.

Similarly, the result for GKS showed that four items out of five exceeded the threshold value of 0.3. Item GKS4 was removed from the scale due to a low corrected item-total correlation (Table 4).

Table 4. Cronbach's alpha of green knowledge-sharing

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
GKS1	10.85	8.496	.646	.753
GKS2	10.88	8.272	.655	.747
GKS3	10.76	8.518	.587	.781
GKS5	10.74	8.621	.621	.764

Source: Compilation of authors.

All items of GC were satisfactory as per the corrected-item total correlation and Cronbach's Alpha criteria (Table 5).

Table 5. Cronbach's alpha of green commitment

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
GC1	10.94	12.591	.867	.934
GC2	10.92	12.572	.894	.926
GC3	10.91	12.510	.908	.921
GC4	10.96	12.990	.829	.945

Source: Compilation of authors.

All three items of SD were found to be satisfactory as the corrected-item total correlation was ≥ 0.3, and Cronbach's Alpha values were ≥ 0.7 (Table 6).

Table 6. Cronbach's alpha of sustainable development

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
SD1	6.86	6.439	.932	.961
SD2	6.85	6.322	.947	.950
SD3	6.85	6.362	.934	.960

Source: Compilation of authors.

The variables were reliable as Cronbach's Alpha value for each variable exceeded 0.7 (Table 7).

Table 7. Cronbach's alpha

VAR	Number of items	Cronbach's alpha
GHR	6	0.930
GSA	4	0.989
GSB	3	.937
GKS	5	.895
GC	4	.948
SD	3	.971

Source: Compilation of authors.

GHR = Green HRM, GSA = Green social awareness, GSB = Green social behavior, GKS = Green knowledge-sharing, GC = Green commitment, SD = Sustainable Development

EFA analysis

According to the criteria, values exceeding 0.6 are acceptable, whereas values exceeding 0.9 are considered excellent. The table value verified that the sample is adequate, with a value of 0.914. Bartlett's test was conducted to determine whether enough correlations were present in the data for factor analysis. The results confirmed that the data possessed sufficient correlations as $p < 0.05$ (Table 8).

Table 8. Kmo and bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	6659.777
	df	300
	Sig.	.000

Source: Compilation of authors.

The researcher ensured that the factor loadings were higher than 0.4 and there was an absence of cross-loadings. A total of six factors were identified, and no cross-loadings were found. Furthermore, the factor loadings exceeded the specified threshold of 0.4 (Table 9)

Table 9. Rotated component matrix

	Component					
	1	2	3	4	5	6
GHR1	.775					
GHR2	.814					
GHR3	.785					
GHR4	.731					
GHR5	.739					
GHR6	.730					
SD1				.860		
SD2				.740		
SD3				.738		
SD4				.737		
GSA1					.768	
GSA2					.835	
GSA3					.803	
GSA4					.561	
GKS1						.810
GKS2						.786
GKS3						.541
GKS5						.554
GC1			.860			
GC2			.862			
GC3			.864			
GC4			.802			
GSB1		.840				
GSB2		.856				
GSB3		.792				

Source: Compilation of authors.

Convergent & discriminant validity

The criteria for CR were satisfied by all the variables, with GHRM having a value of 0.914, GKNO was found to have a value of 0.785, and GRB and GRS having values of 0.891 and 0.942, respectively. SUSD and GRC also achieved the specified criteria. For GKNO, the AVE value was 0.48; other variables have AVE values higher than 0.5. As the CR value exceeds 0.6 for GKNO, there was no issue of convergent validity (Table 10).

Table 10. Validity test

	CR	AVE	MSV	MaxR(H)	GHRM	GRB	GRC	SUSD	GRS	GKNO
GHRM	0.914	0.639	0.477	0.920	**0.799**					
GRB	0.891	0.733	0.569	0.916	0.384***	**0.856**				
GRC	0.942	0.802	0.454	0.958	0.520***	0.473***	**0.895**			
SUSD	0.967	0.882	0.493	1.002	0.691***	0.454***	0.508***	**0.939**		
GRS	0.873	0.654	0.493	0.938	0.678***	0.417***	0.451***	0.702***	**0.809**	
GKNO	0.785	0.480	0.569	0.802	0.581***	0.755***	0.674***	0.694***	0.555***	**0.692**

Source: Compilation of authors.

Confirmatory factor analysis

The five indices used in the present study to determine model fitness. As shown in the table 11, the threshold for the chi-square goodness of fit is ≤ 3, whereas both incremental fit and comparative fit indexes have specified requirements of ≥ 0.90. The criterion for the goodness of fit index is a value higher than 0.8, whereas the root mean square error must be below 0.08. Observed values are also shown in the table. CMIN/df observed value was 2.152, which is less than 3. Similarly, the GFI value of .863 was higher than 0.80, and the criterion was satisfied. IFI and CFI values were 0.955 and 0.955, respectively, confirming that both were within the specified criteria. Lastly, the RMSEA value of 0.068 was less than 0.08 (Table 11).

Table 11. Confirmatory factor analysis

Indicators	Threshold	Observed
CMIN/df	≤ 3	2.152
GFI	≥ 0.80	.863
IFI	≥ 0.90	.955
CFI	≥ 0.90	.955
RMSEA	≤ 0.08	.068

Source: Compilation of authors.

Structural equation modeling

The first result in the table shows the first hypothesis that presumed that GHR significantly and positively influences the sustainable development of organizations. With a p-value below 0.05, the association between GHR and SD was significant.

In addition, GHR positively influenced SD (β= .332, p= 0.08). As per the second hypothesis, GSA significantly and positively impacts SD. The results revealed that GSA positively impacted SD, indicating that increasing GSA results in increased sustainable development. The association was significant as the p-value was below 0.05 (β= .421, p= 0.012). The third hypothesis proposed that GSB significantly and positively influences sustainable development. The results revealed that GSB and SD were positively associated. The hypothesis was supported at a lower significance level of 10% (β= .089, p= .090). Therefore, as per the results, green human resources and green social awareness were found to significantly impact sustainable development at a 5% significance level, whereas the effect of green social behavior on sustainable development was significant at a 10% significance level (Table 12).

Table 12. Structural equation model

Parameter			Estimate	Lower	Upper	P
SD	<---	GHR	.332	.170	.525	.008
SD	<---	GSA	.421	.276	.559	.012
SD	<---	GSB	.089	.003	.182	.090

Source: Compilation of authors.

The first result in Table 13 shows the fourth hypothesis that GKS significantly moderates the association between GHR and GC. The results showed that GKS was a non-significant moderator in the relationship between Green HRM and GC, as the p-value exceeded 0.05. Hence, the result rejected the fourth hypothesis (β= -.247, p=.658). Secondly, the fifth hypothesis was proposed that GKS significantly moderates the association between GSA and GC. The p-value in Table 4.16 was higher than 0.05; therefore, the negative moderation was not supported (β= -.491, p=.243). In terms of moderation mediation analysis, the moderating role of GKS in the association between GSB and GC was evaluated as per the sixth hypothesis. With a p-value higher than 0.05, the indirect effect was found to be insignificant, leading to the rejection of the hypothesis (β= -.186, p=.752).

The role of green commitment as a mediator was investigated and the results are also shown in the table. The seventh hypothesis stated that GC significantly mediates the association between GHR and SD. According to the p-value of 0.064, the mediating impact was significant at a 10% significance level (β= .0.027, p= .064). Similarly, the eighth hypothesis was proposed that GC significantly mediates the association between GSA and SD. The results favored the hypothesis, as the p-value was below 0.1. Hence, the mediating role of GC in the association between GSA and SD was significant at a 10% significance level (β= .0.023, p= .084). Lastly, the study tested the mediation of GC in the association between GSB and SD. GC was revealed as a significant mediator in the association between GSB and SD at a 10% significance level (β= .0.032, p= .089) (Table 13).

Table 13. Indirect effect

Indirect Path	Standardized estimate	Lower	Upper	P-Value
ZGC<--- ZGHRXGKS	-.247	-1.112	.705	.658
ZGC <--- ZGSAXGKS	-.491	-.947	.129	.243
ZGC <--- ZGSBXGKS	-.186	-1.370	.855	.752
GHR --> GC --> SD	0.027+	0.004	0.077	0.064
GSA --> GC --> SD	0.023+	0.001	0.064	0.084
GSB --> GC --> SD	0.032+	0.001	0.073	0.089

Source: Compilation of authors.

Conclusion and Implication

Conclusion

The study's findings have concluded that in the Vietnamese export industry, green HRM practices have a significant impact on the achievement of sustainable business development. Sustainable development helps the business in engaging its employees and stakeholders in its business. Green HRM practices encourage employees to develop green commitment and pro-environmental behaviors, which would help the business attain. Green HRM emphasizes encouraging employees to adapt to green practices, improving their environmental performance, and creating a positive brand image. The study's findings depicted that green social behaviors and social awareness also significantly impact the organization's sustainable development, and green knowledge and commitment play a crucial role in this.

In the Organizational discipline, green HRM is jeopardy of expanding. Green HRM enables the employees to be aware of the social and environmental aspects and their impact on the business and business impact on them. To survive in today's business, it is critical to become sustainable and adapt to green business practices and approaches. One of the crucial components of sustainable capabilities is green HRM which

adapts a sustainability approach and tends to develop a green workplace that motivates the employees to carry out their duties in a sustainable manner and to adaptive green behaviors. Green human resource management involves practices that emphasize a business's and its employees' social and environmental responsibility to the environment and society. Therefore, businesses should foster a workplace that promotes green HRM and encourages sustainable development.

Implication

Theoretical implications: no study has been conducted in the past which has analyzed the impact of green human resource management on sustainable development, along with analyzing the influence of green commitment, green social behavior, green knowledge sharing, and green social awareness.

Practical implications: The study highlights the importance of green HR policies and activities for Organizations to achieve sustainable development goals. The study also suggests that if human resource practices promote sustainability and increase green social awareness and behavior, it would also help the stakeholders and employees to be actively engaged in the business, and they would all work together for the betterment of society and the Organization. Furthermore, HR managers and personnel to incorporate green HRM, which should focus on developing green social awareness and green behaviors among employees; it will also increase the green commitment of managers, employees.

Managerial Implications: This would greatly benefit the environment and society. The study's findings shed light on creating awareness of sustainable development and green HRM practices, behaviors, and actions among employees and especially top management, because it will create a sense of green awareness and commitment in them. They will feel environmentally and socially responsible so that they will perform their tasks much more responsibly.

References:

Abili, K. (2011). Social capital management in Iranian knowledge-based organizations. Electronic Journal of Knowledge Management, 9, pp204-210-pp204-210.

Ali, M., Islam, K. M., Chung, S., Zayed, N. & Afrin, M. (2020). A Study of Green Human Resources Management (GHRM) and Green Creativity for Human Resources Professionals. International Journal of Business and Management Future, 4, 57-67.

Allameh, S. M. (2018). Antecedents and consequences of intellectual capital: The role of social capital, knowledge sharing and innovation. Journal of Intellectual Capital.

Ayodele, A. A., Panama, A. E. & Akemu, E. (2017). Green awareness and consumer purchase intention of environmentally-friendly electrical products in Anambra, Nigeria. Journal of Economics and Sustainable Development, 8.

Babutsidze, Z. & Chai, A.(2018). Look at me saving the planet! The imitation of visible green behavior and its impact on the climate value-action gap. Ecological Economics, 146, 290-303.

Bombiak, E. & Marciniuk-Kluska, A.(2018). Green human resource management as a tool for the sustainable development of enterprises: Polish young company experience. Sustainability, 10, 1739.

Chen, J., Kang, H., Wang, Y. & Zhou, M.(2021). Thwarted psychological needs: the negative impact of customer mistreatment on service employees and the moderating role of empowerment HRM practices. Personnel Review.

Chen, T. B. & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. Management science and engineering, 4, 27-39.

Dubois, C. L. & Dubois, D. A.(2012). Strategic HRM as social design for environmental sustainability in organization. Human resource management, 51, 799-826.

Handayani, W., Ariescy, R. R., Cahya, F. A., Yusnindi, S. I. & Sulistyo, D. A. (2021). Literature Review: Environmental Awareness and Pro-Environmental Behavior. Nusantara Science and Technology Proceedings, 170-173.

Katz, I. M., Rauvola, R. S., Rudolph, C. W. & Zacher, H.(2022). Employee green behavior: A meta-analysis. Corporate Social Responsibility and Environmental Management, 29, 1146-1157.

Kim, A., Kim, Y., Han, K., Jackson, S. E. & Ployhart, R. E.(2017). Multilevel influences on voluntary workplace green behavior: Individual differences, leader behavior, and coworker advocacy. Journal of management, 43, 1335-1358.

Kuo, Y.-K., Khan, T. I., Islam, S. U., Abdullah, F. Z., Pradana, M. & Kaewsaeng-On, R. (2022). Impact of Green HRM Practices on Environmental Performance: The Mediating Role of Green Innovation. Frontiers in Psychology, 13.

Lal, A. K. & Hareez, A. (2021). A Study On Consumer's Awareness On Green Marketing And Their Buying Behaviour Towards Green Products In Chennai City. PalArch's Journal of Archaeology of Egypt/Egyptology, 18, 4251-4260.

Le Van, Q., Viet Nguyen, T. & Nguyen, M. H. (2019). Sustainable development and environmental policy: The engagem232ent of stakeholders in green products in Vietnam. Business Strategy and the Environment, 28, 675-687.

Mcadam, R., Moffett, S. & Peng, J. (2012). Knowledge sharing in Chinese service organizations: a multi case cultural perspective. Journal of Knowledge Management.

Mensah, J.(2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. Cogent Social Sciences, 5, 1653531.

Mkumbachi, R. L., Astina, I. K. & Handoyo, B.(2020). Environmental awareness and pro-environmental behavior: A case of university students in Malang city. J. Pendidik. Geogr, 25, 161-169.

Naderi, I. & Van Steenburg, E. (2018) Me first, then the environment: Young Millennials as green consumers. Young Consumers.

Ooi, K.-B. (2014). TQM: A facilitator to enhance knowledge management? A structural analysis. Expert Systems with Applications, 41, 5167-5179.

Ozili, P.(2022). Sustainability and Sustainable Development Research around the World. Managing Global Transitions, 20.

Pham, N. T., Hoang, H. T. & Phan, Q. P. T.(2020). Green human resource management: a comprehensive review and future research agenda. International Journal of Manpower, 41, 845-878.

Pocztowski, A. (2016). Zrównoważone zarządzanie zasobami ludzkimi w teorii i praktyce. Zarządzanie i Finanse, 14, 303-314.

Shahzad, M., Qu, Y., Zafar, A. U., Rehman, S. U. & Islam, T.(2020). Exploring the influence of knowledge management process on corporate sustainable performance through green innovation. Journal of Knowledge Management, 24, 2079-2106.

Sharma, S., Prakash, G., Kumar, A., Mussada, E. K., Antony, J. & Luthra, S. (2021). Analysing the relationship of adaption of green culture, innovation, green performance for achieving sustainability: Mediating role of employee commitment. Journal of Cleaner Production, 303, 127039.

Volz, U. (2018). Fostering green finance for sustainable development in Asia.

Zhai, T. & Chang, Y.-C.(2018). Standing of environmental public-interest litigants in China: Evolution, obstacles and solutions. Journal of Environmental Law, 30, 369-397.

Zhou, K. Z. & Li, C. B.(2012). How knowledge affects radical innovation: Knowledge base, market knowledge acquisition, and internal knowledge sharing. Strategic management journal, 33, 1090-1102.

A VUCA CASE IN THE 21ST CENTURY: THE IMPACT OF THE RUSSIA - UKRAINE CONFLICT ON VIETNAM'S ECONOMY AND IMPLICATION FOR HIGHER EDUCATION

MA. Ngo Thi Thanh Van*

Abstract: ***The VUCA world, with an environment of volatility, uncertainty, complexity, and ambiguity, accelerates rapidly in the global marketplace. The Russia-Ukraine conflict, which is the hot spot following the Covid-19 pandemic, dramatically impacted the economies of many developing countries, including Vietnam. This is a typical example of a VUCA case in the 21st century. Vietnam's economy was directly and indirectly affected and struggled in certain channels and sectors. Regional disruption in the supply of commodities and trade was in correlation with the tight supply and price hike, particularly the strategic commodities of petrol and gas fuels. Volatility in the financial market, logistics and global supply, investor and consumer confidence were also seriously considered. However, the fluctuations in the local and global markets are also an opportunity for Vietnam's government and domestic businesses to adopt adaptation strategies and solutions promptly. Meanwhile, such a VUCA world requires higher education's flexibility and adaptability with definite visions, missions, solutions, and practices in its internalization, transformation, and innovation process.***

• Keywords: *VUCA, Russia-Ukraine conflict, Vietnam's economy, higher education, internalization, innovation.*

JEL codes: I25, N15, O53

Date of receipt: 18th September, 2023

Date of delivery revision: 22th September, 2023

Date of receipt revision: 30th October, 2023

Date of approval: 01st December, 2023

Tóm tắt: *Trong thế giới VUCA, với một môi trường không ngừng biến đổi, không chắc chắn, phức tạp và không rõ ràng, càng được thể hiện rõ nét trong bối cảnh thị trường toàn cầu. Xung đột Nga-Ukraine sau đại dịch Covid-19 đã ảnh hưởng mạnh mẽ đến nền kinh tế của nhiều quốc gia đang phát triển, bao gồm cả Việt Nam. Đây là một ví dụ điển hình về trường hợp VUCA trong thế kỷ 21. Nền kinh tế của Việt Nam đã bị ảnh hưởng trực tiếp và gián tiếp và đang gặp khó khăn ở nhiều mặt. Phải kể đến như sự gián đoạn về nguồn cung cấp hàng hóa và thương mại, đồng thời chịu biến động về giá cả, đặc biệt là các mặt hàng chiến lược như xăng và khí đốt. Biến động trên thị trường tài chính, ngành vận chuyển và cung ứng toàn cầu, niềm tin của nhà đầu tư và người tiêu dùng cũng được xem xét kỹ. Tuy nhiên, các biến động không ngừng trên thị trường trong nước và toàn cầu cũng là cơ hội để Chính phủ Việt Nam và các doanh nghiệp trong nước thực hiện các chiến lược và giải pháp phù hợp nhằm thích ứng nhanh trong bối cảnh hiện nay. Mặt khác, thế giới VUCA đòi hỏi nền giáo dục đại học sự linh hoạt và thích nghi cao hơn về mặt tầm nhìn, nhiệm vụ, giải pháp thiết thực và rõ ràng trong quá trình nội bộ hóa, chuyển đổi và đổi mới sáng tạo.*

• Từ khóa: *VUCA, xung đột Nga-Ukraine, nền kinh tế Việt Nam, giáo dục đại học, nội bộ hóa, đổi mới sáng tạo.*

1. Introduction

The world moves from the SPOD world to the VUCA world, S-Steady, P-Predictable, O- Ordinary, D- Definite to V- Volatility, U- Uncertainty, C- Complexity, A- Ambiguity (Asmolov, 2018; Waller et al., 2019). In other words, the components of the VUCA world refer to an environment of volatility, uncertainty, complexity, and ambiguity. A volatile situation refers to unstable, unpredictable change or turbulence growing in intensity, magnitude, and time length (Beabout, 2012; Bennett & Lemoine, 2014). An uncertain situation exists a lack of adequate information or knowledge to look for guidance in the past and prediction in the future. Complexity is a term used to describe a situation with an incredibly misleading or overwhelming information source, leading to misunderstanding and unwise decisions. Contrariwise, an ambiguous situation is defined as a lack of understanding and clarity of what will happen in the future (Bennett & Lemoine, 2014).

The VUCA world is not supposed to disappear since technology is rapidly increasing, and the global environment is constantly shifting day by day. Higher education (HE) is influenced by these four major components in such a complex and challenging

** Foreign Trade University; email: ngothithanhvan.cs2@ftu.edu.vn*

VUCA world. First, technology development has driven HE in instruction adaptation, technological utilization and application. Second, globalization and interconnectedness require HE to boost academic performance and restructure for economic productivity; otherwise, the existent and upcoming challenges could devastate HE institutions. Third, the changing demands of the labor marketplace and enterprises' perspectives become HE purpose- and plan-driven to adjust to and collaborate with for the matter of learner employment prospects and quality HE education. Fourth, HE is at the juncture of plentiful opportunities and potential threats of global trends and future uncertainties, so strategic and flexible plans should be prepared in response to the VUCA world. Therefore, the VUCA world places new challenges and demands on HE in terms of processes, administration, technologies, systems, structures, leaders, and stakeholders in the condition of a turbulent world and revolutionary change.

The post Covid-19 pandemic following the Russia and Ukraine conflict can be seen as the typical situation in the constantly shifting environment of the VUCA world. Although Russia and Ukraine trade accounted for less than 2% of Vietnam's total import and export turnover in 2021 (Ministry of Industry and Trade of the Socialist Republic of Vietnam, 2021; Viet Nam News, 2022), Russia and Ukraine are both prominent partners of Vietnam, ranking first and sixth, respectively, in trade turnover in the Asia-Europe region. Post Covid-19 pandemic, followed by the Russia-Ukraine war, impacted many aspects of Vietnam's economy during the current global business uncertainties in terms of global supply chain disruption, the sudden and ongoing reduction in annual export and import ratio, rising oil and gas prices, and payment defaults. This research attempted to give an overview of the impacts of the post Covid-19 pandemic and the Russia-Ukraine crisis on Vietnam's economy in its first half-year of 2022. Furthermore, the possible measures and responses of HE are recommended to navigate, shift and deal with the challenges of the crisis outbreak in the long run.

2. The Impact of the Russia-Ukraine on Vietnam's economy

2.1. VUCA in commodity and trade market

The ongoing crisis between Russia and Ukraine mainly caused supply fragmentation of fuels, commodities, and foods because many goods orders were delayed or canceled because of economic sanctions and counter-sanctions. As a result, commodity and food prices and higher inflation pressure in Vietnam drastically increased from February 2022. According to the General Statistics Office of Vietnam (2022), the CPI index rose up to 3.37%, and the inflation rate increased by 1.25% in the first six months of 2022 because of the hike in commodity products, petroleum in particular. Consequently, the increasing trend of higher price pressure could affect the expected CPI and inflation target of Vietnam to below 4% in 2022. The higher need for consumption of petroleum, gas, fertilizer, wheat, animal feeds, aluminum and nickel, metals, and construction steel from Russia and Ukraine is substantial after the Covid-19 lockdown.

In the first six months of 2022, prices of petroleum and oil products skyrocketed by 30% from the same period last year, hovering above $100 per barrel, its highest from 2014. It was more unlikely that oil prices would cool down in the next few months of 2022, causing ongoing global surging demand and oil supply disruption. Moreover, Nghi Son Refinery and Petrochemical LLC, the biggest oil refinery in Vietnam, reduced 80% of the oil output in 2022 as a consequence of financial problems that could not make the disrupted oil supply and soaring price a gainer. Although it was somehow seen that Vietnam's oil industry sector could benefit from surging oil prices, the oil industry's exploration and exploitation activities could face long-term difficulties because of heavy reliance on Russian equipment in Vietnam's oil drilling companies and energy industries if there were no alternative suppliers. Many energy projects in Russia-Vietnam cooperation were extended or canceled during the present crisis. For instance, a Russian contractor sought withdrawal from a $1.2 billion thermal power plant project in the Mekong River of Vietnam while the project was 77.56% completed (Tuoi Tre News, 2022). The soaring prices of oil, petroleum, and gases are pushing up the cost of other commodities and energy-intensive paramount sectors such as logistics, offshore fishing, aviation, and cultivation.

Russia and Ukraine are the major suppliers of nickel, krypton, aluminum, and palladium. These essential components, which are key sources of vehicles, sensors, and semiconductor computer chips in technology industries, could be hit by supply shortages as a consequence of the sanction of export restrictions on Russian products (Ngoc et al., 2022). Although Russia and Ukraine were not the main suppliers of these raw materials in Vietnam, Japan,

South Korea, and Taiwan, the major importers of Vietnam, imposed sanctions on Russia. Thus, the price of these limited and important minerals in the supply chain shock was soaring in Vietnam during and after the Covid-19 pandemic. Exacerbated disruption and scarcity in aluminum, palladium, and semiconductor neon gas, nickel used to make electric vehicle batteries and other electronic equipment and devices such as smartphones would affect Vietnam's manufacturing industry (Hiebert, 2022).

In the meantime, fertilizer imported from Russia was 1.8 million tons of fertilizer, reaching $86.8 million until the second period of 2022, a decrease of 22.5% in volume but an increase of 32,3% in value compared to the same period of last year (General Statistics Office of Vietnam, 2022; VnExpress International, 2022). The import from Russia, regarded as the major reasonable price exporter in the world, was mainly these leading fertilizers: potash, NPK, DAP, and urea. All-time upward fertilizer prices stemmed from the high cost of production and inputs relevant to the sharp increase in energy prices, high transportation costs, and present supply disruption prior to or after the Covid-19 recession. The present fertilizer prices in Vietnam (the highest price in the last 50 years) tremendously increased the burden on farmers regarding production costs and customers regarding food costs.

2.2. VUCA in trade flows

Many countries, such as the US, EU, UK, Japan, Australia, and Taiwan, progressively imposed sanctions on Russia during the crisis (Henley, 2022). Ukraine was closed to global trade and business, not to mention essential domestic goods and supplies. Russian Banks were removed from the SWIFT global payment platform due to the wide-reaching impact of sanctions against Russia, so many Vietnamese financial entities and businesses could not deal with their transactions with Russian banks (Valvo, 2022). Moreover, Russia banned and restricted foreign cargo imports' waterways and airspace transportation. Disrupted transactions with Russia in the view of shipping disruption at the borders, the current sanctions, and difficulties in the international payment system resulted in the impossible purchase and shipping of goods in the import and export process with Russia. As a result, many orders, purchases, and contract payments with Russia were impossible and continuously delayed or canceled, leading to the present interruption and losses or equity volatility in Vietnam's business (Ngoc et al., 2022; Samuel, 2022). Vietsovpetro and Petrovietnam, the major Vietnam oil and gas entities providing about a third of crude oil production in cooperation with Russian oil companies, could be an outstanding illustration of the hardship caused by the ongoing conflict and its aftermath (Scarlett, 2022).

Russia and Ukraine are growing export and import markets of Vietnam's agricultural and aquatic food products. However, in response to the armed conflict, aquatic enterprises, such as pangasius export, must proactively adapt to payment channels and access other promising Eurasia markets, which currently increase demand for seafood products (Trang, 2022). Import and export disruption of commodities related to agricultural and aquatic products, gas and petroleum, fertilizers, and strategic chemicals/ metals to and from Russia and Ukraine was not the sole problem. Vietnam's domestic enterprises also faced competition in purchasing raw materials from other potential markets with the recent high cost of goods delivery and transportation. Besides, the tight global supply, secure commodities hoarding after the Covid-19 pandemic, and the domestic price inflation control through export restrictions were other radical challenges since the supply interruption of top suppliers, Russia and Ukraine.

As for logistics and supply chain, the Russia-Ukraine conflict exacerbated the international seaports and logistics enterprises after the outbreak of the Covid-19 pandemic. Although the export and import demand in Vietnam's domestic economy was still significant, the suspended logistics services to and from Russia and Ukraine led to supply chain disruptions and skyrocketing prices in tandem. The closure of shipping routes in the paramount ports in and out of Russia and Ukraine impacted cargo movement congestions or shipment abandonment at ports after the outbreak of hostilities. That also meant that many shipping lines in the global transport route stopped or limited deliveries from and to Russia and Ukraine due to the region's insecurity until the second period of 2022. International air freight rates were also spiking because of the longer alternative route and oil price hikes. International payment interruption and the Russian ruble's decreasing value were regarded as adding pressure on global and local freight transport and export and import activities of port and logistics enterprises with Russia and Ukraine.

2.3. VUCA in Stock Market

The Russia-Ukraine conflict had a considerable impact on the short term of Vietnam's stock market,

but Vietnam's stock market was rebounding during the ongoing war crisis in the medium and long term. The fall was not significantly dramatic from the Russia-Ukraine conflict that broke out in February 2022. Although Vietnam's stock markets most likely experienced growth momentum and benefits in the long-term, stock market bubbles should be greatly concerned because of the long-lasting consequences during and after the conflict. The VN-Index decreased by 7.36%, or 95 points, and closed at 1197,6 points at the end of the second quarter of 2022 (ACBS, 2022; Nguyen, 2022). Industries in energy (oil and gas), fertilizer, key chemicals, steel, and food stocks overall seemed to benefit from manufacturing and export activities during the current prolonged crisis since the supply from the main exporters, Russia and Ukraine, was disrupted, along with the domestic as well as global demand such as EU regions was increasing. However, stocks of the agricultural and animal husbandry sector were vulnerable because animal feeds (wheat, corn, etc.), chemical compounds (e.g., NPK, urea fertilizers), and production costs hiked. Although the fuel consumption-based enterprises in Vietnam, such as logistics, aviation, and freight transport, were still under the pressure of petrol prices and inflation surge, transportation and goods distribution stocks were highly regarded to gain (Hang, 2022; Huynh, 2022).

3. The implication for higher education

The VUCA world places new challenges and demands on HE institutions' flexibility to shift and respond to the enormous opportunities and the possible threats of VUCA. The following factors and aspects of the global economy and network should be necessarily taken into account in HE for the coming generations in the highly volatile and turbulent situations, particularly economic, political and social education in the 21st century.

With a comprehensive understanding of threats and turbulences, HE could contribute to dealing with rapid change in the global economy, including the Russia-Ukraine conflict. The crisis began on 24th February 2022 in the context of the regional crisis and Russia's claim for regional control. International sanctions imposed on Russia were intended to put pressure on and inflict punishment on Russia's invasion of Ukraine. However, the Russia-Ukraine conflict and international sanctions increased spillover impacts on the economy of many countries beyond the sole economy of Russia. Although Vietnam did not openly condone Russia's action or imposed sanctions on Russia, the Russia-Ukraine conflict increased spillover impacts on Vietnam's economy, which gets high global levels of exposure (over 200% GDP ratio). The Russia-Ukraine war triggered global domino effects on multiple channels of the world economy, particularly in the vulnerable and open markets like Vietnam, including food security, finance, energy supply, trade, logistics, global supply chain, market confidence, inflation, tourism, refugee movement (Guenette et al., 2022; Ozili, 2022; United Nations, 2022). The Covid 19 pandemic significantly battered Vietnam's economy from January 2020. Then the Russia-Ukraine crisis sent shock waves through Vietnam's market, involving surge and volatility in commodity supply and prices, trade flows, stock market, inflation, and market confidence. This crisis is a typical example of the VUCA world, which places new challenges and demands on HE in terms of processes, administration, technologies, structures, leaders, and relevant stakeholders. The advanced hardware of educational technology or innovation in an isolated, separate factor cannot guarantee the success of HE in such a constantly shifting environment.

The current socioeconomic turbulent situations reflect the vision and strategies of HE. Prolonged tension between Russia-Ukraine will continuously affect the short-term and long-term economy's recovery and development after reopening the economy in Vietnam. Price shock and other trouble problems are supposed to be long-lasting scars on Vietnam's economy. The act with urgency, as well as long-term strategies, will benefit Vietnam enterprises, businesses, and the general economy to resume smooth, opportune operations. The flexibilities and adjustments in existing policies and systems or the timely and well-targeted solutions should be taken to monitor the urgent socioeconomic problems related to energy, food, fertilizers, and finance. Various markets for supply and demand, as well as payment methods, could be highly suggested. Import and export sectors should be maintained with different international trade partners and sources. The secured commodity stocks and diverse domestic production will also be advisable to be resilient and avert the negative impact on the domestic economy. Otherwise, any ad hoc measures like price control, subsidy intervention, and trade restriction should be wisely and flexibly taken in case of exacerbating the global high price pressure and risks of global food insecurity. The integrated economy calls on international bilateral cooperation to address the crisis and achieve coordinated solutions

for the recent global shocks and risks beyond the sole responsibility or measurement of a national system. Likewise, Campus-in-Campus (CiC) initiatives with the mobility of educational resources, collaborative programs, research, labor leadership, and international movements towards sustainable development goals could call forth the solutions for the VUCA World. It could be the strategies that will probably appear effective for the geopolitical crisis to prevent the war from exerting the knock-on effect in this VUCA world or the optimal diplomatic resolutions for the ongoing escalation among bilateral relations in the current open global market already battered by the Covid-19 concession.

Energy, commodity, and food price volatility should be particularly focused on the educational space in the VUCA world. Vietnam is still regarded as a developing country that depends on energy imports. It will harm the general economy through energy insecurities and soaring energy prices import. Meanwhile, energy prices, as well as other commodities and food price hikes, also threaten the lives of millions of households in Vietnam, who are particularly dependent on petrol for their private transport and gas for cooking. This leads to vulnerable low-income or medium-income households struggling with consumption and living cost expenditure. Lower petrol prices, stability of fuel cost, job prospects, higher income, tax reduction on fuels in the short term, and inflation decrease will benefit households. Moreover, domestic enterprises could also ease the burden of high production costs, have more advantages to increase production, yield greater profit, expand production, and thereby create more employment and job opportunities for a stable and thriving economy. Such a government's effort, combined with policy and response strategies sharing the difficulties with households and domestic enterprises, is likely to mitigate the recent impact on the national economy. As a result, the economy in Vietnam could gradually control the CPI ratio, increase GDP, and foster Vietnam's post-pandemic economy recovery in the current VUCA context. During the general rise in the prices of goods and services in Vietnam's domestic and global economy in response to the ongoing Russia-Ukraine conflict, consumers are spending more on fewer goods and experiencing a rise in their living costs while their income levels appear unchanged. This leads to the alarming effect of a rise in inflation in Vietnam. HE institutions in Vietnam should respond to this current VUCA situation by reclaiming their roles as a driver, which appear full of vision, understanding, courage, mission, adaptability, strategies, and solutions during educational transformation and innovation at present and in the future.

Sustainable development could be another implication for the long-term economic prospects and the educational transformation for HE development throughout the global crisis and volatility. In such a changing and uncertain economic system, HE institutions become a driving force to direct how our generations rethink, restructure, and respond to achieve the desired result of the thriving of countries' economic life. In the long term, the investment in renewable energy, besides fossil-based energy, cannot be neglected for energy security. Besides, using fewer fertilizers, promoting new farming techniques along with efficient fertilizer use or other alternative organic fertilizers will be the solution in case of price hikes and severe fertilizer shortages in the medium term. More broadly, those target measures also mean cutting the farming input costs, enhancing crop productivity and yields in the targeted sustainable agriculture, and saving the environment. HE can contribute to the era of the required sustainable innovation ecosystem in the VUCA world by integrating new knowledge exploration and practical business exploitation. In this way, HE inextricably ties to and elaborates on the changes in the knowledge-based society and industrial, economic, and societal clusters.

Such volatile, uncertain, complex, and ambiguous world demands arise in the external and internal transformation in the co-innovation and a close relationship between HE institutions and industries for economic growth. The recent uncertainty during the beleaguered Covid-19 pandemic and the Russian-Ukraine crisis persistence could be an alerting warning and opportunity for many countries, including Vietnam. It remains essential to diversify import sources, be flexible to cooperate in various markets, produce goods domestically, boost domestic productivity, restructure, and improve the efficiency of the domestic economy. Besides, agricultural product exports from Vietnam to countries highly dependent on food imports from Russia and Ukraine should be promoted to guarantee the global food demand and safeguard the food security and nutrition of net food-importing countries in the context of the supply crunch and shortages. Nonetheless, the soaring input costs from energy and other energy-intensive commodities will challenge export enterprises in Vietnam. Any diversion as a result of global economic recovery, cooperation, and international stability,

untroubled international trade, the smooth supply chain, the remaining goods demand, the stable oil price, and high freight rates of goods could benefit the domestic industries in transport and logistics of Vietnam and other countries. Meanwhile, the money pump or tight monetary of the government should be seriously considered regarding the potential taper tantrum and rising inflation in the volatility of the current financial disorder and commodity hike because of the potentially irreversible socioeconomic effects. Consequently, in relation to the economic and societal changes and adaptabilities, HE is now playing broader roles as new knowledge explorations, exchange, and sharing in the multichannel innovation ecosystems. That means the sustainable economic transformation expects HE roles and calls for its innovative model, Campus-in-Campus (CiC), for the sustainable internationalization of HE.

The VUCA world has shown the importance of the harmonious balance of innovation and preservation in the uncertain, unstable, complex, and ambiguous world. Recently, after consecutive petrol price hikes, oil prices started to drop by 0.52% to about $102 per barrel in Vietnam in the first few weeks of July 2022, according to the global oil prices fall. An around $100 drop per barrel in the international benchmark crude oil while OPEC+, OPEC, and allies determined the oil production increase as Russian output dropped. That could be a positive sign to emerge from the looming recession fears; however, that is the matter of where the petrol price will be later and when other petrol-intensive commodities and food prices will drop. Additionally, there is no clear sign that the geopolitical crisis between Russia and Ukraine will end soon. Despite the supply chain disruption by sanctions or the uncertainty of a sustainable global supply chain in this VUCA world, the remaining high demands could be the ongoing pressure for economic recovery in many countries, including Vietnam. Nonetheless, global and regional coordinated approaches and national government strategies probably relieve energy supply volatility, thereby protecting enterprises and consumers. In that case, HE becomes a trustworthy factor in transnational university-industry co-innovation networks.

4. Conclusion of a VUCA case toward higher education in the 21st century

HE in the 21st century is absolutely required to change in accordance with global turbulence and development. Prior to the Russia and Ukraine conflict, the global economy, including Vietnam's economy, confronted plenty of challenges. And the recent Russia-Ukraine conflict seriously aggravated the situation. Global supply chain disruption and upward pressure on price hikes were more likely to further deteriorate in the ongoing ban on cross-border trade of import and export goods. Hence, the combination of spillover effects led to other knock-on economic effects concerning economic indicators such as BCI, CPI, CCI, inflation, and stock market index in the global market, including Vietnam's domestic economy. Furthermore, the VUCA world is not supposed to disappear since technology is rapidly increasing, and the global environment is constantly shifting day by day. Accordingly, HE should always be an active organizational actor and innovative initiatives from the perspective of mutual learning, co-creation, knowledge exchange, and transfer in the sustainable co-innovation networks and trustworthy builder status between HE and industries for sustainable internationalization.

References:

ACBS 2022. Tong quan thi truong T7-2022. Vietnam: ACBS.

Asmolov, A. 2018. Race for the future: "... Now here comes what's next". Russian Social Science Review, 59, 484-492.

Beabout, B. 2012. Turbulence, perturbance, and educational change. Complicity: An International Journal of Complexity and Education, 9.

Bennett, N. & Lemoine, G. J. 2014. What VUCA really means for you. Harvard Business Review, 92, 10.

General Statistics Office of Vietnam 2022. Thong cao bao chi ve tinh hinh gia thang 6, quy II va 6 thang dau nam 2022.

Guenette, J. D., Kenworthy, P. G. & Wheeler, C. 2022. Implications of the war in Ukraine for the global economy. World Bank Group.

Hang, B. T. 2022. Hoat dong logistics toan cau nam 2022 va ham y cho Viet Nam. Tap chi Tai chinh ky 1 - Thang 7/2022. Vietnam: Tap chi tai chinh.

Henley, J. 2022. What sanctions have been imposed on Russia over Ukraine invasion? The Guardian, February 28, 2022.

Hiebert, M. 2022. Fallout in Southeast Asia of Russia's invasion of Ukraine. CSIS, March 11, 2022.

Huynh, N. 2022. 3 nhom nganh huong loi tu xung dot Nga - Ukraine. Nha Dau Tu, February 28, 2022.

Ministry of Industry and Trade of the Socialist Republic of Vietnam 2021. Vietnam import-export report 2021. Vietnam.

Ngoc, N. M., Viet, D. T., Tien, N. H., Hiep, P. M., Anh, N. T., Anh, L. D. H., Truong, N. T., Anh, N. S. T., Trung, L. Q. & Dung, V. T. P. 2022. Russia-Ukraine war and risks to global supply chains. International Journal of Mechanical Engineering, 7, 633-640.

Nguyen, T. 2022. Chung khoan hom nay 22/7: Thach thuc và co hoi nua cuoi nam 2022. Kinh te & Do thi, July 22, 2022.

Ozili, P. K. 2022. Global economic consequence of Russian invasion of Ukraine. SSRN Electronic Journal.

Samuel, P. 2022. How the Russia-Ukraine conflict is affecting businesses in Vietnam. Vietnam Briefing, p.March 25, 2022.

Scarlett, E. 2022. Ukraine-Russia conflict could impact Vietnam oil drilling. Offshore Technology, March 10, 2022.

Trang, S. 2022. Pangasius exports to Russia interrupted due to conflict. Vietnam Agriculture, March 08, 2022.

Tuoi Tre News. 2022. Russian contractor seeks withdrawal from $1.2bn thermal power project in southern Vietnam over US sanctions. Tuoi Tre News, March 09, 2022.

United Nations 2022. Global Impact of war in Ukraine on food, energy and finance systems. Vietnam.

Valvo, N. 2022. Economic criticism. The Year's Work in Critical and Cultural Theory, 30, 77–92.

Viet Nam News. 2022. Russia-Ukraine conflict represents a challenge for exporters. Viet Nam News, March 15, 2022.

VnExpress International. 2022. Fertilizer imports from Russia rise by 60 percent.

Waller, R., Lemoine, P., Mense, E., Garretson, C. & Richardson, M. 2019. Global Higher Education in a VUCA World: Concerns and Projections. Journal of Education and Development, 3, 73.

FACTORS MOTIVATING EMPLOYEES TO WORK DURING THE COVID-19 PANDEMIC

PhD. To Anh Tho* - Dao Hanh Phuc**

Abstract: ***The crisis of the economy due to the strong impacts of the COVID-19 pandemic has a great influence on employee motivation. The study aims to identify factors affecting the work motivation of employees at enterprises in Ho Chi Minh City. This study was surveyed by sending online questionnaires to employees working in Ho Chi Minh City. By using multiple regression with SmartPLS for a sample of 262 respondents, the results show that Compensation, Nature of work, Training, Relationship with superiors, and Relationship with colleagues affect the motivation to work of employees during the COVID-19 pandemic. From there, the study proposes solutions and advice for businesses to motivate their employees to work during the COVID-19 pandemic and minimize risks of shortage of human resources and ineffective business operation strategies.***

• Keywords: *human resource management, motivation, employee, COVID-19.*

Date of receipt: 04th October, 2023

Date of delivery revision: 05th October, 2023

Date of receipt revision: 02nd November, 2023

Date of approval: 20th November, 2023

Tóm tắt: *Cuộc khủng hoảng của nền kinh tế do tác động mạnh của đại dịch Covid-19 đã ảnh hưởng rất lớn đến động lực làm việc của người lao động. Nghiên cứu nhằm xác định các yếu tố ảnh hưởng đến động lực làm việc của người lao động tại các doanh nghiệp ở Thành phố Hồ Chí Minh. Nghiên cứu này được khảo sát bằng cách gửi bảng câu hỏi trực tuyến tới người lao động đang làm việc tại Thành phố Hồ Chí Minh. Bằng cách phân tích hồi quy bội với phần mềm SmartPLS cho 262 mẫu khảo sát, kết quả cho thấy Lương thưởng, Tính chất công việc, Đào tạo, Mối quan hệ với cấp trên và Mối quan hệ với đồng nghiệp ảnh hưởng đến động lực làm việc của nhân viên trong đại dịch COVID-19. Từ đó, nghiên cứu đề xuất các giải pháp, lời khuyên cho doanh nghiệp nhằm tạo động lực cho người lao động làm việc trong đại dịch Covid-19, đồng thời giảm thiểu rủi ro thiếu hụt nguồn nhân lực và chiến lược hoạt động kinh doanh không hiệu quả.*

• Từ khóa: *quản lý nguồn nhân lực, động lực, nhân viên, COVID-19.*

1. Introduction

Employee motivation is seen as the key to success for most businesses. Therefore, it is considered a top concern in business operations. "The biggest problem for managers is to accurately sense the factors that motivate employees" (Kovach, 1995). Motivation motivates employees to work with enthusiasm to help accomplish the goals and plans set by the organization. According to Arman, (2009): "When employees are motivated, they will work at 80-90% efficiency, quit one's job rate will be very low". If the employee's motivation is not taken care of by the managers, it will cause businesses to reduce productivity, and not achieve the set goals, the development ability of the business will not be high and there will be no success competitiveness with rival companies, and especially will be at risk of being "submerged" during the COVID-19 pandemic.

There are many previous related research papers on the effects of factors on motivation to work, but there are differences in geographical location, space-time, and research object. To clarify this issue, the author has built a new research paper in Ho Chi Minh City, Vietnam. Ho Chi Minh City is the central position of the country's economy; during the COVID-19 pandemic, businesses in the city are also severely affected, the working motivation of employees is also affected by the threat of infection, the pressure of work and

** University of Finance - Marketing, Ho Chi Minh City; Corresspoding author; email: totho@ufm.edu.vn*

*** HELP University, Malaysia*

family pressure, the pressure of changing the way and place of work…, which makes them lose their enthusiasm and cohesion with work. Understanding the work motivation of employees helps businesses identify the needs of employees and stimulate the work effort of employees so that they can work at maximum productivity and fulfill the goals of the organization. The object of the study is to identify the main factors affecting the work motivation of employees in Ho Chi Minh City during the COVID-19 pandemic. From there, policy implications and effective strategies are suggested to help businesses stimulate employee morale and motivate them to work better to maintain and grow the business during the COVID-19 period.

2. Literature review

2.1. The concept of work motivation

Motivation is the factor that stimulates people to work hard in the conditions that allow to create the highest productivity, quality, and efficiency at work (Pinder, 2014). Motivation is associated with internal and external forces, that create strength for each individual to rise up, and make more efforts in realizing life's goals, including personal and organizational goals (Carr, 2005). In essence, motivation is associated with each individual, with the nature and working environment. Whether the organization's goals are effectively achieved or not, is partly determined by the motivation of the workers (Owusu, 2012). In an organization where employees lose motivation, the organization will face failure.

Creating motivators is the application of policies, measures, and management methods that affect employees, the working environment, and surrounding relationships to make employees motivated to work, and more satisfied with work. Managers in the organization who want to build a strong company must use measures to stimulate employees to make them work hard, and promote creativity in the working process. So motivating employees are all measures the manager applies to employees to create motivation for employees, for example: setting realistic goals that are both consistent with the goals of employees and satisfying the goals of the enterprise, using physical and mental stimulation measures (Marewo et al., 2020).

2.2. Maslow's hierarchy of needs theory.

Maslow (1943) presents the set of needs as a hierarchy, which is presented through the five hierarchy of needs. Human needs are arranged in an orderly system in the form of a pyramid. The "basic" needs are ranked at the lowest level, whereby the higher needs appear, and the basic needs must be satisfied first (Maslow, 1943). This theory holds that the most basic level begins with physiological needs: food, water, and shelter. Next are safety and social needs. Maslow argued that higher-level needs, such as esteem and self-actualization, can only be met after lower-level needs have been satisfied. The task of managers is to understand at what level the wants and needs of their employees are because according to Maslow (1943), he argued that it is necessary to understand clearly what level the person is at in the hierarchy of needs, thereby focusing on satisfying those needs or higher.

2.3. Vroom's Theory of Expectations.

This is a very important theory in human resource management, it complements Maslow's hierarchy of needs theory. Vroom (1964) argues that the motivations to motivate people to work are not necessarily only the need to be satisfied in the present, but moreover, people are stimulated by the expectations of the employees in the future. When an individual tries to work, they will expect their work to be completed with the best results along with worthy rewards. The attractiveness of the results together with the rewards in line with the expectations will stimulate creating greater motivation to motivate employees in the next work.

Expectations have a great motivating effect on employees, but in order to create expectations for employees, there must be the means and conditions to fulfill it. These means are the policies, management mechanisms, working conditions, etc. that enterprises guarantee for employees. To motivate employees, managers should take measures to create expectations, create attractiveness of the results and rewards themselves, as well as help employees understand the relationship direct relationship between effort and achievement, outcome achievement, and reward.

3. Hypothesis development

3.1. Nature of work

Work that is rich and interesting will bring excitement and stimulation to employees, and improve employee behavior and attitudes (Bosma, 2003). According to previous studies, employee motivation is strongly influenced by the variety, interestingness, and challenges that the job brings, (Koskinen, 1995). Daily repetitive work will gradually make employees feel bored and lose interest in work, on the contrary, employees who are allocated diverse jobs, will be more motivated to work. This shows that the nature of work is associated with Maslow's hierarchy of needs. The COVID-19 pandemic has created a challenging environment for employees, which requires employees to acquire new knowledge and skills to adapt and learn new skills training.

H1: The nature of work positively impacts employee motivation during the COVID-19.

3.2. Working conditions

Working conditions are understood as the condition of the place where the employees perform their work, it is considered as one of the basic human needs such as the assurance of health, occupational safety, hygiene, facilities, and working environment (Kovach, 1987). Conditions in the workplace of employees are associated with Maslow's hierarchy of needs theory, when people are satisfied with their needs, they will generate motivation to perform work. Creating the best working conditions for employees gives employees more enthusiasm and excitement at work. If the business has a bad working environment, it will make employees feel depressed and have low work efficiency (Taguchi, 2015). It can be seen that the conditions at work greatly affect the productivity and work efficiency of each employee, thereby creating a motivation for the business to develop.

H2: Work conditions positively impact employee motivation during the COVID-19.

3.3. Recognition

One of the reasons why employees lose their enthusiasm and decide to leave the company is because they feel their contributions are not recognized (Hung, 2017). Every employee wants to get recognition from colleagues as well as superiors. A well-implemented employee recognition program impacts many aspects of a business including human resources, productivity, revenue, and morale. On the contrary, when enterprises do not have employee reward policies or those programs are impractical and poorly implemented, it can reduce motivation and even lose good employees to other businesses that have better regimes (Bartol & Martin, 1998). Recognition is associated with the need for self-actualization and esteem in Maslow's hierarchy of needs theory and Vroom's theory of expectations. Employees feel more valued and engaged with the organization when their contributions are recognized (Nelson, 1996).

H3: Recognition positively impacts employee motivation during the COVID-19.

3.4. Training

The company's training policies help employees learn new knowledge and skills for the job, satisfy the development, and demonstrate employee's ability. Training creates adaptation between employees to their current jobs, meets the needs of employees to improve their knowledge, and helps employees gain a new mindset at work and this is also the basis for improving the creativity of employees (Ha et al., 2019). When employees are equipped with specialized knowledge and skills, it stimulates employees to perform better, confidently take on more challenging tasks, and work hard to achieve more promotion opportunities (Nelson, 1996).

H4: Training positively impacts employee motivation during the COVID-19.

3.5. Growth opportunity

Employees' motivation to work is more strongly stimulated when the organization provides them with opportunities to learn and advance in a fair career. This creates a motivation to stimulate employees to work hard to get new development opportunities, affirm their own abilities, to achieve good achievements at work, and to have promotion opportunities positions and higher salaries (Nelson, 1996). It can be seen that this factor is associated with both Maslow's and Vroom's theories on the need to develop and assert themselves as well as expect the results that their efforts bring. According to Thuy and Nhung (2018), employees' efforts to develop to gain promotion opportunities will also help other

employees strive harder, thereby contributing to the development of the business.

H5: Growth opportunity positively impacts employee motivation during the COVID-19.

3.6. Compensation

Compensations such as salaries, bonuses, allowances, benefits, and preferential policies of the enterprise are the top concerns of employees, (Dung & Tri, 2021). Accordingly, enterprises must pay salaries to employees in accordance with the employee's capacity, and the salaries must be enough for employees to serve their personal lives, or have reward policies for employees to complete good job assigned, (Kovach, 1987). Employees will feel more motivated when they receive the right compensation from the business. Compensation such as salary, bonus... are expectations of employees after working hard, according to research by Linder (1998) incomes not only help them satisfy basic needs but also higher needs in life, so the element of compensation is associated with both Maslow and Vroom's theories. Reasonable remuneration keeps employees' long-term commitment to the organization.

H6: Compensation positively impacts employee motivation during the COVID-19.

3.7. Relationship with superiors

This is a factor related to the need for social interaction, attention and respect for personal achievements in work and life - this is in the theory of Maslow's hierarchy of needs (1943). According to Grant (1990), the care of superiors will create great motivation for their employees. The attitudes and actions of superiors have a direct or indirect influence on employee motivation in both positive and negative ways (Chowdhury, 2014). Kovach (1987) said: *"In order to motivate employees, superiors need to respect and trust employees, consider employees important in the organization"*. If employees always receive practical suggestions and comments as well as the sharing and support of superiors in work and life, it will increase enthusiasm and motivate employees to complete their work well work (Abbott et al., 2006).

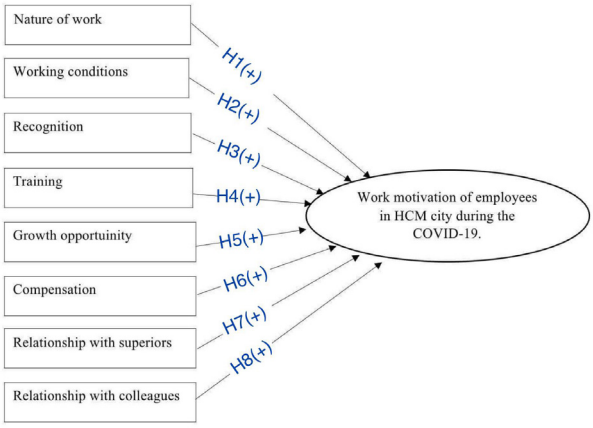
H7: Relationship with Superiors positively impacts employee motivation during the COVID-19.

3.8. Relationship with colleagues

A working environment where employees are always happy, sociable, ready to share knowledge and skills and help each other in work and life, will help employees be more motivated (Hill & Jones, 2008). Employees can improve their skills and learn from their colleagues (Ly, 2015). Working environment where the internal relationship between employees is tense, will cause a lot of pressure, jobs will not be completed well, which will lead to many leaving the enterprise.

H8: Relationship with Colleagues positively impacts employee motivation during the COVID-19.

The proposed research model



4. Research method

To measure the above-mentioned factors, the measurement items are adapted from previous research papers on the same topic. The author conducts a pre-test with industry experts to ensure that the content of the questions is complete and relevant to the research problem. Then the author conducts a pilot test with 35 employees to see if they have understood the content of the question correctly and adjust the words in the survey question to make it easy for readers to understand. The official questionnaire was designed online based on Google Forms. It was sent to employees working in Ho Chi Minh City, in October 2021.

The author collected 314 samples but only 262 responses were satisfactory and were used for data analysis. The sample calculation method is applied through Soper's online software (2019), it is easy for the authors to determine

the appropriate sample size to build an effective survey and research. By entering the parameters "anticipated effect size (0.3), desired statistical power level (0.95), probability level (0.05) and the number of predictors (8)". The software has calculated that 85 is the minimum number of samples for the research model. Thus, 262 questionnaires are considered completely suitable for conducting research and data analysis.

The author uses SPSS 26 software to perform descriptive statistics with demographic questions, and then the data will be put into SmartPLS 3.3.3 software and a 2-step analysis technique to analyze the data, (Henseler & Chin, 2010). Specifically, as follows, step 1 evaluates the measurement model, checking the reliability of scale through outer loadings, Cronbach's alpha, and composite reliability. Then, the author checks the validity through AVE, Cross-loadings, Fornell-Larcker. In step 2, the author evaluates the structural model, using the bootstrapping approach (1000-sample repetition, it helps to determine the significance levels of the path coefficients.

Table 1. Measurement items

Factors	Measurement items
Nature of work (NOW)	NOW1: The job matches my desires and abilities. NOW2: The job is suitable for the qualifications and skills that I have been trained for. NOW3: The work is interesting and brings many challenges for me. NOW4: The job allows me to promote my personal capacity well.
Working conditions (CON)	CON1: The equipment, tools and labor protection at the workplace are fully equipped. CON2: My workplace is comfortable and is guaranteed to be safe, hygienic and non-toxic. CON3: The working environment in my company is not too stressful. CON4: My working conditions ensure health factors for employees.
Recognition (REC)	REC1: My efforts are recognized by my superiors. REC2: The superiors often praise and recognize achievements when employees complete work goals. REC3 Accurate recognition of employee performance. REC4: Performance appraisals among employees are made fairly.
Training (TRA)	TRA1 Employee training is always focused on by the company. TRA2 The company creates favorable conditions for employees to develop the necessary knowledge and skills for the job. TRA3 The form of training is appropriate. TRA4 Results of training programs help employees improve work efficiency.
Growth opportunity (GO)	GO1: The company always creates conditions for me to develop and advance in my career. GO2: There are many promotion opportunities for people with ability and striving. GO3: Enterprises always have clear promotion conditions. GO4: All employees have the opportunity to learn, develop, and have equal opportunities for advancement.
Compensation (COM)	COM1: The salary is commensurate with my efforts. COM2: Guaranteed salary to meet my living needs. COM3: Salary is paid on time. COM4: The company has reasonable support allowances. COM5: Enterprises pay full insurance packages for employees under the law. COM6: Enterprises have a full settlement of sickness and occupational disease regimes.
Relationship with superiors (RWS)	RWS1: My leader cares about subordinates. RWS2: My superiors listen to the opinions of employees. RWS3: My superiors treat employees fairly. RWS4: Employees receive support from superiors in work and life. RWS5: Superiors always skillfully comment and evaluate employees.
Relationship with colleagues (RWC)	RWC1: My colleagues are sociable and fun. RWC2: My colleagues help each other in work and life. RWC3: Colleagues are willing to share their working experiences with me. RWC4: My colleagues are diligent and dedicated to their work. RWC5: Effective teamwork colleagues.
Work motivation during the COVID-19. (MOT)	MOT1: I feel enthusiastic when working. MOT2: I usually work with the utmost effort. MOT3: The company's salaries and bonuses stimulate me to work MOT4: The company's incentive policies motivate me to work

5. Results

Table 2. Repondents' profile

	Value	Frequency	Percent
Gender	Male	110	42%
	Female	152	58%
Age	Under 25 years old	116	44.3%
	From 25 to 30 years old	84	32.1%
	From 30 to 35 years old	26	9.9%
	From 35 to 40 years old	30	11.5%
	40 years or older	6	2.3%
Education	High School	20	7.6%
	College	31	11.8%
	University	169	64.5%
	After university	42	16%
Work experience	Less than 5 years.	181	69.1%
	From 5 to 10 years.	28	10.7%
	Over 10 years	53	20.2%
Income	Under 10 million dong	134	51.1%
	From 10 to 15 million VND	16	6.1%
	From 15 to 20 million VND	87	33.2%
	Over 20 million VND	25	9.5%

In Table 2, females accounted for 58% and males accounted for 42%. The majority of respondents to the survey are under 25 years old (44.3%) and from 25 to 30 years old (32.1%), these are the two age groups that account for the highest percentage of survey responses in the age groups surveyed. The education level at "university level" accounts for the highest percentage (64.5%). Most of the survey respondents were in the group of less than 5 years of working experience (69.1%) and with a salary of less than 10 million (51.1%) or between 10 and 15 million dong (33.2%). In general, this sample is currently at a disproportionate level in terms of age, work experience and salary, most of the survey respondents are young people, with work experience less than 5 years.

Table 3 summarizes the results of outer loadings, Cronbach's alpha, Composite reliability, and AVE indexes. Outer loadings must be greater than or equal to 0.7, in some cases of exploratory studies, outer loadings may also be acceptable at 0.4 or higher (Hulland, 1999). Therefore, in the results of the outer loading factor analysis, most are above 0.7, except for COM3 (0.660) and COM6 (0.630) which can still be accepted and retained.

Cronbach's alpha is commonly used to evaluate the "internal" reliability of the factors in the model. In the analysis results of Cronbach's alpha coefficient, all factors are reliable and satisfy the allowed conditions, because all indexes are greater than 0.7. Similarly, in the results of CR coefficient analysis, all satisfy the condition and are greater than 0.7. This shows that the scale is very good and has high reliability, which is eligible to perform the next quantitative analysis steps.

To evaluate the convergence, it is necessary to rely on the average extracted variance (AVE), According to Hock and Ringle (2010), "A scale achieves convergence if the AVE is 0.5 or higher. Level 0.5 means latent mother variable on average will explain at least 50% of the variation of each observed child variable". In Table 3, the AVE values reached above 0.5, showing that all factors have high convergent values, and ensure eligibility for qualitative analysis next amount.

The discriminant value reflects the distinctiveness of a construct when compared with other constructs in the model. Henseler et al (2015) used the HTMT coefficient to evaluate the discriminant among the factors (HTMT value less than 0.85). From the above analysis results in Table 4, the factors in the model achieve discriminant value.

Table 3. Reliability and validity tests

Construct	Measurement	Outer Loadings	Cronbach's Alpha	CR	AVE
Compensation (COM)	COM1	0.755	0.805	0.860	0.508
	COM2	0.731			
	COM3	0.660			
	COM4	0.785			
	COM5	0.703			
	COM6	0.630			
Working conditions (CON)	CON1	0.809	0.843	0.895	0.681
	CON2	0.862			
	CON3	0.750			
	CON4	0.873			
Growth opportunity (GO)	GO1	0.817	0.819	0.880	0.648
	GO2	0.801			
	GO3	0.747			
	GO4	0.852			
Work motivation during the COVID-19. (MOT)	MOT1	0.793	0.839	0.893	**0.676**
	MOT2	0.769			
	MOT3	0.857			
	MOT4	0.864			
Nature of work (NOW)	NOW1	0.857	0.877	0.916	**0.732**
	NOW2	0.854			
	NOW3	0.814			
	NOW4	0.894			
Recognition (REC)	REC1	0.850	0.847	0.897	**0.686**
	REC2	0.756			
	REC3	0.846			
	REC4	0.857			
Relationship with colleagues RWC	RWC1	0.810	0.882	0.914	**0.679**
	RWC2	0.840			
	RWC3	0.846			
	RWC4	0.822			
	RWC5	0.800			
Relationship with superiors RWS	RWS1	0.764	0.862	0.901	**0.645**
	RWS2	0.844			
	RWS3	0.809			
	RWS4	0.833			
	RWS5	0.763			
Training TRA	TRA1	0.822	0.812	0.876	**0.640**
	TRA2	0.844			
	TRA3	0.781			
	TRA4	0.750			

Table 4. HTMT ratio

	COM	CON	GO	MOT	NOW	REC	RWC	RWS
CON	0.594							
GO	0.782	0.619						
MOT	0.841	0.617	0.662					
NOW	0.494	0.586	0.465	0.728				
REC	0.652	0.711	0.642	0.678	0.634			
RWC	0.671	0.571	0.678	0.738	0.491	0.630		
RWS	0.811	0.689	0.726	0.833	0.618	0.766	0.800	
TRA	0.763	0.714	0.808	0.815	0.648	0.800	0.728	0.812

After completing "reliability and validity" tests, the author conducts the Bootstrapping analysis to evaluate the structural model. Before doing this, the author also conducts a test of the Inner VIF coefficient to measure the multicollinearity. The results show that the VIF coefficients are less than 5, and there is no multicollinearity (Hair et al, 2021). In Table 5, five factors are statistically significant (COM, NOW, RWC, RWS, TRA), and three factors are not (CON, GO, REC).

Compensation: The relationship between COM and MOT is positive and statistically significant (β= 0.328; P-value= 000), and the effect size $f^2 = 0.153 > 0.15$. Compensation has a positive effect on employee motivation during the COVID-19 pandemic. It implies that maintaining and stabilizing income during the pandemic is the top concern of employees. This result is completely similar and consistent with Dung and Tri (2021) and Ha et al. (2019).

Nature of work: Similar to Hung (2017), the nature of work also positively affects the employee's work motivation (β = 0.271; P-value = 0.000; f^2 = 0.140). During a dangerous epidemic, the nature of work is also one of the factors that employees care about, the nature of work is interesting and attractive, giving employees a working spirit, and stimulating them to be creative and complete the job well. Stress at work and worries about the risk of infection will make employees lose motivation to work, and the quit rate will be very high.

Relationship with Colleagues also has a positive effect on MOT (β = 0.162; P-value = 0.007; f^2 = 0.038). This finding has also been demonstrated by Luu et al. (2013). When the relationship between colleagues is close and sociable, they are willing to help each other in work, to share difficulties in work and life, and to share working experiences. This is quite a necessity when having to work during a stressful period due to the COVID-19 pandemic, many barriers, work pressure, psychological pressure, changes, conditions and nature of work.

Relationship with Superiors has a positive effect on MOT (β = 0.176, P-value= 0.015, f^2 = 0.032). When employees receive support from their superiors, they feel less pressured when working during complicated epidemics. According to Grant (1990), "employees' work motivation depends greatly on what managers perform". Similar to Thuy and Nhung (2018) and Chowdhury (2014), a good relationship with superiors will give employees a lot of motivation to work.

Training has a positive effect on MOT (β = 0.169, P-value = 0.007 and f^2 = 0.032). This result is consistent with Dung & Tri (2021). To help employees work more efficiently during the COVID-19 pandemic, businesses need to focus on the training process, helping employees acquire the necessary knowledge and skills for the job.

Working conditions: different from Thuy & Nhung (2018) and Taguchi (2015), CON does not affect MOT (β = -0.012, P-value = 0.821, f^2 = 0.000). The reason may be that during the pandemic, working conditions are not good enough for their work, or maybe some employees have to work from home.

Growth opportunity is not significant (β = -0.052, P-value = 0.352, f^2 = 0.004). Due to the impact of the pandemic, employees' concerns may focus mainly on how to get the job done, how to keep the job, or how to maintain a stable salary for life... Similar to Maslow's (1943) need theory, when basic needs are satisfied, higher needs appear, so growth opportunity has not been paid much attention at this time. This is different from Dung & Tri (2021), Chowdhury (2014), and Marewo et al. (2020), because they did research during a period when there was no epidemic.

Similarly, ***Recognition*** is not significant (β = -0.034, P-value = 0.526, f^2 = 0.002), while previous studies have proved that recognition is one of the factors that promote work motivation (Chowdhury, 2014).

Besides, R^2=0.687 shows that the independent variables explained 68.7% of the dependent variable. To measure the predictive power of the model, Stone and Geisser (1974) proposed the Q^2

index - the coefficient of predicting out-of-sample predictive power. In this study, the coefficient $Q^2 = 0.450$ ($Q^2 > 0$) supports the predictive ability of the structural model.

Table 5: Structural equation model results

Hypotheses	Coefficients	P Values	f2	Support
H1: Nature of work → employee motivation	0.271	0.000	0.140	Supported
H2: Working conditions →employee motivation	-0.012	0.821	0.000	Not supported
H3: Recognition → employee motivation	-0.034	0.526	0.002	Not supported
H4: Training →employee motivation	0.169	0.007	0.032	Supported
H5: Growth opportunity → employee motivation	-0.052	0.352	0.004	Not supported
H6: Compensation → employee motivation	0.328	0.000	0.153	Supported
H7: Relationship with superiors → employee motivation	0.176	0.015	0.032	Supported
H8: Relationship with colleagues → employee motivation	0.162	0.007	0.038	Supported

6. Conclusion

The purpose of this study is to investigate factors impacting employees' work motivation during the COVID-19 pandemic, under Maslow's theory of needs (1943) and Vroom's expectation theory (1964). The analysis results show that Compensation, Nature of work, Relationship with superiors, Training, and Relationship with colleagues have a positive impact on employees' working motivation, while Working conditions, Growth Opportunities, and Recognition do not. In this difficult period, managers need to pay attention to paying a reasonable salary so that their employees can ensure the payment of living expenses and needs in their lives; to understand the capacity of the employees and assign tasks following their knowledge and work level; to communicate more with employees and solve the potential problems of subordinates promptly solve; to enhance employee training to adapt to the changing working environment; to create a supportive and sharing working environment among employees.

References:

Abbott, J. B., Boyd, N. G., & Miles, G. (2006). Does type of team matter? An investigation of the relationships between job characteristics and outcomes within a team-based environment. The Journal of Social Psychology, 146(4), 485-507.

Arman, F. (2009). Employees motivation at Areco India manufacturing private Limited. The MBA Degree Course of Bangalore University, 38.

Bartol, K.M., & Martin, D.C. (1998). Management, McGraw-Hill, New York.

Bosma, H., van Boxtel, M. P., Ponds, R. W., Houx, P. J., Burdorf, A., & Jolles, J. (2003). Mental work demands protect against cognitive impairment: MAAS prospective cohort study. Experimental aging research, 29(1), 33-45.

Carr, G. G. (2005). Investigating the motivation of retail managers at a retail organisation in the Western Cape (Doctoral dissertation, University of the Western Cape).

Chowdhury, D. M. S. (2014). Understanding employee motivation: the case of non-teaching staff of a public university. 8.

Daniel S. Soper (2019). Free Statistics Calculators. Retrived on December 10, 2021. From: https://www.danielsoper.com/statcalc/calculator.aspx?id=1

District 10, Ho Chi Minh City. Scientific Journal, Tra Vinh University, (8), 66-63.

Grant, P. C. (1990). The effort-net return model of employee motivation: Principles, propositions, and prescriptions. Quorum Books, New York.

Ha, B., Thu, B., Le Nguyen Doan, K., & Khoi, Đ. (2019). Research of factors affecting the working motivation of personal manufacturers directly manufacturing in Vietnam Machinery Installation Corporation (LILAMA).

Hair Jr, J., Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM). Sage publications.

Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. Structural Equation Modeling, 17(1), 82-109.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115-135.

Hill, C. W., & Jones, G. R. (2008). Strategic Management: An Integrated Approach. by Houghton Mifflin. Boston USA.

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. Strategic Management Journal, 20(2), 195-204.

Hung, V. M. (2017). Factors affecting the work motivation of employees at a public utility one-member limited liability company in Phu Nhuan district, Ho Chi Minh City. Master's Thesis Ho Chi Minh City of Huflit University.

Kovach, K. A. (1987). What motivates employees? Workers and supervisors give different answers. Business Horizons, 30(5), 58-65.

Kovach, K. A. (1995). Employee motivation: Addressing a crucial factor in your organization's performance. Employment Relations Today, 22(2), 93-107.

Lindner, J. R. (1998). Understanding employee motivation. Journal of extension, 36(3), 1-8.

Luu, T.B.N., Luu, H.M., Luu T.T., Nguyen, T.K.N., T.T.N.T, Nguyen, T.T.T & Le, T.D. (2013). Factors affecting the work motivation of employees at hotel. Scientific journal of Ho

Ly, N. T. (2015). Factors affecting the working motivation of small and medium enterpraises in Ho Chi Minh City. Economic Development Review, 26(3), 64-81.

Marewo, N. T., Mutongi, C., Nyoni, T., & Nyoni, S. P. (2020). The Impact of Employee Motivation on Employee Performance. International Journal of Advance Research and Innovative Ideas in Education, 6(6), 1487-1502.

Maslow, A. H. (1943). A theory of human motivation. Psychological Review, 50, 370- 396.

Nelson, B. (1996). Dump the cash, load on the praise. Personnel Journal.

Owusu, T. (2012). Effects of motivation on employee performance: A case study of Ghana commercial bank, Kumasi zone. Unpublished MBA Thesis, Kwame Nkrumah University of Science. Kumasi, Ghana.

Phuong, N. L. (2016). Factors affecting the work motivation of employees at Binh Dinh Shoe Company. Master's thesis in Economic, University of Finance-Marketing.

Pinder, C. C. (2014). Work motivation in organizational behavior. Psychology Press.

Taguchi, Y. (2015). Factors forming work motivation in Japan. Procedia Manufacturing, 3, 717-722.

Thuy, T. T. P., & Nhung, T. T. B. (2018). Factors affecting work motivation of office workers-a study in Ho Chi Minh City, Vietnam. Business & IT, VIII (2), 2-13. https://doi.org/10.14311/bit.2018.02.01.

Vroom, V.H. (1964). Work and motivation. Wiley, New York, US.

EFFECTS OF INTERNAL FACTORS OF FOOD COMPANIES LISTED IN VIETNAM STOCK MARKET ON THEIR PROFITABILITY

PhD. Le Thanh Huyen* - PhD. Tran Thi Thu Trang*

Abstract: ***In this article, we investigate some important internal factors influencing the profitability of listed food companies in Vietnam. In order to complete the research objectives, data from 41 listed food companies in Vietnam between 2015 and 2022 is collected and analyzed. By using the regression analytical technique, we find out the impact of factors on the profitability of studied companies. The empirical study shows that the modification in firm size, quick ratio, leverage, and asset management could result in the change in the financial performance of studied food enterprises.***

• Keywords: *food companies, profitability, internal factors.*

JEL codes: G30

Date of receipt: 12th September, 2023

Date of delivery revision: 22th September, 2023

Date of receipt revision: 27th October, 2023

Date of approval: 01st December, 2023

Tóm tắt: *Trong bài báo này, chúng tôi nghiên cứu tác động của một số yếu tố bên trong quan trọng đến khả năng sinh lợi của các công ty thực phẩm niêm yết tại Việt Nam. Để hoàn thành nghiên cứu này, dữ liệu của 41 công ty thực phẩm niêm yết trên thị trường chứng khoán Việt Nam giai đoạn từ 2015 đến 2022 đã được thu thập và phân tích. Bằng kỹ thuật phân tích hồi quy, kết quả nghiên cứu cho thấy tác động của các yếu tố này lên khả năng sinh lợi của các công ty trong mẫu nghiên cứu. Nghiên cứu thực nghiệm này cho thấy quy mô doanh nghiệp, khả năng thanh toán nhanh, đòn bẩy tài chính và quản trị tài sản có tác động trực tiếp đến hiệu quả tài chính của doanh nghiệp trong nghành thực phẩm.*

• Từ khóa: *doanh nghiệp thực phẩm, khả năng sinh lợi, yếu tố bên trong.*

1. Introduction

Coming from the all-important role of good profitability for the growth of a company, this indicator attracts rising attention from many people, such as owners, managers, creditors, business partners, and service suppliers. This figure can give them valuable implicit information that helps them to evaluate the development potential of the company, and almost all of them believe more in a firm with increasing profitability. However, improving this indicator is challenging, and it depends on many factors, especially internal ones of the company. Determining these factors and their impact on the firm financial performance is meaningful to Vietnamese businesses, which could offer them precious ideas to grow their profit indicator. That activity is more necessary to food firms because their business result is not commensurate with the potential of the economic environment, the beneficial policies to them, and their ability yet. Clearly, the rapid development of the economy creates a range of chances for food enterprises to expand their markets through trading with foreign business partners. For instance, Vietnam has had a lot of effective free trade agreements (FTA) with other nations like EU (2020), the United Kingdom (2021), China, Korea, Japan, Australia, New Zealand (2022), Israel (2023), offering opportunities for food companies to access international markets. Nevertheless, ineffective business strategies have made them miss valuable opportunities to grow, which is really risky for food companies with low profitability because they cannot accumulate enough capital for reproduction and expansion. That situation became more challenging when difficulties of the post-COVID-19 period and the ongoing financial crisis turned into menaces for their operations. Understanding the crucial position of profitability, food companies in Vietnam have been trying their

** Thuongmai University, Hanoi, Vietnam; email: lethanhhuyen@tmu.edu.vn - tranthithutrang@tmu.edu.vn*

best to occupy the domestic and foreign markets. However, that way is not easy to follow when the competition in the food industry is increasingly fiercer. Besides external obstacles, there is a problem that should be coped with as soon as possible, it is the matter of hygiene and food safety. In fact, although international trade is strongly developed in recent years, a lot of countries tend to use this non-tariff barrier to protect their domestic economy. In addition to guaranteeing the health of consumers, high benchmarks on imported food are effective in limiting competition of foreign companies that often come from developing countries like Vietnam, because these companies have competitive advantages like cheap production costs. That method appears effective, and the high quantity of imported food products has been refused in some nations posing difficult standards, such as European countries, the United States, Japanese. So as to tackle this obstacle, the best measure is to meet rigorous standards of hygiene and food safety through having a good food safety certificate. In fact, achieving high standards of hygiene and food safety is the basis of sustainable development for companies in the food sector because it makes them more reliable to consumers. That scheme is seen as a wise strategy. Nonetheless, choosing a certificate is also a headache for managers, because a better certificate requires more time and money. In some cases, pursuing so high standards can have a negative impact on firm profitability.

The above reality leads to the need to study factors, especially internal factors, influencing the profitability of Vietnamese food companies. This issue has been studied by many researchers, but until now, they have not reached a consistency in determinants of a company's profitability yet. In addition, although many researchers agree that the adoption of suitable food safety standards plays an important role in the improvement of profitability, its influence is still debatable. Based on the above reasons, we address these research gaps by continuing to dig deeper into factors influencing firm profitability, where we consider the adoption of food safety standards as a variable of research models

2. Literature review

2.1. The firm profitability

For financial analysts, profitability can be measured by different ratios, and each of them brings different precious information (Almajali *et al.*, 2012). If investors want to have a comprehensive picture of the firm financial performance, they need to combine the analysis of numerous financial ratios. In our study, based on researching the characteristics of Vietnamese food companies in the period from 2015 to 2022, we use two indicators, consisting of return on equity (ROE) and return on capital (ROC), to measure firm profitability. Theoretically, those two ratios can reveal the factual financial status of the company.

+) For the indicator of return on equity, in order to calculate it, the analyst needs to use information in both the balance sheet and the income statement, thus it can offer deep insight into the firm financial operations. In addition, this ratio is a good tool that shareholders often use to cope with the agency problem that comes from the characteristics of corporations. Therefore, ROE is one of the most used ratios in evaluating the firm financial performance (Rappaport, 1986; Monteiro, 2006).

+) For the indicator of return on capital, this ratio is increasingly favorite for financial analysts because it can help them know accurately the return on fee-bearing capital. Furthermore, it mainly concentrates on the operations of the company, so its information can lead to a deeper look at firm profitability.

2.2. Internal factors

2.2.1. Meeting food safety standards

This issue can change the competitive advantage of food companies, so it should not be disregarded in research on determinants of profitability. In fact, it is investigated by researchers like Deming (1986), Bhandari (1988), Haversjo (2000), Corbett et al. (2002), Heras et al (2002), Eriksson & Hansson (2003), Johnson & Soenen (2003), Naser et al (2004), and they find out evidence of its positive influence.

However, which certificate should be chosen is also a headache for managers, because there is a strong relationship between pursuing benchmarks of food safety and manufacturing costs, which dramatically affect output prices, and finally impact the profitability of companies. In Vietnam, there are a lot of accepted certificates for food safety, such as ISO 22000, GMP, HACCP, FSSC. Nonetheless, currently, achieving an ISO 22000 certificate is evaluated as a wise choice for Vietnamese food

companies because of its capacity to improve firm profitability. Beside improving the firm competitive ability thanks to its stricter requirements of food safety than other certificates like GMP or HACCP, ISO 22000 standards can boost the firm development by being accepted by many countries in the world. In addition, in comparison with some other certificates like FSSC 22000, responding to the demands of ISO 22000 does not consume a high amount of money, which makes it more interesting to companies. Moreover, controlling strictly and successively the production process can decrease the cost of tackling damaged products, which can lower the price, increase their revenue, and finally improve their profitability.

Based on studying theory and the real situation, we pose the following hypothesis:

H1: There is a difference in the profitability between food companies with ISO 22000 and others.

2.2.2. Liquidity

Theoretically, the factor of solvency keeps a crucial position in the firm development, especially its profitability, because when a company loses the capacity to meet its obligations in due time, its financial status is probably rated less by creditors, which can lead to a reduction in the capacity to develop, and ultimately a decrease in the ability to attract more attention from investors in the future (Owolabi & Obida, 2012). In order to prove the theoretical argument, an abundance of empirical studies were carried out, such as research by Adams & Buckle (2003), Hu *et al.* (2006), Victor *et al*. (2013), Zehra & Azam (2012), Fazzari *et al.* (1988), and they indicate the evidence of the positive impact of liquidity on firm profitability.

Based on studying theory and the real situation, we pose the hypothesis as follows:

H2: The firm's liquidity affects its profitability.

2.2.3. Asset management

Many researchers, such as Stephen *et al.* (2010), Wu, Li & Zhu (2010), Seema et al. (2011), Dinh & Sha (2011), agree that a company which well manages its assets has been able to grow its financial performance. That statement is supported by the theory which points out that an effective use of assets can lead to a rise in sales, thereby enhancing the firm profitability. Based on researching theory and the real situation, we pose the hypothesis as follows:

H3: The firm's asset management affects its profitability.

2.2.4. Financial Leverage

Financial leverage is one of the most important ratios that stakeholders are concerned with because it directly reflects the capital structure that the company is maintaining. The separation in ownership and directorship forces shareholders of a corporation to spend enough attention on decisions given by managers, and leverage helps them to evaluate partly the capital-attracting plan of their firm. In fact, making use of debt to invest has both pros and cons. In the period when the economy well develops, this capital offers firms the chance to catch business opportunities, but as bad economic signs appear, it rapidly transfers into a burden that can lead the company to bankruptcy situation. Therefore, the impact of this factor is still discussible among economists. For instance, Humera et al. (2011), Burja (2011) use their empirical study to prove that financial leverage has a positive influence on firm profitability. However, Al-Jafari & Samman (2015) and Asimakopoulos et al. (2009) indicate the negative impact of this capital source.

Based on studying theory and the real situation, we pose the hypothesis as follows:

H4: The firm's leverage affects its profitability.

2.2.5. Growth in sales

The impact of growth in sales is often accounted for when researchers build a model of factors influencing the firm profitability because of its ability to measure business success (Deitiana, 2011). A range of research, such as studies of Krishnan & Moyer (1997), Liu (2010), Zeitun & Tian (2007), and Yazdanfar (2013), show its positive impact on the firm financial performance. This result could be explained that when the growth in sales is improved, it reveals some good signs from the market. In that case, the firm can consider plans to expand the market share or launch new products. Additionally, if this indicator is enhanced, investors are more interested in the company, so it probably receives more capital to complete its business strategy, and finally improve its profitability.

Based on studying theory and the real situation, we pose the hypothesis as follows:

H5: The firm's growth in sales affects its profitability.

2.2.6. Firm size

The size of a company can change its profitability in different ways. On the one hand, investors, creditors, stakeholders, and consumers tend to give more priority to large companies, resulting in a chance to raise their profitability. On the other hand, a bigger firm often has to spend more on management costs, which could create some negative influence on its financial performance. For these reasons, there are lots of empirical studies on the effect of firm size on profitability that have contrasting conclusions. For example, Vijayakumar (2011), Stierwald (2009), Erasmus (2013), Ayele (2012), indicate a positive relationship between these two variables. Meanwhile, Ramasamy (2005), Dhawan (2001), Salman & Yazdanfar (2012) prove that the factor of firm size impacts negatively the variable of profitability.

Based on studying theory and the real situation, we pose the hypothesis as follows:

H6: The firm's size affects its profitability.

2.2.7. Firm age

Firm age is also a factor that should be examined in research on the firm profitability. The influence of this factor is still debatable among economists. Some of them, such as Liargovas & Skandalis (2008); Agarwal & Gort (2002), support the viewpoint of the positive effect of this variable. To specify, they explain that firms of higher age are often considered as companies possessing more experience in tackling arising issues and more skills to make use of business opportunities in the market, which offers them a bigger chance to reach greater profitability. By contrast, some other researchers like Sorensen & Stuart (2000); Loderer, Neusser, and Waelchli (2016) believe that older firms could have to face difficulties coming from updating new technologies of manufacturing and management, leading to decreasing their competitive capacity with younger companies, and finally a fall in their profitability.

Based on studying theory and the real situation, we pose the hypothesis as follows:

H7: The firm's age affects its profitability.

3. Data and methodology

3.1. Data

Our research mainly relies on secondary data from Vietnamese food companies from 2015 to 2022. In order to complete the objectives of studying the influence of seven variables on firm profitability, we use the data from 41 listed food companies. Those companies meet some of our requirements that can guarantee the reliability of this study, including selected subjects that have been in business before 2015; Their business operation has no disruption; Information of both firms achieving ISO 22000 standards and companies without this certificate is collected.

3.2. Methodology

3.2.1. Models

Our models are written as follows:

(1) $ROE_{i,t} = \beta_0 + \beta_1 LIQ + \beta_2 AM_{i,t} + \beta_3 FL_{i,t} + \beta_4 GR + \beta_5 FS_{i,t} + \beta_6 FA_{i,t} + \alpha_i + \varepsilon_{i,t}$

(2) $ROC_{i,t} = \beta_0 + \beta_1 LIQ + \beta_2 AM_{i,t} + \beta_3 FL_{i,t} + \beta_4 GR + \beta_5 FS_{i,t} + \beta_6 FA_{i,t} + \alpha_i + \varepsilon_{i,t}$

The measurement of the variables is shown in the Table 1

Table 1: Variable's measurement

Variables	Symbol	Measurement
Response variable (Y)		
Return on equity	ROE	$\frac{\text{Net income}}{\text{Average Shareholder's Equity}}$
Return on capital	ROC	$\frac{\text{EBIT}(1 - \text{Tax rate})}{\text{Interest-bearing debt + Equity}}$
Explanatory variables (X)		
Liquidity	LIQ	$\frac{\text{Current assets - Inventory}}{\text{Current liabilities}}$
Asset management	AM	$\frac{\text{Sales}}{\text{Total assets}}$
Financial Leverage	FL	$\frac{\text{Total liabilities}}{\text{Total assets}}$
Growth in sales	GR	$\frac{(Sales_t - Sales_{t-1})}{Sales_{t-1}}$
Firm size	FS	Natural logarithm of total assets
Firm age	FA	The number of years since incorporation.
The adoption of food safety standards	ISO	1: companies with ISO 22000 0: others

3.2.2. Research method

Firstly, we use some tests, including Chow test, Breusch and Pagan Lagrangian multiplier test, and Hausman test, to determine the fit model. Then, the existence of heteroskedasticity and the autocorrelation problems is checked by the Wald test and Wooldridge test. The results help us to

choose a suitable solution to reach the accuracy and effectiveness of the study. To specify, if both issues appear, the Cluster regression is chosen. But if there is only the heteroskedasticity, we use robust standard error estimation. Finally, to evaluate the effect of meeting the ISO 22000 standard on profitability, the t-test is used. This process is carried out with the support of STATA version 14.

4. Empirical results

4.1. Panel unit root test

Table 2: Results of Levin, Lin and Chu panel unit root test

Variables	P-value	Status
Variable Y		
Return on equity (ROE)	0.0000	Level
Return on capital (ROC)	0.0000	Level
Variables X		
Liquidity (LIQ)	0.0000	Level
Asset management (AM)	0.0000	Level
Financial Leverage (FL)	0.0000	Level
Growth in sales (GR)	0.0000	Level
Firm size (FS)	0.0000	Level
Firm age (FA)	0.0000	Level

Data source: Stata output

As can be seen from Table 2, all eight variables are stationary at the level and hence have no unit roots.

4.2. Checking for Multicollinearity

The VIF results show that the multicollinearity problem does not exist in both models.

Table 3: VIF result

	ROE		ROC	
Variable	VIF	1/VIF	VIF	1/VIF
FL	2.64	0.379494	2.64	0.379494
LIQ	2.51	0.398366	2.51	0.398366
AM	1.28	0.783003	1.28	0.783003
FS	1.27	0.787089	1.27	0.787089
GR	1.1	0.909487	1.1	0.909487
FA	1.09	0.91358	1.09	0.91358
Mean VIF	1,65		1,65	

Data source: Stata output

4.3. Descriptive statistics

Table 4: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	328	-0.1109021	2.813578	-39.28373	5.352876
ROC	328	0.0325744	0.4125561	-5.950293	0.9420045
GR	328	0.0986013	0.6008525	-0.9064548	8.771225
LIQ	328	1.258549	1.892856	0.0012212	19.76473
FL	328	0.8372555	2.253488	0.0336223	23.17927
FS	328	27.45933	1.531287	23.55919	32.46804
FA	328	25.2378	12.07209	7	65
AM	328	1.475478	1.087658	0.034247	9.390577
ISO	328	0.5579268	0.4973919	0	1

Data source: Stata output

The number of descriptive statistics partly reflects the real situation of surveyed companies from 2015 to 2022. In reality, that period witnessed a range of opportunities and challenges for the food industry in Vietnam. To specify, between 2015 and 2019, the international economy strongly grew, and Vietnamese food companies operated rather effectively thanks to occupying bigger domestic and foreign markets. Nevertheless, as early as the year 2020, the outbreak of the epidemic of Covid-19 made their performance dramatically negatively impacted. Therefore, the mean values of both ROE and ROC ratios, which are -11.09 and 3.25 respectively, show that the profitability of food companies is not as good as expected.

Regarding the use of debt, the 8-year period saw the high exploitation of surveyed firms of this capital source, making them suffer from an increasingly heavy burden of interest. In the context of strong economic fluctuation, that money-attracting strategy can be risky and lower their profitability. Meanwhile, their liquidity and asset management are not bad with a number greater than 0. Nonetheless, those indicators are not high, meaning that food companies will be underestimated by investors if their operations are not well improved.

4.4. Difference in the profitability between companies with ISO 22000 and others

4.4.1. Model 1

Table 5: T- test result

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	145	0.0974363	0.0117473	0.1414567	0.0742168	0.1206558
1	183	0.1221737	0.0101524	0.1373394	0.1021422	0.1422053
combined	328	0.111238	0.0077028	0.1395038	0.0960847	0.1263913
Diff		-0.0247374	0.0154733		-0.0551775	0.0057027
diff = mean(0) - mean(1)					*t = -1,5987*	
Ho: diff = 0					*degree of free dom = 326*	
Ha: diff < 0			*Ha: diff != 0*		*Ha: diff > 0*	
Pr(T < t) = 0,0554			*Pr(T >t) = 0,1109*		*Pr(T > t) = 0,9446*	

Data source: Stata output

Group 0: Companies without ISO 22000

Group 1: Companies with ISO 22000

The T-test result of 1st model indicates that there is no difference in the profitability of firms with ISO 22000 and others.

4.4.2. Model 2

Table 6: T- test result

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	145	0.0593993	0.0057994	0.0698344	0.0479363	0.0708623
1	183	0.0710111	0.0050003	0.067643	0.061145	0.0808771
combined	328	0.0658778	0.0037965	0.0687576	0.0584092	0.0733465
Diff		-0.0116118	0.0076291		-0.0266204	0.0033968
diff = mean(0) - mean(1)					t = -1,5220	
Ho: diff = 0					degree of free dom = 326	
Ha: diff < 0			*Ha: diff != 0*		*Ha: diff > 0*	
Pr(T < t) = 0,0645			*Pr(T >t) = 0,1290*		*Pr(T > t) = 0,9355*	

Data source: Stata output

Group 0: Companies without ISO 22000
Group 1: Companies with ISO 22000

The T-test result of 2nd model indicates that there is no difference in the profitability of firms with ISO 22000 and others.

4.5. Correlation analysis

Table 7: Correlation matrix

ROE	ROE	ROC	GR	LIQ	FL	FS	FA	AM
ROE	1.0000							
ROC	0.6972 (0.0000)	1.0000						
GR	0.2166 (0.0001)	0.2460 (0.0000)	1.0000					
LIQ	0.0244 (0.6598)	0.2235 (0.0000)	-0.0368 (0.5070)	1.0000				
FL	-0.0682 (0.2181)	-0.4095 (0.0000)	0.0141 (0.7996)	-0.7462 (0.0000)	1.0000			
FS	0.1690 (0.0021)	0.1962 (0.0003)	0.2288 (0.0000)	-0.1224 (0.0267)	0.0027 (0.9612)	1.0000		
FA	-0.0491 (0.3750)	-0.0231 (0.6771)	-0.0218 (0.6940)	-0.0373 (0.5007)	-0.0835 (0.1313)	-0.1740 (0.0016)	1.0000	
AM	0.3158 (0.0000)	0.4613 (0.0000)	0.1123 (0.0422)	0.0856 (0.1219)	-0.2449 (0.0000)	-0.2688 (0.0000)	0.2162 (0.0001)	1.0000

Data source: Stata output

As can be seen from Table 7, the variable of ROE has a significant positive correlation at the 0.01 level with variables of growth in sales (GR), firm size (FS), and asset management (AM).

On the other hand, ROC significantly positively correlates with some factors, including growth in sales (GR), liquidity (LIQ), firm size (FS), and asset management (AM), but it has a significantly negative correlation with financial leverage (FL).

4.6. Regression result

4.6.1. Model 1

With the results of some necessary tests (including Chow test, Breusch and Pagan Lagrangian multiplier test, and Hausman tests), the random effect model is concluded to be suitable for this study. Then, carrying out Wald test and Wooldridge test reveals us that the heteroskedasticity problem exists, so in order to obtain accurate results, we use robust regression

Table 8: Regression result

	OLS		FEM		REM			
					Robust			
ROE	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
GR	0.0389425	0.0264677	0.0353267	0.0275191	0.0389425	0.0264677	0.0389425	0.0318174
LIQ	0.0226301	0.0146513	0.0320482*	0.0166461	0.0226301	0.0146513	0.0226301	0.0139105
FL	0.0361031	0.0540598	0.0016156	0.0665545	0.0361031	0.0540598	0.0361031	0.0620969
FS	0.0232264**	0.0093121	0.0063947	0.021002	0.0232264**	0.0093121	0.0232264	0.0093811**
FA	-0.0011567	0.0009885	-0.0025122	0.0029315	-0.0011567	0.0009885	-0.0011567	0.0010022
AM	0.0651829***	0.0143659	0.043049*	0.0245308***	0.0651829	0.0143659	0.0651829	0.0179082***
_cons	-0.6348513**	0.2763543	-0.0982189	0.5728066	-0.6348513**	0.2763543	-0.6348513	0.2626859**

*Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1*

Data source: Stata output

As can be seen from Table 8, two explanatory variables that have a significant positive impact on ROE of companies are firm size (FS) and asset management (AM).

4.6.2. Model 2

Different from the 1st model, Chow test, Breusch and Pagan Lagrangian multiplier test, and Hausman tests show that in the 2nd model, fixed effect regression is more suitable. For this model, both heteroskedasticity and the autocorrelation problem appear so we use Cluster regression to gain better results.

Table 9: Regression result

	OLS		FEM				REM	
				Robust				
ROC	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
GR	0.0151771	0.0097913	0.0105251	0.0098479	0.0105251	0.0165731	0.0151771	0.0097913
LIQ	0.0124495**	0.005594	0.0192933***	0.0059569	0.0192933***	0.0063036	0.0124495**	0.005594
FL	-0.0870303***	0.0210355	-0.1088078***	0.0238169	-0.1088078***	0.0282373	-0.0870303***	0.0210355
FS	0.0181642***	0.0040335	0.0278673***	0.0075157	0.0278673***	0.0065869	0.0181642***	0.0040335
FA	-0.0005491	0.000437	-0.0017849*	0.0010491	-0.0017849**	0.0008746	-0.0005491	0.000437
AM	0.0364603***	0.0060137	0.0285063***	0.0087785	0.0285063**	0.0138375	0.0364603***	0.0060137
_cons	-0.4363751***	0.1181865	-0.6553494***	0.2049823	-0.6553494***	0.1971116	-0.4363751***	0.1181865

*Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1*

Data source: Stata output

The results in Table 9 indicate that the firm profitability (measured by ROC) is significantly influenced by five factors consisting of liquidity (LIQ), financial leverage (FL), firm size (FS), firm age (FA), and asset management (AM). However, their impact is different from each other. While variables of LIQ and AM positively impacted

ROC, three remaining factors negatively affected the firm profitability.

5. Conclusion

Developing in an agricultural country, food companies keep a crucial position in the national economy, therefore they often receive a range of priorities, but their profitability is not as high as expected. So as to find out the reasons for this phenomenon, we carried out this study with the data of 41 listed food companies, and our investigation help us to have some results of research as follows:

First, variables namely FS (firm size) and AM (asset management) significantly positively affect the profitability measured by return on equity. It means that if the ratios of size and asset management of food companies were improved, their financial performance would be enhanced. This result was reasonable for the food industry which was a labor-intensive sector and its outcome depended a lot on the effectiveness of asset management

Second, the modification in firm size, quick ratio, leverage, and asset management could result in a change in return on capital. Similar to the conclusion of the first model, the increase in ratios of LIQ and AM led to a rise in the firm profitability. In addition, the use of leverage had some negative influence on the firm performance. That result could be explained by the effect of the outbreak of Covid-19 when a range of food companies faced an abundance of challenges coming from policies of the Government to tackle the epidemic, the limitation in household expenditure, and the halt of the international supply chain. That situation made the use of debt less effective, creating a heavy burden on the company with the high financial leverage. Moreover, our empirical also shows that the achievement of ISO 22000 did not create a difference in the profitability of food companies. That resulted from the difficulties of the macroeconomy in the period between 2020 and 2022, when the income of consumers dramatically decreased, leading to a fall in their attention to hygiene standards.

References:

Abel Ebel Ezeoha (2008), Firm size and corporate financial-leverage choice in a developing economy, Evidence from Nigeria", The Journal of Risk Finance, 9(4), pp. 351-364

Adams, M., & Buckle, M. (2003), "The determinants of corporate financial performance in the Bermuda insurance market", Applied Financial Economics, 13(2), pp.133-143.

Al-Jafari and Al Samman (2015), "Determinants of profitability: evidence from industrial companies listed on Muscat Securities Market", Review of European Studies, 7 (11), pp.303-311

Almajali, Y. A., Alamro, S. H., và Al-Soub, Y. Z. (2012), "Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange", Journal of Management Research.

Andreas Stierwald (2010), "Determinants of Profitability: An Analysis of Large Australian Firms", Melbourne Institute Working Paper No. 3/10

Asimakopoulos et al. (2009), "Firm-specific and economy wide determinants of firm profitability-Greek evidence using panel data", Managerial Finance, 35 (11), pp.929-940.

B.Ramasamy (2005), "Firm size, ownership and performance in the Malaysian palm oil industry", Asian Academy of Management Journal of Accounting and Finance, 1, pp.81-104.

Brealey, R. A., Meyers, S. C. & Alan, J. M. (2008), Fundamentals of corporate finance, 6th edition, The McGraw−Hill Companies.

Burja (2011), "Factors influencing the company's profitability", Annales Universitatis Apulensis Series Oeconomica, 13 (2), pp.215-224.

Claudio Loderer, René Stulz, Urs Waelchli (2016), "Firm Rigidities and the Decline in Growth Opportunities", Management Science, Articles in Advance, pp.1–20

Colvin, G. (2010), "Many performance ratios lie about a company's health. A new metric, EVA Momentum has emerged that can't easily be gamed", Fortune, 161(1), pp. 22.

Deitiana T. (2011), "The effect of financial ratios, sales growth and dividends is limited stock prices", Journal of Business and Accounting, 13 (1), pp.57-65.

Ding Hua and Sha Rui (2011), "Empirical Analysis of the Impact of Capital Structure on Performance in Jilin Forest Industry Co., Ltd", Issues of Forestry Economics, 31 (2), pp. 141-144.

Erasmus, F.K. (2013), "Impact of size and age on firm performance: evidence from microfinance institutions in Tanzania", Research Journal of Finance and Accounting, 4 (5), pp. 105-116.

G.A. Ayele (2012), "Factors Affecting profitability of insurance companies in Ethiopia: Panel evidence", Addis Ababa University, Ethiopia.

General statistics office, Statistical Yearbook of Vietnam

Godwin Ohene Sekyere (2016), Empirical Forecasting of Returns during the Great Recession through Economic Value Added, Walden University

Kumar,B.,& Tawari, R.(2015) "Drivers of Firm's Value: Panel data evidence from Manufacturing Industry", Asian Journal of Finance and Accounting, 7 (2), pp.1-22

Habibollah Nakhaei et al. (2013), "Evaluation of company performance with accounting and economic criteria in Bursa Malaysia", Journal of global business and economics, 6(1), pp.49-62

Hu, R. and Michael A. (2006), "Antecedents and Performance Outcomes of Diversification: A review and critique of theoretical perspectives", Journal of Management, 16, pp. 461-509.

Humera et al (2011), "Corporate governance and firm performance: Case study of karachi stock market", International Journal of Trade Economic and Finance, 2, pp.39-43

Krishnan and Moyer (1997), "Performance, Capital Structure and Home Country: An analysis of Asian Countries", Global Finance Journal, 8(1), pp.129-143.

Liu Qian (2010), "Establishing a Model of Firm Financial Performance Evaluation", Accounting and Auditing, 6, pp. 249-250.

Monteiro, A (2006), "A quick guide to financial ratios", Personal Finance, 2006(307), Available from: https://hdl.handle.net/10520/EJC77164

Nakhaei, H., Hamid, N., Anuar, M., & Nakhaei, K. (2012), "Performance Evaluation Using Accounting Variables (Net Profit and Operational Profit) and Economic Measures", International Journal of e-Education, e-Business, e-Management and e-Learning, 2(5).

Owolabi, S.A. and Obida, S.S. (2012), "Liquidity management and corporate profitability: case study of selected manufacturing companies listed on the Nigerian stock exchange", Business Management Dynamics, 2(2), pp.10-25.

P. G. Liargovas & K. S. Skandalis (2012), "The impact of leverage and other key variables on business performance: evidence from Greece", Int. J. Economics and Business Research, 4(4), pp.472-485

R. Agarwal, M. Gort, "Firm and Product Life Cycles and Firm Survival", American Economic Review, 92, pp.184-190

R.Dhawan (2011), "Firm size and productivity differential: Theory and evidence from a panel of US firms", Journal of Economic Behaviour and Organization, Vol. 44, pp. 269-293.

Salman, A.K & Yazdanfar, D. (2012), "Profitability in Swedish Micro Firms: A Quantile Regression Approach", International Business Research, 5(8), pp.94-106

Seema Gupta, P. K. Jain and Surendra S. Yadav (2011), "Impact of MoU on Financial Performance of Public Sector Enterprises in India", Journal of Advances in Management Research, 8 (2), pp. 263-284.

Sørensen, Jesper B., and Toby E. Stuart (2000), "Aging, Obsolescence, and Organizational Innovation", Administrative Science Quarterly, 45, (1), pp. 81–112.

Stewart, J.B.(1991), The Quest for Value: A Guide for Senior Managers, New York: NY: Harper Business.

Victor et al (2013) "The relationship between liquidity and profitability of listed banks in Ghana", International Journal of Business and Social Sciences, l4 (3), pp.48-56

Vijayakumar, A. (2011), "The determinant of profitability: An empirical investigation using Indian automobile industry", International Journal of Research in Commerce and Management, 2 (1), pp.58-64.

Wu Jingxue, Li Yinan and Zhu Mei (2010), "Empirical Analysis of Rural Influencing Factors on Listed Agribusiness Financial Performance", Agricultural Economics and Management, 3, pp. 22-27.

Yazdanfar, D. (2013), "Profitability determinants among micro firms: evidence from Swedish data", International Journal of Managerial Finance, 9(2), pp.151-160

Zahra, M. and Azam, J. (2012), "The relationship between working capital management and firm performance. Evidence from Iran", International journal of Humanities and Social Science, 2 (2), pp.141-146

Zeitun, R., and Tian, G.G., (2007), "Capital Structure and Corporate performance: Evidence from Jordan", Australasian Accounting, Business and Finance Journal, 1 (4), pp.40-61

THE IMPACT OF ENERGY CONSUMPTION ON ENVIRONMENT QUALITY IN SOUTH-EAST ASIA

PhD. Nguyen Thanh Giang*

Abstract: ***As per our current understanding, limited research has been conducted to investigate the relationship between energy consumption and climate change or environment quality in both developing and developed nations. This paper aims to examine the impact of energy consumption on carbon dioxide emissions - the proxy for environment quality - in South-east Asian countries, encompassing Indonesia, Myanmar, Cambodia, Malaysia, Philippines, Thailand, Singapore and Vietnam. The study employs panel data analysis covering the period from 1971 to 2020 and utilizes various methods such as fixed effects, random effects, and pooled ordinary least squares for analysis. The dataset utilized in this research was sourced from reputable authorities, including the World Development Indicators and the Department of Statistics in the respective countries under study. The findings suggest that energy consumption has a negative effect on CO_2 emissions; and the effect is statistically significant. Therefore, the governments of these countries should take proactive measures to reduce energy usage in both economic activities and daily life, prioritizing climate change mitigation efforts. This study emphasizes the significance of implementing climate change policies, particularly promoting renovation processes and increasing the adoption of renewable energy sources.***

• Keywords: *carbon dioxide emission, energy consumption, fixed effect, pooled OLS, random effect, South-East Asia.*

JEL codes: G30

Date of receipt: 23th August, 2023
Date of receipt revision: 01st November, 2023
Date of delivery revision: 25th August, 2023
Date of approval: 10th November, 2023

Tóm tắt: *Theo hiểu biết hiện tại của chúng tôi, nghiên cứu hạn chế đã được tiến hành để điều tra mối quan hệ giữa tiêu thụ năng lượng và biến đổi khí hậu hoặc chất lượng môi trường ở cả các quốc gia phát triển và đang phát triển. Bài viết này nhằm mục đích kiểm tra tác động của việc tiêu thụ năng lượng đến lượng khí thải carbon dioxide - đại diện cho chất lượng môi trường - ở các nước Đông Nam Á, bao gồm Indonesia, Myanmar, Campuchia, Malaysia, Philippines, Thái Lan, Singapore và Việt Nam. Nghiên cứu sử dụng phân tích dữ liệu bảng trong khoảng thời gian từ 1971 đến 2020 và sử dụng nhiều phương pháp khác nhau như hiệu ứng cố định, hiệu ứng ngẫu nhiên và bình phương tối thiểu thông thường gộp lại để phân tích. Dữ liệu được sử dụng trong nghiên cứu này được lấy từ các cơ quan có uy tín, bao gồm Chỉ số Phát triển Thế giới và Cục Thống kê ở các quốc gia tương ứng được nghiên cứu. Các phát hiện cho thấy tiêu thụ năng lượng có tác động tiêu cực đến lượng khí thải CO_2 và hiệu quả có ý nghĩa thống kê. Vì vậy, chính phủ các quốc gia này cần thực hiện các biện pháp chủ động để giảm mức sử dụng năng lượng trong cả hoạt động kinh tế và đời sống hàng ngày, ưu tiên các nỗ lực giảm thiểu biến đổi khí hậu. Nghiên cứu này nhấn mạnh tầm quan trọng của việc thực hiện các chính sách về biến đổi khí hậu, đặc biệt là thúc đẩy các quá trình đổi mới và tăng cường áp dụng các nguồn năng lượng tái tạo.*

• Từ khóa: *phát thải carbon dioxide, tiêu thụ năng lượng, hiệu ứng cố định, OLS gộp, hiệu ứng ngẫu nhiên, Đông Nam Á.*

1. Introduction

The exploitation and use of fossil energy have always been a top concern for countries, especially those heavily reliant on such resources like Vietnam. Overexploitation not only depletes natural resources rapidly but also has serious impacts on the environment and human health. Fossil energy is derived from fossil fuels, including coal, oil, and natural gas. These fuels are formed from the decomposition of plants and animals over millions of years and typically contain carbon and hydrogen components, making them combustible and able to generate energy. Fossil energy currently constitutes the highest proportion of all exploited energy sources. Among them, coal remains the most extensively extracted resource globally. This is due to several advantages of coal mining

** Academy of Finance; email: nguyenthanhgiang@hvtc.edu.vn*

compared to other sources such as oil or natural gas, including ease of extraction, processing, trade, and transportation.

Notably, coal is widely used in various sectors, such as electricity generation in thermal power plants and as fuel for engines and devices like steam engines and locomotives. This highlights the vital role of coal-fired power plants in the economic development of a nation. Fossil energy plays a crucial role in the economic and social development of humanity as a whole. However, it also brings negative impacts on the environment and human health. Fossil resources took millions of years to form, while human consumption and exploitation rates are exceedingly high, leading to depletion and scarcity of these resources.

If the current extraction rate continues, the available reserves will not be able to meet future demands. According to energy research institutes, there are only approximately 53 years of oil reserves, 113 years of coal reserves, and 55 years of natural gas reserves left globally. The combustion of fossil fuels releases CO_2 and other harmful emissions, contributing to air pollution. Annually, about 21.3 billion tons of CO_2 are emitted into the environment, exacerbating the greenhouse effect and global warming. Additionally, other harmful emissions like NO_2, SO_2, etc., cause acid rain, damaging crops and infrastructure.

Research on the relationship between energy consumption and CO2 emissions receives significant attention due to its connection to global climate change. Economies heavily reliant on the extraction and use of natural energy resources result in environmental pollution. Economic development in countries often revolves around energy consumption, which directly contributes to increasing CO_2 emissions, affecting health and environmental pollution.

Energy plays a critical role in the production and economic development of countries, contributing significantly to their economic growth, production capacity, and trade expansion. However, the extensive use of energy has led to an increase in carbon dioxide emissions - which reflects the environment quality, resulting in climate change and greenhouse effects, negatively impacting people worldwide. Nevertheless, carbon dioxide also possesses positive implications for various industrial and chemical applications.

The rise in CO_2 emissions poses a major environmental threat, causing considerable concern for both emerging and developed nations. The economic growth of developed countries often drives high-energy consumption, leading to increased waste and environmental degradation. Fossil fuels, especially coal, dominate the energy mix of industries, particularly the automotive sector, which is closely associated with economic growth.

Addressing the impact of energy consumption on CO_2 emissions in Southeast Asia, this study utilizes panel data analysis, focusing on developing and developed countries in the region over 1971 to 2020. This research aims to bridge the gap in understanding this relationship in low to middle-income nations and presents its findings in subsequent sections, encompassing methodology, results, and discussions.

The structure of the study is as follows. Section 2 is devoted to the Literature Review. Sections 3 covers Methodology. Empirical results are presented in Section 4. Section 5 proposes the Conclusion and Discussion.

2. Literature review

Several studies have explored the intricate relationships between economic growth, CO2 emissions, and energy consumption in various countries. Muhammad (2019) investigated this relationship across developed, emerging, and MENA (Middle East and North Africa) countries from 2001 to 2017, revealing direct and indirect effects on energy consumption and CO_2 emissions depending on the country's development status. Similarly, Hasnisah et al. (2019) examined the correlation between renewable energy use and CO_2 emissions in Asian developing countries over 1980 to 2020, finding a significant impact of economic growth and energy use on CO_2 emissions.

Moreover, other studies delved into global and regional analyses. Dong et al. (2019) studied

carbon dioxide emissions in different regions and globally, identifying direct relationships between economic growth, population, non-renewable energy, and energy intensity with CO_2 emissions. They also observed a decrease in CO_2 emissions due to renewable energy sources in some regions. Salahuddin and Gow (2014) investigated the connection between energy consumption, CO_2 emissions, and economic growth in Gulf Cooperation Council countries from 1980 to 2012, finding direct relationships between CO_2 emissions and energy consumption, as well as between energy consumption and economic growth.

Saidi and Hammami (2015) explored the relationship between energy use, CO_2 emissions, urbanization, trade openness, and economic growth in 58 countries from 1990 to 2012, noting a positive effect of energy consumption on economic growth and a negative relationship between CO_2 emissions and economic growth. Kasman and Duman (2015) studied the causal relationship between these factors in EU member and candidate countries over the period 1992 to 2010, emphasizing their significance.

A recent study by Miglė Jakučionytė-Skodienė & Genovaitė Liobikienė (2023) highlighted the importance of the household sector in mitigating climate change, investigating determinants such as environmental awareness, climate change policies, and social-demographic variables on electricity, energy for heating, electricity consumption, and CO_2 emissions in Lithuania.

In the context of China, Guo et al. (2023) developed a model to depict the future trajectories of energy consumption and CO_2 emissions in the building sector, projecting peaks in energy consumption and CO_2 emissions between 2025 and 2040 and 2025 and 2035, respectively, with significant uncertainties in electricity consumption.

3. Methodology

3.1. Research Data

The study employs data sourced from the World Development Indicators (WDI) database and the Department of Statistics (DOS) in relevant South-east Asian countries. The dataset covers the period from 1971 to 2020, with yearly observations. The data analysis is performed using Stata 15 software.

The dataset used in this research comprises energy consumption and CO_2 emissions, serving as proxies to investigate the interconnection between energy development and environment quality. The study focuses on eight South-east Asian countries, namely Indonesia, Myanmar, Cambodia, Malaysia, Philippines, Thailand, Singapore and Vietnam.

Table 3.1. Measurement of variables

	Abbreviation	Source
Independent Variables		
Energy consumption (kWh per capita)	ENERGY	WDI
Dependent Variables		
CO2 emission (kilo tons)	CO2	WDI

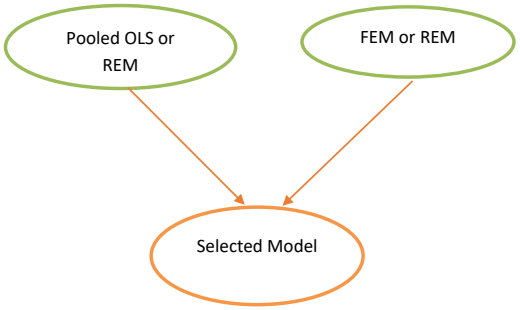
Source: Author

3.2. Research model

The impact of energy consumption on CO_2 emissions has been a subject of investigation in numerous empirical studies worldwide. Theoretical considerations suggest the use of a panel model with Pooled Ordinary Least Square (Pooled OLS), Fixed Effects Model (FEM), and Random Effects Model (REM) methods.

The majority of previous studies have also utilized common regression models, including Pooled OLS, FEM, and REM. In this study, we will adopt a step-by-step approach to analyze and determine the most suitable model among the three. The analytical process is visually presented in the following figure:

Figure 3.1. Model selection



In order to investigate this relationship, we proposed the following model:

$CO_{2it} = f(ENERGY_{it})$

The equation for the fixed effect model is as follows:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} \quad (2.1)$$

$$CO_{2it} = \alpha_i + \beta_1 ENERGY_{it} + u_{it} \quad (2.2)$$

In which:

α_i $(i=1....n)$ is the unknown intercept for each country,

Y_{it} is the dependent variable; i, and t denote for the country i and time t. This can be abbreviated by CO_2,

X_{it} denotes an independent variable. It is ENERGY,

β_1 is the coefficient for the independent variable,

u_{it} is the error term.

In the context of the random effects model (REM), its underlying principle lies in assuming that the variation across entities is random and lacks correlation with the predictor or independent variables integrated into the model. Notably, one of the advantages of using the random effects model is its ability to accommodate time-invariant variables, which would otherwise be absorbed by the intercept in the fixed effects model. Additionally, the random effects model permits the generalization of inferences beyond the specific sample employed in the model.

The random effects model is as follows:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} + \varepsilon_{it} \quad (2.3)$$

$$CO_{2it} = \alpha_i + \beta_1 ENERGY_{it} + \varepsilon_{it} \quad (2.4)$$

In which:

α_i $(i=1....n)$ is the unknown intercept for each country,

Y_{it} is the dependent variable; i, t denote for the country i and time t. This can be abbreviation like CO_2,

X_{it} denotes an independent variable. It is ENERGY,

β_1 is the coefficient for the independent variable,

u_{it} is the error term between entity error,

ε_{it} is the error term within entity error.

4. Results

4.1. Descriptive statistics

Table 4.1. Descriptive statistics

Country	Items	Electric Consumption	CO_2 Emission
Indonesia	Mean	302.1	249273.4
	Minimum	15.8	42886.3
	Maximum	893.1	700786.8
	Std. Dev	266.8	170027.8
	Observations	50	50
Myanmar	Mean	70.1	8590.1
	Minimum	21.7	4521.7
	Maximum	236.8	23794.7
	Std. Dev	48.8	4041.7
	Observations	50	50
Cambodia	Mean	101.3	3606.5
	Minimum	14.8	1694.1
	Maximum	298.5	7353.4
	Std. Dev	83.1	1765.7
	Observations	26	26
Malaysia	Mean	2096.2	108073.9
	Minimum	344.4	18345.3
	Maximum	5117.1	267103.5
	Std. Dev	1483.7	80781.15
	Observations	50	50
Philippines	Mean	477.7	60120.9
	Minimum	259.3	29087.1
	Maximum	765.9	116219.2
	Std. Dev	140.9	24405.6
	Observations	50	50
Thailand	Mean	1188.5	149551.4
	Minimum	132.3	21172.8
	Maximum	2792.6	2792.6
	Std. Dev	879.7	108683.3
	Observations	50	50
Singapore	Mean	5916.9	41438.6
	Minimum	1270.2	18252.4
	Maximum	9729.1	67850.8
	Std. Dev	2914.9	12953.6
	Observations	50	50
Vietnam	Mean	355.673	58784.7
	Minimum	37.2	15315.96
	Maximum	1566.1	183601.9
	Std. Dev	431.1	51480.3
	Observations	50	50

Source: Result from the analysis

Table 4.1 provides a comprehensive data description comprising 752 observations from 8 South-east Asian countries spanning a 50-year period from 1971 to 2020. Each country and index combination is represented in the first row by the mean value, followed by subsequent rows showing the minimum, maximum, standard deviation, and the number of observations utilized in the study.

Regarding average electricity consumption, Singapore emerges as the top-ranking country, recording 5916 kWh per capita, followed by

Malaysia with 2096 kWh per capita. Thailand secures the third position with an average consumption of 1188 kWh per capita. On the other end of the spectrum, Myanmar exhibits the lowest average electricity consumption with 70 kWh per capita.

Regarding CO_2 emissions, Indonesia holds the leading position among the selected 8 countries, surpassing the second-leading country, Thailand, by more than 1.5 times. Conversely, Myanmar and Cambodia stand at the bottom of the CO_2 emission ranking.

4.2. Correlation Investigation

Table 4.2. Correlation coefficents between used variables

	Electric Consumption	CO_2 Emission
Electric Consumption	1	
CO_2 Emission	0.0456 (0.2807)	1

Source: Result from the analysis

The analysis reveals a relatively weak correlation coefficient of 0.0456 between the two variables. Furthermore, the associated probability value for the correlation test, which indicates the significance of the correlation coefficient, is greater than 0.05. These findings suggest the absence of a linear correlation between electricity consumption and CO_2 emissions.

4.3. Model selection

The present study employs a quantitative research approach to investigate the factors influencing the balance of trade. Panel data regression methods, namely Pooled Ordinary Least Square (Pooled OLS), Fixed-Effect Model (FEM), and Random-Effect Model (REM), are employed to analyze the data. The Fixed-Effect Model assumes that individual-specific effects are significantly correlated with the independent variables, implying that the observed effects across studies are due to sampling error, while a true effect size underlies all studies. In contrast, the Random-Effect Model allows for the true effect to vary between studies.

According to Wooldridge (2010), the choice between Pooled OLS, FEM, and REM depends on whether the study uses a different sample for each period of the panel data. If the sample remains constant over time, the inadequacy of Pooled OLS suggests employing either FEM or REM to ensure more accurate results. As such, this study examines the results using fixed or random effects models, which are expected to yield more precise estimations than Pooled OLS.

In this context, it is crucial to acknowledge that the effect size may vary, considering differences in participant compositions, intervention implementations, and other relevant factors. To determine whether Pooled OLS or REM is more appropriate, the Breusch and Pagan Lagrangian multiplier test for random effects can be applied. If the variance for u is zero and the p-value is less than 5%, the study cannot reject the null hypothesis, leading to the choice of pooled regression. Otherwise, the appropriate model is REM. The outcomes of this analysis are presented in Table 4.3 below.

Table 4.3. Breusch and pagan lagrangian for homoscedasticity

	Value
Chibar2 (01)	1803.1
Prob > Chibar2	0.0000
H0: Constant variance	

Source: Result from the analysis

Initially, the selection of the appropriate model between Pooled OLS and REM is determined using the Breusch and Pagan Lagrangian multiplier test. The obtained p-value from this test is very close to zero, indicating that Pooled OLS is not the suitable model at the 5% significance level. Consequently, either FEM or REM is considered appropriate.

To further differentiate between FEM and REM, the study employs Hausman specification tests, focusing on inter-variance and intra-variability. Specifically, the model selection is based on the comparison of the Pro statistic with the Chi2 distribution. If Prob. is greater than Chi2, the chosen model is FEM; otherwise, REM is preferred.

H_0: The null hypothesis is that the preferred model is random effects

H_a: The alternate hypothesis is that the model is fixed effects.

The Hausman test result is presented in Table 4.4.

Table 4.4. Hausman test results

	Value
Chi2 (2)	3.45
Prob > Chi2	0.0521

Source: Result from the analysis

Table 4.4 indicates that p-value of the Hausman model is 0.0521, which is larger than 0.05, RE model is suggested to be used rather than FEM. In conclusion, REM is the most suitable in this study, in which the independent variable is CO_2 emission.

4.4. Results of econometric modelling

In this section, the study will totally discuss results of the econometric modelling in the case of South-east Asian countries.

Table 4.5. Results of econometric modeling with dependent variable of CO_2 emission

Variables	FEM	REM
Energy consumption	24.8*** (0.000)	25.7*** (0.000)
C	48342.1*** (0.000)	48815.7* (0.087)

Notes: ** and *** indicate significance level of 10% and 1%*

Source: Result from the analysis

Because, REM is the most suitable in this study, we have tested the diagnostics of the model in connection REM.

4.4.1. Autocorrelation test

Based on the Wooldridge test, we have:

The Null hypothesis H0: no first order autocorrelation

The Alternative hypothesis Ha: existence of an autocorrelation

At this stage, autocorrelation test used for null hypothesis: "no first order autocorrelation", the Wooldridge Test is used. According to the results in Table 4.6, the p-value of the REM is very close to zero. They are all less than 0.05 so that null hypothesis is rejected, which indicated that there is an autocorrelation between variables in the three models.

Table 4.6. Wooldridge test for autocorrelation in panel data

	REM
F(1,7)	86.5
Prob > F	0.000

Source: Wooldridge test - STATA 15

4.4.2. Heteroscedasticity Test

To test for heteroscedasticity of the REM model, the White test is performed. In the theory, if the test result with p-value of 0.05, so there is heteroscedasticity in the model at the significant level at 5 percent. In a result, Table 4.7 indicates that the test result with p-value is close to zero, which proved that the model has heteroscedasticity problem.

Table 4.7. Heteroscedasticity test

	REM
White test	W0 = 49.5 (Pr > F = 0) W50 = 38.7 (Pr > F = 0) W10 = 45.9 (Pr > F = 0)

Source: Results from STATA 15

To sum up, the model has problems of autocorrelation and heteroscedasticity. In order to fix these errors, the study needs to correct them. After correction the errors, the results are shown in the following table:

Table 4.8. Results of Econometric Modeling with dependence variable of CO_2 emission (Correction)

Variables	REM*
Energy Consumption	23.9 (0.001)
C	48763.7 (0.021)

Source: Result from the analysis

5. Conclusion and discussion

Based on the findings presented in Table 4.8, the random effects model is selected as the most suitable model for further discussion. The analysis reveals a positive and statistically significant impact of energy consumption on CO_2 emissions in South-east Asian countries, with a regression coefficient of 23.9. This implies that an increase of 1 kWh per capita in energy consumption leads to a rise of approximately 23.9 kilo tons in CO_2 emissions on average.

These results align with existing empirical findings and support our theoretical expectations. It is theoretically evident that an increase in energy consumption per capita corresponds to a worsened CO_2 emission profile for a country.

The study focuses specifically on energy consumption as a factor influencing CO2 emissions in South-east Asian countries. The

empirical evidence underscores the significant relationship between energy consumption and CO_2 emissions, highlighting the role of energy consumption as a crucial contributor to air pollution in this region. Consequently, the governments of these countries should take proactive measures to reduce energy usage in both economic activities and daily life, prioritizing climate change mitigation efforts. This study emphasizes the significance of implementing climate change policies, particularly promoting renovation processes and increasing the adoption of renewable energy sources.

Some solutions could be referred such as:

Energy conservation

Energy conservation refers to efforts aimed at reducing energy consumption. It can be achieved through enhancing energy efficiency, as well as reducing energy consumption and/or shifting away from conventional energy sources.

Energy-saving can lead to increased financial capital, environmental quality, national security, personal security, and human comfort. Consumers of energy, whether individuals or organizations, can choose energy-saving methods to reduce energy costs and promote economic stability. Industrial and commercial users can increase energy efficiency to maximize profits.

Global energy consumption can also be slowed down by addressing population growth and implementing non-coercive measures such as providing better family planning services and empowering women in developing countries.

To save energy and reduce CO_2 emissions, measures like using natural ventilation and natural lighting, adopting digital control systems, constructing thermally insulated buildings with cellulose materials, using compact fluorescent lamps, using LCD screens instead of traditional monitors, and implementing solar water heaters can be applied.

Energy policy

Energy policy refers to the means by which a particular entity (usually the government) addresses energy development issues, including energy production, distribution, and consumption. Attributes of energy policies may include laws, international agreements, investment incentives, energy-saving guidelines, taxes, and other public policy techniques.

Encouraging the production and use of renewable energy or green energy instead of fossil fuels contributes to improving the living environment. Common renewable energy sources include solar energy, wind energy, wave energy, and bioenergy.

Energy is a fundamental component of modern economies. An economy's functioning not only demands labor and capital but also energy for production processes, transportation, communication, agriculture, etc. Therefore, ensuring a sustainable energy supply is crucial for economic and social development.

References:

Dong, K., Dong, X., Dong, C., (2019), Determinants of the global and regional CO_2 emissions: What causes what and where?, Appl. Econ. 1-14.

Guo, Y.; Uhde, H. & Wen, W. (2023), Uncertainty of energy consumption and CO_2 emissions in the building sector in China, Sustainable Cities and Society, Volume 97, 104728, https://doi.org/10.1016/j.scs.2023.104728.

Hasnisah, A., Azlina, A.A., Taib, C.M.I.C., (2019), The impact of renewable energy consumption on Carbon dioxide emissions: Empirical evidence from developing countries in Asia. Int. J. Energy Econ. Policy 9 (3), 135-143.

Kasman, A., Duman, Y.S., (2015), CO_2 emissions, economic growth, energy consumption, trade and urbanization in new EU member and candidate countries: a panel data analysis, Econ. Model. 44, 97-103.

Lee, C. C., & Chang, C. P. (2008). Energy consumption and economic growth in Asian economies: A more comprehensive analysis using panel data. Resource and Energy Economics, 30(1), 50-65.

Miglė Jakučionytė-Skodienė, Genovaitė Liobikienė, 2023, Changes in energy consumption and CO2 emissions in the Lithuanian household sector caused by environmental awareness and climate change policy, Energy Policy, Volume 180, 113687, https://doi.org/10.1016/j.enpol.2023.113687.

Muhammad, B., (2019), Energy consumption, CO2 emissions and economic growth in developed, emerging and middle east and north Africa countries, Energy 179, 232-245.

Ozturk, I., & Acaravci, A. (2010). CO_2 emissions, energy consumption and economic growth in Turkey. Renewable and Sustainable Energy Review, 14(9), 3220-3225.

Pao, H.-T, & Tsai, C.-M. (2011). Modelling and forcasting the CO_2 emissions, energy consumption and economic growth in Brazil. Energy, 36(5), 2450-2458.

Saidi, K., Hammami, S., (2015), The impact of CO2 emissions and economic growth on energy consumption in 58 countries. Energy Rep. 1, 62-70.

Salahuddin, M., Gow, J., (2014), Economic growth, energy consumption and CO_2 emissions in gulf cooperation council countries, Energy 73, 44-58.

Wooldridge, J., (2010), Econometric Analysis of Cross Section and Panel Data. MIT Press.

WILLINGNESS TO PAY PREMIUM FOR ECOTOURISM: THE IMPACT OF PERCEIVED VALUE, ENVIRONMENT CONCERN AND FEAR OF COVID-19

Assoc.Prof.PhD. Vu Hoang Nam* - PhD. Nguyen Thi Khanh Chi*

Abstract: ***This study examines an integrated model that analyzes the impact of perceived value and environmental concerns on ecotourism intention and tourists' WTP. In particular, the moderating effect of tourist fear of COVID-19 on their WTP is explored. The results of SEM in AMOS 22.0 indicate that fear of COVID-19 significantly negatively affects tourist intention and their willingness to pay premiums for ecotourism. The findings also show that perceived value and tourist environment concerns positively impact their WTP. This study also provides practical implications for ecotourism providers, marketers, and government. The government must consider strategies designed to maintain and enhance the eco-destination places and environmental intention. Ecotourism marketers should focus on increasing the unique image of ecological sites. These efforts will create a favorable action for tourists. Otherwise, ecotourism providers might increase the prospective customer base among materialistic consumers. Furthermore, they can provide ecotourism promotion materials for target customers.***

• Keywords: *perceived value, environment concern, ecotourism intention, willingness to pay premium.*

JEL codes: M21, M38

Date of receipt: 04th September, 2023

Date of delivery revision: 12th September, 2023

Date of receipt revision: 24th October, 2023

Date of approval: 01st December, 2023

Tóm tắt: *Bài viết này nghiên cứu tác động của giá trị cảm nhận và mối quan tâm về môi trường đến ý định du lịch sinh thái và sự sẵn sàng chi trả của khách du lịch. Trong đó bài viết cũng tập trung tìm hiểu tác động về dịch bệnh Covid-19 đến sự sẵn sàng chi trả cho đi du lịch sinh thái của khách du lịch. Kết quả chỉ ra rằng nỗi lo về dịch bệnh COVID-19 ảnh hưởng tiêu cực đến ý định của khách du lịch và sự sẵn lòng chi trả cho du lịch sinh thái. Bài viết cũng cho thấy giá trị cảm nhận và mối quan tâm về môi trường du lịch tác động tích cực đến sự sẵn sàng chi trả của du khách. Nghiên cứu này đề xuất hàm ý chính sách cho Chính phủ, các đại lý du lịch, và các địa phương. Chính phủ cũng nên cân nhắc có các định hướng cho các địa phương để duy trì và nâng cao hình ảnh của các địa điểm sinh thái.*

• Từ khóa: *giá trị cảm nhận, mối quan tâm về môi trường, ý định du lịch sinh thái, sẵn sàng chi trả.*

1. Introduction

With the increase in environmental concerns, ecotourism studies have recently become popular with academics and tourism practitioners (Nguyen and Le, 2020). Weaver and Lawton (2007) divided nature-based tourism into supply and demand sides. Supply side includes the nature of nature-based tourism, protected areas, and the tourism industry, while the demand side indicates eco-tourist behavior, interpretation, and marketing. Unfortunately, the tourism industry is most vulnerable to pandemics or crises (Gössling et al., 2020; Yu et al., 2020). Many countries have restricted the movement of people, closed tourist attractions, and suspended business activities/ public events during the COVID-19 pandemic (UNWTO, 2020). The fear of COVID-19 has put destinations/cities on lockdown in various countries (Bae and Chang, 2020). Hence, this paper investigates not only the antecedents influencing eco-tourist behavior but also the impact of tourist fear of COVID-19 on their

* *Foreign Trade University*

intention and willingness to pay a premium for engaging in ecotourism.

The COVID-19 pandemic may have direct and (negative) impacts on ecotourism since travel can play a crucial role in the spread of pandemics between destinations (Sánchez-Cañizares et al., 2020). The negative impacts of proactive measures imposed to restrict the COVID-19 pandemic have negatively affected most. The aggressive actions to contain the COVID-19 pandemic have negatively impacted most industries, including tourism (UNWTO, 2020). Bae and Chang (2020) found that various psychological and cognitive health risks, such as tourist risks and fears, are the main factors influencing future travel behavior or intention to travel. As fear of COVID-19 can vary among different travelers, it is considered an essential aspect of the decision-making process when choosing a destination (Bhati et al., 2020).

Several studies on ecotourism confirmed tourist behaviors and their concern about the environment (Tangeland, 2011; Nguyen and Le, 2020; Pham and Nguyen, 2020). Individuals with environmental beliefs will be concerned about nature when choosing travel destinations (Hedlund *et al*., 2012). Additionally, responsible behavior towards the environment is highly impacted by tourist experience during their ecotourism participation (Chiu, *et al*., 2014). However, ecotourism pays little attention to responsible environmental behavior (Lee, 2011). Besides, the previous studies regarding passengers' environmentally responsible behavior mainly focus on their destination image of tourist attractions such as national forest parks, scenic areas and eco-destinations (Cheng *et al*., 2013; Ramkissoon *et al*., 2013). These studies did not thoroughly investigate responsible environmental behavior intention as a result of changes in behavior.

This study, therefore, aimed to investigate the relationship among the tourists' perceived value, environmental concern, and environmentally responsible behavior (namely ecotourism intention) in Vietnam. The role of ecotourism intention between perceived value, environmental concern and willingness to pay a premium were also examined. By examining the tourists' perceived value in Vietnam, this study examines their perception of deals and their environmental concerns on behavioral intentions. Then, they are willing to pay a premium. This study also analyzes how individual beliefs in the environment impact their behavioral intentions and willingness to pay a premium. Considering the essential issues, the research has some contributions to enhancing tourism marketing strategies and attracting more customers to ecotourism destinations.

2. Literature review

2.1. Ecotourism intention

Following the research of Cottrell and Graefe (1997), responsible behavior, known as environmentally responsible behavior, describes the individual beliefs about environment, commitment, and nature knowledge. This behavior can be addressed in ecotourism, waste recycling, and energy management (Iwata, 2001; Lee *et al*., 2013). In the context of ecotourism, responsible behavior is addressed as the understanding of tourists for their impact on the environment (Puhakka, 2011). Meanwhile, Thapa's (2010) findings viewed environmental behavior intention as activities relating to political actions, recycling, education, and green consumption.

Hence, this research discussed responsible environmental behavior intention (ecotourism intention) using perceived value and ecological concern as critical factors. The study is expected to explain the relationship between perceived values, environmental concern, and ecotourism intention that can predict tourist behavior, such as willingness to pay a premium for ecotourism.

2.2. Hypothesis development

According to Zeithaml (1988) and Chen and Cuong (2020), perceived value is consumers' feelings about their product/service. Therefore, it can be referred to as value resulting from a gap between expected service and service accepted by consumers (Bolton and Drew, 1991). In marketing literature, perceived value is defined as understanding individual future behavior and purchasing decisions (Jamal and Sharifuddin, 2015). Thus, perceived value is the most critical factor for obtaining a competitive advantage and understanding behavioral intentions (Parasuraman and Grewal, 2000). Regarding perceived value and environmental behavior, Russell and Russell (2010) showed that people are more motivated to protect the environment as they could have

beneficial experiences. Moeller *et al*.' (2011) findings on eco-tourists revealed that people with high concern for the environment will engage in ecotourism activities. Thus, the below hypothesis is proposed.

H1a: Perceived value has a positively impact on ecotourism intention.

This study mainly focuses on perceived value, presenting customer feelings about the product (Hartman, 2015). The good perceived value confirms the better quality of a product or service than others compared to the same weight and price.

Monroe's (1990) findings showed that in making decisions, customers often compare the products or services by price and quality. On the other hand, quality and price play an important role in customer behavior (Wang, 2012). Therefore, if customers feel that a product or service is of higher quality than the actual price, they are likely to buy it. Mazumdar (1993) also confirmed the "importance of perceived value, acknowledging that the higher the perceived value, the greater is consumer willingness to adopt a new product".

H1b: Perceived value has a positively impact on WTP for ecotourism.

According to Huang and Liu (2007), environmental concern is seen as an individual awareness of natural and cultural protection. Therefore, personal belief about the environment has been widely investigated as a critical factor for explaining how individuals participate in ecotourism. The report of Wurzinger and Johansson (2006) found the belief about environment as a critical reason of individual attitudes and behaviors. A recent study by Olmsted *et al*. (2020) reported that ecotourism links tourists to the environment and pushes them to develop stronger support for the natural world. People who belief on the environment tend to choose ecotourism instead of other types of tourism (Nguyen and Le, 2020).

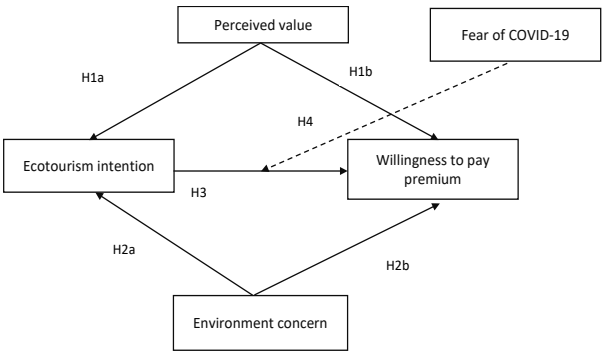
Otherwise, Starr (2009) considered environmental concerns motivating individuals in purchasing decisions. He argued that individual is more likely to buy ethically as there are socially mediated effects in the spread of ethical consumption. On the other hand, Li *et al*. (2016) reported environmental concerns due to customer behavior. People concerned about the environment have a higher WTP for nature tourism (Vespestad & Gressnes, 2020). It can be suggested that individual with positive environmental awareness is more likely to engage in ecotourism and are willing to pay a higher premium than the individual who is not environmentally concerned. Therefore, the hypotheses are:

H2a: Environment concern has a positively impact on ecotourism intention.

H2b: Environment concern has a positively impact on WTP for ecotourism.

Tourist's intention for ecotourism is to participate in eco-destination, promising their willingness to pay a premium (Hutal *et al*., 2015, Pham and Nguyen, 2020; Nguyen and Le, 2020). WTP was considered an essential criterion of travelers' behaviors towards ecotourism (Lu *et al*., 2014). People want to pay money for environmental services if some conditions are required (Ajzen and Peterson, 1988). In addition, Ajzen and Driver's (1992) findings showed that tourist intention to ecotourism positively impact their willingness to pay a price. Therefore, the hypothesis is.

Figure 1: The theoretical framework



H3: Ecotourism intention will positively influence WTP for ecotourism.

According to Bhati et al. (2020), the PMT-Protection Motivation Theory aims to predict the health pandemic and behaviors. Their study extended PMT and TBP theory of planned Behaviour in the context of the COVID-19 pandemic to investigate the role of perceived risk and fear of the pandemic on tourist intention. Some research also examines tourist behavior based on the impact of COVID-19 and the fear of tourism destinations during the pandemic (Bhati et al., 2020; Dillette et al., 2020). The fear of COVID-19 is highly expected to impact tourist behavior negatively (Bae and Chang, 2020). Therefore, we

also anticipate that tourist fear of COVID-19 has a negatively moderating impact on tourist intention and their willingness to pay premiums in the context of ecotourism.

H4: Fear of COVID-19 does negatively moderate the relationship between ecotourism intention and willingness to pay premium

3. Methodology

3.1. Research design

The questionnaires are designed based on a literature review and the criteria of ecotourism sites. The questionnaire was pre-tested and revised to ensure content validity. The survey is divided into four sections. The *first section* of the instrument is to solicit the participants› demographic data. The *second section* is to understand the participants' ecotourism destination image they perceived during their visit. The *third section* of the instrument was to measure variables in the study, including ecotourism intention with four items, perceived value with three items, environment concern with five items, and willingness to pay a premium with five items. *Finally*, it reports respondent information with six items: age, gender, job, and income. Apart from respondent information measured by a categorical scale, all items of the first four parts are measured by a 5-point Likert-type scale from "1= strongly disagree" to "5=strongly agree".

3.2 Items measurement

As presented in Table 1, the ecotourism intention was measured by four items adopted from Lam and Hsu's (2006) study. Perceived value is a consumer's 'overall assessment of a product, or a service is a trade-off between the benefits realized and the costs' (Rasoolimanesh *et al*., 2016, p. 73). So, overall perceived value can be assessed by evaluating the experience regarding benefits and sacrifices with three items (Bonnefoy-Claudet and Ghantous, 2013). The environmental concern scale applied in the use of such a short version of the sale has been justified by Pham and Nguyen (2020). Fear of COVID-19 scale was measured by (Ahorsu et al., 2020). Willingness to pay a premium was measured with five items that were adopted from Bang *et al*.'s (2000) study measuring consumers' willingness to pay more for renewable energy (Table 1).

Table 1. Items measurement

Variables	Items
Fear of COVID-19 (Ahorsu et al., 2020)	1.I am most afraid of COVID-19 2. It makes me uncomfortable to think about COVID-19 3. I am afraid of losing my life because of COVID-19 4. My hands become clammy when I think about COVID-19
Ecotourism intention (Lam and Hsu's, 2006)	1. I will choose eco-destinations in a near future 2. I like to choose eco-sites 3. I intend to choose eco-sites within a foreseeable future 4. I will visit an eco-sites within the next 6 months
Perceived value (Bonnefoy-Claudet and Ghantous, 2013)	1. The visit was great (money, time, effort) 2. The journey offer more value than expected 3. Travelling eco-sites offers more value than other types of tourism
Environment concern (Pham and Nguyen, 2020)	1. The impact of human intervene produces disastrous consequences 2. People are seriously abusing the environment 3. Plants and animals have as many rights to available on the earth 4. Nature's balance is fragile and easily reversed
Willingness to pay premium (Bang *et al*., 2000)	1. How much are you willing to go on a more expensive vacation to protect environment 2. How are you willing to finance ecotourism campaign 3. How would you be willing to pay more cost for your vacation for better environment 4. Are you willing to pay more for your vacation today 5. How are you willing to pay more for eco-sites instead of other sites

4. Results

4.1. Data collection and sampling technique

The survey was conducted from May to December 2019 at two National Parks in Vietnam. Domestic tourist is individual sample. The sample size was determined at least 800 observations as per the rule of thumb in multivariate analysis literature (Comrey and Lee, 1992). Data was collected through intercepting interview methods at entertainment areas, traditional markets and supermarkets. In order to get 800 valid responses, we launched 1200 survey. There were 927 respondents with a response rate of 77.25%. Demographic characteristics of customers (gender, age, job and income) are described in Table 2.

Table 2. Demographic characteristics of customers

Characteristic	Percent
Gender	
Female	51.7
Male	48.3

Characteristic	Percent
Age	
Below 20	9.2
21-30	28
31-40	29
41-50	21.5
Above 50	12.3
Job	
Student	8.0
Staff	27.6
Business	33.2
Other	31.2
Income per month (USD)	
Below 250	11.3
250-500	25.1
500-1000	23.1
1000-1500	24.8
Above 1500	15.7

This analysis confirms the factor used to assess the reliability and validity of all constructs in the model. The saturated model is used to evaluate final model compatibility with actual data (Chi-square/df coefficients < 5; CFI, TLI, IFI > 0.9 and RMSEA <0.08) (Kline, 2011). The factor loadings of each observed variable (> 0.5) are considered convergent validity (Hair *et al*, 2010). Otherwise, the Cronbach's Alpha coefficients and composite reliability coefficients (>0.7) and the average variance- AVE (>0.3) also reveal that the factors achieve the required reliability (Fornell & Larcker, 1981). Finally, the structural equation modelling (statistical significant at 0.05) is conducted to test the research hypotheses.

4.2. Measurement model test-validity and reliability

The analysis result revealed that the model achieved overall fit with the actual data (Chi-square/df = 3.655; GFI= 0.932, CFI = 0.921; TLI = 0.911; RMSEA = 0.052). The factor loadings of each items in the constructs (>0.5) showed that the components in the first order construct was reached convergent validity. The Cronbach's Alpha and composite coefficients (>0.7) and average variance extracted (>0.3) indicated that the construct achieved the reliability.

Table 3. The results of validity and reliability test

	Loadings	CA	CR	AVE
COVID-19	0.688-0.735	0.836	0.852	58.6%
ECO	0.609-0.689	0.807	0.766	54.2%
PVA	0.611-0.673	0.793	0.805	54.3%
ENV	0.594-0.704	0.753	0.843	56.4%
WTP	0.562-0.66	0.775	0.749	50.3%

Note: COVID-19 - The fear of COVID-19, CA- Cronbach Alpha, CR- Composite reliability, AVE- Average variance extracted, ECO-ecotourism intention, ENV-Environment concern, PVA-Perceived value, WTP-willingness to pay premium

4.3. Structural model test

Table 4 shows the analysis results using SEM on the whole sample. As can be seen from Table 4, our measurement model has a good fit and the hypothesized relationships are all statically significant. Therefore, our hypothesis H1a H1b, H2a, H2b and H3 are supported

Table 4. The results of structural model test

Hypothesis			Path Coefficient	P
Perceived value	→	Ecotourism intention	0.326	***
Perceived value	→	Willingness to pay premium	0.231	***
Environment concern	→	Ecotourism intention	0.351	***
Environment concern	→	Willingness to pay premium	0.221	***
Ecotourism intention	→	Willingness to pay premium	0.586	0.002

Chi-square/df = 3.075; CFI= 0.936; TLI= 0.928; IFI = 0.936; GFI= 0.922; RMSEA= 0.061

Table 5 reports the direct and indirect effects of all variables on WTP. Perceived value has positively significant direct effects on WTP and its indirect impact on WTP transferred through ecotourism intention is also positively significant. The total effect of perceived value on willingness to pay premium (sum of direct and indirect effect through ecotourism intention) is 0.388. Environment concern has negative direct effects on WTP and its indirect impact on WTP transferred through ecotourism intention is also negatively significant. The total effect of environment concern on WTP is 0.304. Meanwhile, the total effect of ecotourism intention on WTP is 0.586 which is highest among the three predictors.

Table 5. The results of total effects

Dependent construct	Effect	Perceived value	Environment concern	Ecotourism intention	Willingness to pay premium
Ecotourism intention	Direct	0.326	0.351	0.000	0.000
	Indirect	0.000	0.000	0.000	0.000
	Total	**0.326**	**0.351**	**0.000**	**0.000**
Willingness to pay premium	Direct	0.231	0.221	0.000	0.000
	Indirect	0.157	0.083	0.000	0.000
	Total	**0.388**	**0.304**	**0.586**	**0.000**

Chi-square/df = 3.075; CFI= 0.936; TLI= 0.928; IFI = 0.936; GFI= 0.922; RMSEA= 0.061

4.4. The moderating impact of the fear of COVID-19

SEM is employed to examine the moderating role of the fear of COVID-19 whereby this analysis allows testing for significance of interaction term (i.e the fear of COVID-19 x Ecotourism intention) beyond the main effects. The significance of the interaction effect describes the role of moderator. The result shows that the moderating effect of the fear of COVID-19 on the relationship between ecotourism and willingness to pay premium for ecotourism has a negative impact (β Fear of COVID-19 x Ecotourism intention = -0.275).

	Willingness to pay premium for ecotourism	
Fear of COVID-19	- 0.408	***
Ecotourism intention	0.507	***
Fear of COVID-19 x Ecotourism intention	-0.275	***

*Note: ***<0.01*

5. Discussion

In general terms, the study found a significantly negative impact of tourist fear of COVID-19 on tourist willingness to pay premiums for ecotourism. Further, the positive influences of perceived value and environmental concern on ecotourism intention and tourists' WTP are also confirmed.

We reveal that tourists' fear of COVID-19 reduces their intention and willingness to pay a premium in engaging ecotourism. This finding is somewhat similar to the general tourism research of Rather (2021), which focused on the negative impact of the fear of COVID-19 on tourist attitude.

The findings about the positive impact of perceived value follow the work of Wo, Kim and Uysal (2015), which suggest the influence of perceived value on customer behavioral intentions. Similarly, in Monroes (1990) view, when consumers have to make a decision, they usually decide by comparing the difference between the sacrifice or cost of the price and the benefits of the product or quality. However, in the context of ecotourism, there is no research on the impact of perceived value on tourist actual behavior.

On the other hand, the findings of this paper also highlight the positive effect of environmental concern on tourist intention and their willingness to pay a premium for ecotourism. This result is in line with Hultman *et al*.'s (2015) and Pham and Nguyen's (2020) research, which confirmed the positive influence of environmental concern on tourists' actual behaviors. Therefore, those concerned about the environment might likely show favorable attitudes and interest toward ecotourism. This might also lead to being willing to pay a premium for ecotourism products and services.

This study also provides practical implications for ecotourism providers, marketers, and government. Firstly, ecotourism marketers need to develop different marketing strategies for underlining the role of fear of COVID-19 on tourist behaviors. For example, managers may apply mobile apps, AI adoption, virtual reality, or brand communities, which help engage such customers. Secondly, the government must consider strategies to maintain and enhance the eco-destination places and environmental intention. Ecotourism marketers should focus on increasing the unique image of ecological sites. These efforts will create a favorable action for tourists. Otherwise, ecotourism providers might increase the prospective customer base among environmentally responsible consumers. Furthermore, they can provide ecotourism promotion materials for targeting customers. For example, they should adopt segmentation and targeted approaches such as tourism motivation and materialistic concern.

6. Conclusion

This study offers significant theoretical and practical contributions, including the moderating effect of fear of COVID-19 and the impact of perceived value and environmental concern on tourists' WTP in tourism literature. This paper adopted the multidisciplinary approach to comprehensively understand the literary tourism industry, forming the basis for further research and conceptual elaboration. Therefore, it can be believed that this study has a valuable contribution to the tourism industry and sustainable development.

However, this paper also has some limitations. At first, we have yet to compare the efficacy of two different measures, which are affective and cognitive items in the perceived value construct. Therefore, we need to improve in future research. Secondly, this research does not discuss the interrelationships among other factors influencing tourists' willingness to pay premiums.

Consequently, future studies should improve this gap. Thirdly, the customers' demographic characteristics in this study were not explored because gender differences may be perceived differently in analyzing advertising (Lin *et al*., 2008). Thus, the effect of age and gender should be studied in the future to examine the results for different types of customers. Finally, this study was conducted in Vietnam, not in different countries and other different cultures. Future research also needs to improve this limitation.

References:

Ajzen, I. and Driver, B.L. (1992), "Contingent value measurement: on the nature and meaning of willingness to pay", Journal of Consumer Psychology, Vol 1 No. 4, pp. 297 - 316.

Ajzen, I. and Peterson, G.L. (1988), "Contingent value measurement: the price of everything and the value of nothing. In B.L.G.L. Peterson", Amenity Resource Valuation: Integrating Economics with Other Disciplines (pp. 65-75). PA: Venture Publishing.

Ahorsu, D. K., Lin, C.-Y., Imani, W., Saffari, M., Griffiths, M. D. and Pakpour, A. H. (2020), "The fear of COVID-19 scale: Development and initial validation", International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-020-00270-8

Bae, S. Y. and Chang, P. (2020), "The effect of coronavirus disease-19 (COVID-19) risk perception on behavioural intention towards 'untact' tourism in South Korea during the first wave of the pandemic", Current Issues in Tourism. https://doi. org/10.1080/13683500.2020.1798895

Bang, H.K., Ellinger, A.E., Hadjimarcou, J. and Traichal, P.A. (2000), "Consumer concern, knowledge, belief, and attitude toward renewable energy: an application of the reasoned action theory", Psychology & Marketing,Vol. 17 No. 6, pp. 449 - 468.

Bhati, A. S., Mohammadi, Z., Agarwal, M., Kamble, Z. and Donough-Tan, G. (2020), "Motivating or manipulating: The influence of health protective behaviour and media engagement on post-COVID-19 travel", Current Issues in Tourism. https://doi.org/10.1080/13683500.2020.1819970

Bolton, R.N. and Drew, J.H. (1991), "A multistage model of customers' assessments of service quality and value", Journal of Consumer Research, Vol. 17 No. 4, pp. 375 - 384.

Bonnefoy-Claudet L, Ghantous N. (2013), "Emotions' impact on tourists' satisfaction with ski resorts: the mediating role of perceived value", Journal of Travel & Tourism Marketing, Vol. 30 No. 6, pp. 624 - 637.

Chen, P.Y. and Cuong, B.M (2020), "An evaluation of student satisfaction of the joint master programs at Foreign Trade University in Vietnam", Journal of International Economics and Management, Vol. 20 No. 2, pp.75 - 88.

Cheng, T.M., Wu, H.C. and Huang, L.M. (2013), "The influence of place attachment on the relationship between destination attractiveness and environmentally responsible behavior for island tourism in Penghu, Taiwan", Journal of Sustainable Tourism, Vol. 21 No. 8, pp.1166 - 1187.

Chiu, Y.T.H., Lee, W.I. and Chen, T.H. (2014), "Environmentally responsible behavior in ecotourism: exploring the role of destination image and value perception", Asia Pacific Journal of Tourism Research, Vol. 19 No. 8, pp. 876 - 889.

Cottrell, S.P. and Graefe, A.R. (1997), "Testing a conceptual framework of responsible environmental behavior", The Journal of Environmental Education, Vol. 29 No. 1, pp. 17 - 27.

Dillette, A. K., Douglas, A. C. and Andrzejewski, C. (2020), "Dimensions of holistic wellness as a result of international wellness tourism experiences", Current Issues in Tourism, 1–17. https://doi.org/10.1080/13683 500.2020.1746247

Dwyer, L., Forsyth, P., Spurr, R. and Hoque, S. (2010), "Estimating the carbon footprint of Australian tourism", Journal of Sustainable Tourism, Vol. 18 No. 3, pp. 355 - 376.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", Journal of marketing research, Vol. 18 No. 1, pp. 39 -50.

Gössling, S. and Schumacher, K. (2010), "Implementing carbon neutral destination policies: issues from the seychelles", Journal of Sustainable Tourism, Vol. 18 No. 3, pp. 377 - 391.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R. (2010), Multivariate data analysis, Pearson, London.

Handriana, T. and Ambara, R. (2016), "Responsible environmental behavior intention of travelers on ecotourism sites", Tourism and Hospitality Management , Vol. 22 No. 2, pp. 135 - 150.

Hartman, D. (2015), "Real value vs. perceived value", from http://smallbusiness.chron.com/real-value-vs-perceivedvalue- 20857.html (Retrieved 12 3, 2020)

Hedlund, T., Marell, A. and Garling, T. (2012), "The mediating effect of value orientation on the relationship between socio-demographic factors and environmental concern in Swedish travelers' vacation choices", Journal of Ecotourism, Vol. 11 No. 1, pp. 16 - 33.

Holden, A., and J. Sparrowhawk. (2002), "Understanding the motivations of ecotourists: the case of trekkers in Annapurna, Nepal", International Journal of Tourism Research, Vol. 4 No. 6, pp. 435 - 446.

Hultman, M., Kazeminia, A. and Ghasemi, V. (2015), "Intention to visit and willingness to pay premium for ecotourism: The impact of attitude, materialism, and motivation", Journal of Business Research, Vol. 68 No. 9, pp. 1854 - 1861.

Iwata, O. (2001), "Attitudinal determinants of environmentally responsible behavior", Social Behavior and Personality: an International Journal, Vol. 29 No. 2, pp. 183 - 190.

Jaafar, M. and Maideen, S.A. (2012), "Ecotourism-Related products and activities, and the economic sustainability of small and medium island chalets", Tourism Management, Vol. 33, pp. 683 - 691.

Jamal, A. and Sharifuddin, J. (2015), "Perceived value and perceived usefulness of halal labeling: the role of religion and culture", Journal of Business Research, Vol. 68 No. 5, pp. 933 - 941.

Kang, M. and Moscardo, G. (2006), "Exploring cross-cultural differences in attitudes towards responsible tourist behaviour: a comparison of Korean, British and Australian tourists", Asia Pacific Journal of Tourism Research, Vol. 11 No. 4, pp. 303 - 320.

Kerstetter, D.L., Hou, J.S. and Lin, C.H. (2004), "Profiling Taiwanese ecotourists using a behavioral approach", Tourism Management, Vol. 25 No. 4, pp. 491 - 498.

Kirkby, C.A., Giudice, R., Day, B., Turner, K., Soares-Filho, B.S., Oliveira-Rodrigues, H. and Yu, D.W. (2011), "Closing the ecotourism-conservation loop in the peruvian Amazon", Environmental Conservation, Vol. 38 No. 1, pp. 6 - 17.

Lam, T. and Hsu, C.H. (2006), "Predicting behavioral intention of choosing a travel destination", Tourism Management, Vol. 27 No. 4, pp. 589 - 599.

Le, D. and Phong, L.T (2017), "A state-of-the-art review of tourist decision-making literature", External Economics Review, No. 101, pp. 1 - 22.

Lee, T.H. (2011), "How recreation involvement, place attachment and conservation commitment affect environmentally responsible behavior", Journal of Sustainable Tourism, Vol. 19 No. 7, pp. 895 - 915.

Lee, T.H., Jan, F.H. and Yang, C.C. (2013), "Conceptualizing and measuring environmentally responsible behaviors from the perspective of community-based tourists", Tourism Management, Vol. 36, pp. 454 - 468.

Lin, I.I., Chen, C.H., Pun, I.F., Liu, W.T. and Wu, C.C. (2009), "Warm ocean anomaly, air sea fluxes, and the rapid intensification of tropical cyclone Nargis (2008)", Geophysical Research Letters, Vol. 36 No. 3, pp. 1 - 5.

Lu, A.C.C., Dogan, G. and Del Chiappa, G. (2014), "Antecedents of ecotourism intentions and willingness to pay a premium for ecotourism products", Journal of Travel Research, Vol. 55 No. 2, pp. 1 - 14.

Manaktola, K. and Jauhari, V. (2007), "Exploring consumer attitude and behaviour towards green practices in the lodging industry in India", International Journal of Contemporary Hospitality Management, Vol. 19 No. 5, pp. 364 - 377.

Mazumdar, T. (1993), "A value-based orientation to new product planning", Journal of Consumer Marketing, Vol. 10 No. 1, pp. 28 - 41.

McDaniel, S.W. and Rylander, D.H. (1993), "Strategic green marketing", Journal of Consumer Marketing, Vol. 10 No. 3, pp. 4 - 10.

Meler, M. and Ham, M. (2012), "Green marketing for green tourism", Conference Proceedings in Tourism & Hospitality Management, pp.130 - 139.

Moeller, T., Dolnicar, S. and Leisch, F. (2011), "The sustainability–profitability trade-off in tourism: Can it be overcome?", Journal of Sustainable Tourism, Vol. 19 No. 2, pp. 155 -169.

Moisander, J. and Pesonen, S. (2002), "Narratives of sustainable ways of living: constructing the self and the other as a green consumer", Management Decision, Vol. 40 No. 4, pp. 329 - 342.

Moliner Velázquez, B., Gil Saura, I. and Ruiz Molina, M.E. (2011), "Conceptualizing and measuring loyalty: towards a conceptual model of tourist loyalty antecedents", Journal of Vacation Marketing , Vol. 17 No. 1, pp. 65 - 81.

Monroe, K.B. (1990), Pricing: marketing profitable decisions, New York: McGraw- Hill.

Nguyen, T.K.C. and Le, T.P. (2020), "Impact of environmental belief and nature-based destination image on ecotourism attitude", Journal of Hospitality and Tourism Insights, Vol. 3 No.4, pp. 489 - 505.

Parasuraman, A. (1997), "Reflections on gaining competitive advantage through customer value", Journal of the Academy of Marketing Science, Vol. 25 No. 2, pp. 154 - 161.

Parasuraman, A. and Grewal, D. (2000), "The impact of technology on the quality-value-loyalty chain: A research agenda", Journal of the Academy of Marketing Science, Vol. 28 No. 1, pp. 168 - 174.

Pham, H.S.T. and Nguyen, C.K. (2020), ,,Ecotourism intention: the roles of environmental concern, time perspective and destination image", Tourism Review, https://doi.org/10.1108/TR-09-2019-0363.

Puhakka, R. (2011), "Environmental concern and responsibility among nature tourists in Oulanka PAN Park, Finland", Scandinavian Journal of Hospitality and Tourism, Vol. 11 No. 1, pp. 76 - 96.

Ramkissoon, H., Smith, L.D.G. and Weiler, B. (2013), "Relationships between place attachment, place satisfaction and pro-environmental behaviour in an Australian national park", Journal of Sustainable Tourism, Vol. 21 No. 3, pp. 434 - 457.

Rasoolimanesh, S.M., Dahalan, N. and Jaafar, M. (2016), "Tourists' perceived value and satisfaction in a community-based homestay in the lenggong valley world heritage site", Journal of Hospitality and Tourism Management , Vol. 2, pp.72 - 81.

Rather, R. A. (2021), "Monitoring the impacts of tourism-based social media, risk perception and fear on tourist's attitude and revisiting behaviour in the wake of COVID-19 pandemic", Current Issues in Tourism, p. 1-9.

Richins, M.L. (2004), "The material values scale: measurement properties and development of a short form", Journal of Consumer Research, Vol. 31 No. 1, pp. 209 - 219.

Russell, D.W. and Russell, C.A. (2010), "Experiential reciprocity: the role of direct experience in value perceptions", Journal of Travel and Tourism Marketing, Vol. 27 No. 6, pp. 624 - 634.

Sánchez-Cañizares, S. M., Cabeza-Ramírez, L. J., Muñoz-Fernández, G. and Fuentes-García, F. J. (2020), "Impact of the perceived risk from Covid-19 on intention to travel", Current Issues in Tourism. https://doi.org/10.1080/13683500.2020. 1829571

Stern, P.C. (1999), "Information, incentives, and pro-environmental consumer behavior", Journal of Consumer Policy, Vol. 22 No. 4, pp. 461 - 478.

Tangeland, T. (2011), "Why do people purchase nature-based tourism activity products? A Norwegian case study of outdoor recreation", Scandinavian Journal of Hospitality and Tourism, Vol. 11 No. 4, pp. 435 - 456.

Thapa, B. (2010), "The mediation effect of outdoor recreation participation on environmental attitude-behavior correspondence", The Journal of Environmental Education, Vol. 41 No. 3, pp. 133 - 150.

Thuan, T.V., Chi, N.T.P. and Trung, N.T. (2019), "Factors affecting international tourists'satisfaction of street food in ho chi minh city", External Economics Review, No. 111, pp. 87 - 100.

UNWTO. (2020). International tourist numbers could fall 60-80% in 2020, UNWTO reports. Retrieved May 15, 2020, from https://www.unwto.org/news/covid-19-international-touristnumbers-could-fall-60-80-in-2020

Valentine, P. (1993), "Ecotourism and nature conservation: a definition with some recent developments in Micronesia", Tourism Management, Vol. 14 No. 2, pp. 107 -1 15.

Wang, H.Y. (2012), "Value as a medical tourism driver", Managing Service Quality, Vol. 22 No. 5, pp. 465 - 491.

Xu, X. and Gursoy, D. (2015), "A conceptual framework of sustainable hospitality supply chain management", Journal of Hospitality Marketing & Management, Vol. 24 No. 3, pp. 229 -259.

Zeithaml, V.A. (1988), "Consumer perceptions of price quality, and value: a means–end model and synthesis of evidence", Journal of Marketing , Vol. 52 No. 1, pp. 2 - 22.

THE IMPACT OF PRIVACY CONCERNS ON TOURISTS' DATA - SHARING BEHAVIORS

PhD. Dinh Tien Minh* - MSc. Nguyen Thi Hong Tuoi - Nguyen Le Nhat Minh***

Abstract: ***The contemporary advancement of technology has significantly facilitated various tasks, such as the dissemination, exchange, and provision of information. This widespread influence extends to almost all sectors within the economy. The tourism industry in Vietnam, which holds significant potential and exciting prospects, is also experiencing the impact of the fourth industrial revolution in technology. In today's context, customers' behaviors related to sharing information and concerns about privacy are crucial. This study proposes a theoretical model based on Privacy Calculus Theory and APCO Framework. The theoretical model considers variables that affect travelers' concerns about their privacy and their willingness to share information. The target group comprises respondents who have utilized tourism services and reside in Ho Chi Minh City. Recommendations for tourism service providers are based on the findings of the analysis, aiming to alleviate visitors' privacy concerns and increase tourists' willingness to share information. Consequently, this approach aims to maximize the advantages for both tourists and tourism service suppliers.***

• Keywords: *privacy concerns, data-sharing behaviors, privacy calculus, apco framework, tourism.*

JEL codes: L8, L83

Date of receipt: 27th October, 2023

Date of delivery revision: 30th October, 2023

Date of receipt revision: 30th November, 2023

Date of approval: 01st December, 2023

Tóm tắt: *Sự tiến bộ hiện đại của công nghệ đã tạo điều kiện thuận lợi đáng kể cho việc phổ biến, trao đổi và cung cấp thông tin. Ảnh hưởng rộng rãi này mở rộng đến gần như tất cả các lĩnh vực trong nền kinh tế, trong đó có cả ngành kinh doanh du lịch tại Việt Nam, một ngành đầy tiềm năng và triển vọng, cũng đang bị ảnh hưởng bởi cuộc cách mạng công nghiệp 4.0. Trong bối cảnh hiện tại, hành vi chia sẻ thông tin của khách hàng và những lo ngại về quyền riêng tư là rất quan trọng. Nghiên cứu này đề xuất mô hình lý thuyết dựa trên Lý thuyết tính toán quyền riêng tư và Khung APCO. Mô hình lý thuyết bao gồm các biến số ảnh hưởng đến sự lo lắng của khách du lịch về quyền riêng tư và sự cởi mở trong việc chia sẻ thông tin của họ. Đối tượng khảo sát là những người đã sử dụng dịch vụ du lịch và cư trú tại Thành phố Hồ Chí Minh. Các giải pháp dành cho các nhà cung cấp dịch vụ du lịch được khuyến nghị dựa trên kết quả phân tích nhằm giảm bớt những lo lắng về quyền riêng tư của du khách và tăng cường sự sẵn sàng chia sẻ thông tin của khách du lịch. Vì vậy, người dân có thể phát huy tối đa lợi thế của cả khách du lịch và nhà cung cấp dịch vụ du lịch.*

• Từ khóa: *mối quan tâm về quyền riêng tư, hành vi chia sẻ dữ liệu, tính toán quyền riêng tư, APCO, du lịch.*

1. Introduction

Technological advancements, such as augmented and virtual reality, the internet of things, big data, sensors, smart gadgets, and artificial intelligence/ machine learning, have caused substantial disruptions in the tourism sector, altering both customer and business behavior. Given the absence of comparable studies in Vietnam, we aim to conduct a benchmark study focused on data sharing or customer security as a reference point for future research lines. Additionally, this study aims to reinforce and examine the stability of these concepts for better categorization in future research. The primary purpose of this study is to understand the elements influencing visitors' willingness to share personal information and travel experiences in Vietnam by investigating the impact of privacy concerns on data-sharing behaviors. Tourists, due to concerns regarding the security, accuracy, and potential misuse of their personal information, are increasingly hesitant to disclose it. By examining the effect of privacy concerns on data-sharing behaviors, researchers aim to identify key factors influencing visitors' decisions to share personal information and vacation experiences. This knowledge can assist travel service companies in devising strategies to enhance client trust and

** UEH University*

*** Regional Tax Department District 7 - Nha Be district; PhD student at UEH University; email: hongtuoinguyen87@gmail.com*

improve the overall travel experience. Moreover, it can contribute to the development of suitable legislation safeguarding visitors' privacy rights and promoting responsible data usage in the travel and tourism sector. The study's objectives are twofold: (1) to explore factors affecting tourists' privacy concerns and assess their impact, and (2) to recommend managerial actions for tourism service providers to decrease tourists' privacy concerns, promote data-sharing behaviors, and enhance efficiency. Initially, the study aims to establish a link between privacy issues and travelers' data-sharing habits. Our team specifically investigates variables influencing tourists' data-sharing practices and privacy concerns. Analysis of the data and models reveals that tourists' willingness to divulge personal information in Ho Chi Minh City is significantly influenced by trust, privacy concerns, and perceived benefits. These characteristics also influence the intensity of readiness to share information, as hypothesized initially. Notably, awareness and experiences emerge as distinct influencers of privacy concerns, while factors like trust, attitudes, knowledge, legislative protection, and privacy control show minimal significance. Vietnam's lax privacy protection regulations and the infrequency of privacy violations among Vietnamese citizens contribute to this observation.

Moreover, the study holds substantial scientific and real-world significance due to its findings. The theoretical component extends the application of Privacy Calculus Theory (PCT) to real-world research and draws upon academic knowledge. By understanding the elements significantly influencing information-sharing desires, the study evaluates the model's factors and confirms their interactions, offering a valuable reference point for future researchers in this field.

2. Theoretical Background

2.1. Theoretical background

Privacy concerns

The concept of privacy can be perceived as a privilege or as the ability to exercise authority over the collection, storage, preservation, utilization, transmission, disclosure, and interchange of information (Xu & Teo, 2004). Previous scholarly investigations have observed that this phrase has been defined and understood in diverse and nuanced ways within different academic fields, sometimes as a commodity (Bennett, 1995).

Bélanger and Crossler (2011) proposed that information privacy, within the Information Systems domain, refers to the willingness and ability to manage the secondary uses and acquisition of someone's personal information. Various approaches for assessing the complex definition of privacy have been suggested. Xu, Dinev, et al. (2011) noted, 'because of the near impossibility of measuring privacy itself' (p. 997), most academic research on privacy uses a proxy to assess the definition. People's expectations regarding the fate of the information they provide to multiple services are generally referred to as privacy concerns (Dinev & Hart, 2005).

To measure privacy concerns, several efforts have been made (Jung & Park, 2018). The Concern for Information Privacy (CFIP) instrument (Smith et al., 1996) is commonly used and measures four dimensions of privacy concerns related to data: error, collection, unauthorized access, and secondary uses. Furthermore, in the context of e-commerce environments, Malhotra et al. (2004) developed the Internet Users' Information Privacy Concerns (IUIPC) instrument. Subsequently, various studies have attempted to upgrade and develop more accurate models of these instruments, either by adapting them to different contexts or by reassessing the scales (Buchanan et al., 2007; Malhotra et al., 2004; Taddicken, 2010).

Privacy calculus

According to the Privacy Calculus Theory (PCT), individuals engage in a decision-making process regarding self-disclosure by weighing the potential costs and rewards associated with such actions (Culnan & Armstrong, 1999; Trepte et al., 2020). The privacy calculus, as suggested by Culnan and Armstrong (1999) and later referenced by Sun et al. (2019), involves a cognitive assessment of the implications of one's decisions by evaluating the potential costs and benefits in privacy decision-making scenarios, as per the PCT.

In this context, if perceived benefits outweigh the costs, individuals are more inclined to have a higher willingness to share their personal information. This trade-off calculus approach is particularly interesting, highlighting the pivotal role of perceived benefits versus costs in shaping individuals' decisions regarding personal information sharing.

Moreover, the privacy calculus is significantly influenced by the context. In some situations,

individuals may willingly disclose private information in exchange for specific benefits, while in other circumstances or times, they might take extreme measures to protect their privacy (Acquisti et al., 2015). This context-dependent nature of privacy decision-making underscores a significant difference in individuals' behaviors and actions regarding the disclosure of personal information.

APCO framework

Since our goal is to investigate the elements impacting tourists' information privacy concerns, the APCO Framework offers positivist privacy researchers an underpinning macro model that outlines relationships with antecedents and outcomes of privacy concerns (Dinev & Hart, 2014; Smith et al., 2011). Smith et al. (2011) created a macro-level paradigm known as antecedents - privacy concerns - outcomes (APCO) that served as the basis for almost all observational privacy investigations.

2.2. Related research article

The Stimulus-Organism-Response (S-O-R) model forms the basis of Jun-Hwa Cheah's research (2022), which employs the Psychological Reactance Theory to analyze consumer behavior in omnichannel shopping.

Olayinka Olasumbo Afolabi, Ali Ozturen, and Mustafa Ilkan's research (2021) indicates that smart tourism locations are expanding due to the increased use and adoption of technology to enhance travel experiences.

According to Li Shujun, Freitas, and Ioannou's research (2021), numerous internet services request personal information from users to deliver more personalized services.

In the study by Ioannou et al. (2020), two main goals are identified: (1) Recognizing the causes of travelers' online privacy concerns; (2) Examining the implications of privacy concerns and other relevant aspects for the sharing of biometrics and behavioral data, using two distinct types of personal data: biometric and behavioral.

Iis Tussyadiah and Athina Ioannou's research (2020) highlights information privacy as a significant concern for academics, practitioners, and the general public due to technological advancements used by businesses and governments for gathering sensitive personal information.

Sun et al.'s research (2019) indicates that many consumers prefer online shopping due to its simplicity and availability of reasonably priced goods.

The Internet of Things (IoT) involves the sharing of data among humans, people-things, and stuff-things (Kim et al., 2019; Hsu & Lin, 2016). However, this definition is not entirely contemporary.

For a considerable period, Internet users have traded their personal information for access to online resources (Yeh et al., 2018a).

According to Manuel David & Cristiana (2018), tourist data processed in a smart tourism environment mainly comprises personal data obtained from social networks, intelligent apps, ubiquitous sensors, big data analytics, etc.

As in other countries, travelers in Vietnam increasingly utilize modern technologies and social media.

2.3. Research hypotheses

The causes of tourists' privacy worries. Based on the categories above, we define trust as users' cognitive judgments about a service provider's ability to secure personal data from unauthorized parties and secondary use. Risk removal is impractical and requires confidence because it cannot be verified before a contract. Tourists trust travel service providers to protect their data, thus they worry less about privacy. Thus, one can speculate that:

H1: Trust negatively impacts tourists' privacy concerns.

Self-perception of predisposition information tendency relative to others is disposition to trust. Tourists who value privacy will value their borders more.

H2: Disposition to privacy positively impacts tourists' privacy concerns.

Popular media, which tends to focus on identity safety threats and releases personal bad tales of tourism fraud online, can help raise privacy awareness.

H3: Privacy awareness positively impacts tourists' privacy concerns.

When tourists believe they can control how their sensitive information is utilized in the future, they feel less vulnerable and less concerned about privacy violations (Culnan & Armstrong, 1999).

H4: Perceived privacy control negatively impacts tourists' privacy concerns.

H5: Privacy experience positively impacts tourists' privacy concerns.

H6: Privacy knowledge positively impacts tourists' privacy concerns.

H7: Privacy protection regulation perceptions negatively impact tourists' privacy concerns.

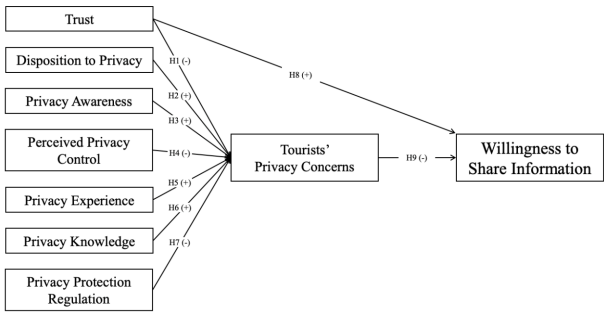
Dinev and Hart (2006) define trust as a multifaceted concept with many definitions. Zarmpou et al. (2012) state that the literature recommends several ways to characterize and measure "trust," including personal privacy, which allows a customer to choose how his or her sensitive information is used, and presumed integrity, which shows that one party believes the other has the skills to do a job well.

H8: Trust positively impacts willingness to share information.

More specifically, it is an Internet user's concern over the collecting of personal information, their authority over it, and their knowledge of how it is used (Malhotra et al., 2004).

H9: Tourists' privacy concerns negatively impact willingness to share their information.

Figure. Conceptual model



3. Research Methodology

Qualitative research

This phase included two expert in-depth interviews and one eight-person focus group.

Quantitative research

A 400-person stratified random sample survey was undertaken. Stratified random sampling involves stratifying the subject population and collecting samples from each stratum. Stratified random sampling divides a target population into smaller, more homogeneous groupings.

4. Research Results

Out of 423 respondents from both online and offline surveys, 406 met the criteria. The survey included 133 men, 269 women, and 4 others, constituting 32.76%, 66.26%, and 0.99%, respectively. In terms of age groups, there were 90 respondents aged 15-24, 150 aged 25-39, 103 aged 40-54, 41 aged 55-65, and 22 aged over 65.

Regarding monthly income and allowances, 38 respondents reported earnings below 3 million VND. The breakdown for income brackets was as follows: 58 respondents earned between 3 and 5 million VND, another 58 earned between 5 and 7 million VND, 81 earned between 7 and 10 million VND, 112 earned between 10 and 15 million VND, 20 earned between 15 and 20 million VND, and finally, 39 earned over 20 million VND.

Confirmatory Factor Analysis (CFA)

The AVE ranges from 0,704 to 0,84, over 0,5, ensuring convergence. Discriminability is assured because all MSV values are smaller than AVE and SQRTAVE (Square root of the average variance extracted) values are bigger than all Inter-Construct Correlations.

Structural Equation Modelling (SEM)

Relevance of Model Relationships: Five significant associations ($p<0.05$) are evident: PA and PE to TPC, and TPC, TR, PB to WSI. No significant correlations were found for TR, DP, PK, PC, PPR to TPC. Table 1.1 demonstrates our support and rejection of hypotheses. In the two components influencing TPC, PA and PE exhibit descending levels of influence. In descending order, TR, PB, and TPC affect WSI, with TPC negatively influencing (as per theory). All hypotheses except for 5 were validated. PA and PE account for 37.5% of the variance in TPC, while TR, PB, and TPC collectively influence 26.9% of the variation in WSI.

Hypotheses testing of the proposed theoretical model

Hypothesis	P (Sig)	Estimates	Results
H1: Trust (-) Tourists' Privacy Concerns	0.166	-0.077NS	*Not Supported*
H2: Disposition to Privacy (+) Tourists' Privacy Concerns	0.165	0.11NS	*Not Supported*
H3: Privacy Awareness (+) Tourists' Privacy Concerns	***	0.374	Supported
H4: Perceived Privacy Control (-) Tourists' Privacy Concerns	0.145	0.08NS	*Not Supported*
H5: Privacy Experience (+) Tourists' Privacy Concerns	***	0.269	Supported
H6: Privacy Knowledge (+)Tourists' Privacy Concerns	0.892	-0.009NS	*Not Supported*
H7: Privacy Protection Regulation (-) Tourists' Privacy Concerns	0.883	0.01NS	*Not Supported*

Hypothesis	P (Sig)	Estimates	Results
H8: Trust (+) Willingness to Share Information	***	0.346	Supported
H9: Perceived Benefits (+) Willingness to Share Information	***	0.224	Supported
H10: Tourists' Privacy Concerns (-) Willingness to Share Information	***	-0.197	Supported

5. Conclusion

The research has identified two elements impacting visitors' privacy concerns and three factors affecting their readiness to share information, each with varying degrees of influence. Qualitative research findings reveal that tourists' privacy concerns are influenced by privacy experience and awareness. Tourists' engagement with news, trends, and contemporary cultural attitudes regarding privacy reflects their understanding of this issue. Additionally, they stay updated on privacy protection strategies employed by tourism service providers.

Among the three elements affecting visitors' willingness to provide information, only privacy concerns have a negative effect. Trust and perceived advantages, in that order, have the most favorable impact. The study titled "The Impact of Privacy Concerns on Tourists' Data-Sharing Behaviors" has nearly achieved all its objectives. These objectives include the effective development of a theoretical model, a comprehensive examination of scales measuring antecedents impacting privacy concerns, and an analysis of factors influencing visitors' data-sharing behaviors.

6. Practical implications

The results of this study provide valuable insights for the tourism industry, enabling them to make more informed decisions regarding the utilization of passenger behavioral data. This encompasses a comprehensive array of service providers, not limited to airlines, travel agencies, auto rental firms, and cruise ships, but also government agencies and entertainment companies catering to passengers. Given the significance of data collection as a critical determinant and advantageous resource for firms, our study aims to contribute to organizations' understanding of customer privacy requirements and concerns. Consequently, organizations will gain enhanced understanding of their clientele and access to a wider range of data management possibilities, along with modifications to privacy protocols.

To begin, we focus on outlining some implications for the supported variables. Let's start with the discovery that 'trust influences tourists' willingness to share information.' The findings from this study will assist firms in determining how to create more enticing advertising or incentives to encourage consumers to disclose personal information. Moreover, providers can offer explicit information on their websites about how data acquisition and personalization can benefit and add value for users while ensuring the organization's privacy.

Furthermore, our findings indicate that 'privacy experience influences tourist privacy concerns, leading to a willingness to share information.' One potential solution could be the development of privacy-enhancing apps as standalone software or add-ons. These apps would allow consumers to assess the risk associated with service providers (i.e., whether they are unsafe or trustworthy) and decide the extent and type of personal information they are willing to share.

References:

Acquisti, A., Brandimarte, L., & Loewenstein, G. (2015). Privacy and human behavior in the age of information. Science, 347(6221), 509-514.

Bélanger, F., & Crossler, R. E. (2011). Privacy in the digital age: a review of information privacy research in information systems. MIS quarterly, 1017-1041.

Bennett, C. J. (1995). The political economy of privacy: a review of the literature. Hackensack, NJ: Center for Social and Legal Research.

Buchanan, T., Paine, C., Joinson, A. N., & Reips, U.-D. (2007). Development of measures of online privacy concern and protection for use on the Internet. Journal of the American society for information science and technology, 58(2), 157-165. https://doi.org/10.1002/asi.20459.

Culnan, M. J., & Armstrong, P. K. (1999). Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation. Organization science, 10(1), 104-115.

Dinev, T., & Hart, P. (2005). Internet privacy concerns and social awareness as determinants of intention to transact. International Journal of Electronic Commerce, 10(2), 7-29.

Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17(1), 61-80.

Dinev, T., & Hart, P. (2014). Internet Privacy Concerns and Social Awareness as Determinants of Intention to Transact. International Journal of Electronic Commerce, 10(2), 7-29. https://doi.org/10.2753/jec1086-4415100201.

Hsu, C.-L., & Lin, J. C.-C. (2016). An empirical examination of consumer adoption of Internet of Things services: Network externalities and concern for information privacy perspectives. Computers in Human Behavior, 62, 516-527.

Ioannou, A., Tussyadiah, I., & Lu, Y. (2020). Privacy concerns and disclosure of biometric and behavioral data for travel. International Journal of Information Management, 54, 102122.

Jun-Hwa Cheah, Xin-Jean Lim, Hiram Ting, Yide Liu, Sara Quach (2022). Are privacy concerns still relevant? Revisiting consumer behaviour in omnichannel retailing. Journal of retailing and consumer services, Volume 65, 2022.

Jung, Y., & Park, J. (2018). An investigation of relationships among privacy concerns, affective responses, and coping behaviors in location-based services. International Journal of Information Management, 43, 15-24. https://doi.org/10.1016/j.ijinfomgt.2018.05.007.

Kim, D., Park, K., Park, Y., & Ahn, J.-H. (2019). Willingness to provide personal information: Perspective of privacy calculus in IoT services. Computers in Human Behavior, 92, 273-281.

Smith, H. J., Milberg, S. J., & Burke, S. J. (1996). Information privacy: Measuring individuals' concerns about organizational practices. MIS quarterly, 167-196

Smith, H. J., Dinev, T., & Xu, H. (2011). Information privacy research: an interdisciplinary review. MIS quarterly, 989-1015.

Taddicken, M. (2010). Measuring online privacy concern and protection in the (social) web: Development of the apcp and apcp-18 scale. 60th Annual ICA Conference (International Communication Association), Singapur (June 2010)

Yeh, C.-H., Wang, Y.-S., Lin, S.-J., Tseng, T. H., Lin, H.-H., Shih, Y.-W., & Lai, Y.-H. (2018a). What drives internet users' willingness to provide personal information? Online Information Review.

Zarmpou, T., Saprikis, V., Markos, A., & Vlachopoulou, M. (2012). Modeling users' acceptance of mobile services. Electronic Commerce Research, 12(2), 225-248.

LITERATURE REVIEW OF RESEARCH ON FACTORS INFLUENCING ACCOUNTING INFORMATION QUALITY

MA. Ha Hoang Nhu*

Abstract: ***The quality of accounting information significantly impacts the judgments and effectiveness of decisions made by its users. Consequently, accounting information's quality is a topic of great concern, and researching the factors influencing its quality remains an ongoing area of interest for researchers. This article aims to synthesize existing research on the factors that affect the quality of accounting information, identifying gaps that necessitate further investigation in the future.***

• Keywords: *accounting information quality, relevance, faithful, comparability, understandability, timeliness.*

JEL codes: M40

Date of receipt: 06th September, 2023
Date of delivery revision: 07th September, 2023
Date of receipt revision: 24th October, 2023
Date of approval: 01st November, 2023

Tóm tắt: *Chất lượng của thông tin kế toán sẽ ảnh hưởng rất lớn đến những phán đoán, hiệu quả của quyết định của những người sử dụng thông tin kế toán. Do vậy, chất lượng thông tin kế toán là vấn đề được nhiều người quan tâm và việc nghiên cứu các nhân tố ảnh hưởng đến chất lượng thông tin kế toán là đề tài luôn được các nhà nghiên cứu quan tâm. Bài viết này tiến hành tổng hợp các nghiên cứu nhân tố ảnh hưởng đến chất lượng thông tin kế toán đã được thực hiện để phát hiện ra khoảng trống cần nghiên cứu trong tương lai.*

• Từ khóa: *chất lượng thông tin kế toán, thích hợp, tin cậy, có thể so sánh, dễ hiểu, kịp thời.*

Introduction

Accounting information represents the output of an accounting information system that various stakeholders (such as investors, banks, suppliers, government regulatory bodies, financial analysts, etc.) use to assess risks and prospects related to a company's future. Consequently, they make informed decisions regarding the company's operations. Thus, the quality of accounting information significantly impacts the judgments and effectiveness of decisions made by users of such information. High-quality accounting information instills trust in investors, especially foreign investors, facilitating capital attraction for the development of the Vietnamese stock market and the overall Vietnamese economy. As a result, the quality of accounting information stands as a top concern for investors, banks, government regulatory agencies, researchers, and other relevant parties.

In Vietnam, state management agencies continually strive to enhance the quality of information disclosed in the Vietnamese stock market. Currently, regulations concerning information disclosure in the securities market are stipulated in the Vietnamese Securities Law and Circular 96/2020/TT-BTC (effective from January 1, 2021) - Guidelines on information disclosure in the securities market. In addition, annually, the Ho Chi Minh City Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX) collaborate with the Investment Newspaper, sponsored by Dragon Capital, to organize the "Vietnam Annual Report Awards". This competition has had a positive impact on changing the perception of businesses, encouraging them to improve their professionalism and transparency in information disclosure. It has also helped investors gain better access to high-quality accounting information from listed companies. The competition plays a role in building a healthier and more effective Vietnamese stock market.

Despite continuous efforts by state regulatory agencies to improve the quality of accounting information of listed companies, the quality of accounting information varies among these companies. Therefore, it is necessary to research

** SaiGon University (SGU); email: hahoangnhu@sgu.edu.vn*

the factors that influence the quality of accounting information of listed companies on the Vietnam Stock Exchange to develop solutions for enhancing this quality.

According to the author's investigation, there are numerous studies related to the factors that affect the quality of accounting information. The objective of this article is to provide an overview of research directions regarding these factors to identify gaps in the existing research related to this issue. Through synthesis and analysis methods, the author has conducted a survey of published studies in this area.

The concept of accounting information quality

Accounting information quality is complex, encompassing the appropriate value of accounting information, the preservation of accounting, and income management (Francis, Olsson, & Schipper, 2008). The quality of accounting information is examined in terms of the quality attributes that meet the requirements of users of accounting information in decision-making (O'Brien, 2010).

According to IASB and FASB (IASB, 2010), the characteristics of useful financial information are divided into fundamental quality characteristics and enhancing quality characteristics. The fundamental quality characteristics include relevance and faithful representation. The enhancing quality characteristics consist of comparability, understandability, and timeliness.

- Relevance: To be relevant, accounting information must have the ability to make a difference in the decisions of the information user. It "must have predictive value, confirmatory value, or both" (IASB, 2010a, p. QC7). Financial information has predictive value if it can be used as an input to user predictions about future outcomes. Financial information has confirmatory value if it provides feedback about previous evaluations.

- Faithful Representation: Information is faithfully represented when it is described completely, neutrally, and without error (IASB, 2010a). Completeness means that the information includes all necessary elements for users to understand the phenomena, including all necessary descriptions and explanations. Neutrality implies there is no bias in selection or presentation, meaning it is not skewed to achieve a predetermined result or influenced by individual attitudes. Free from error means there are no mistakes or omissions in the descriptions and the process of preparing the information. For instance, an estimate may not be able to be determined as exact or inexact, but the faithful representation of the estimate means the amount is described clearly, and the nature and limitations of the estimation process are explained.

- Comparability: Information about an entity is more useful when it can be compared to similar information about other entities or about the same entity for different periods. Comparability allows users to distinguish between similarities and differences in items (IASB, 2010a). IASB and FASB also suggest that comparability can be achieved through achieving the fundamental quality characteristics. Faithful representation of economically appropriate information inherently achieves, to some extent, the quality of comparability with economically appropriate similar information faithfully represented by another entity.

- Understandability: Information is understandable if it is classified, described, and presented clearly and concisely. Financial reports are prepared for users who have a reasonable knowledge of business and economic activities.

- Timeliness: Timeliness means that information is available to users in time to make a difference; information becomes less useful if it is outdated. However, if users need the information to assess trends, some information may still be useful after the reporting period.

High-quality accounting information supports decision-making for information users. Therefore, understanding the factors influencing the quality of accounting information is essential. Research related to the factors affecting the quality of accounting information has been conducted by researchers.

Overview of the literature on factors affecting the quality of accounting information

The literature review is presented in four groups of factors influencing the quality of accounting information that researchers have explored.

Research on the Influence of the Business Environment on the Quality of Accounting Information

In this research direction, two authors, Mazzioni and Klann (2018), investigated how the characteristics of the business environment affect the quality of accounting information in an international context. This study employed a quantitative method, and the research data were sourced from

The Thomson Datastream Index Service – TDIS database. The sample size included 1,406 companies from 12 countries (Germany, Australia, Brazil, Canada, China, the United States, the Netherlands, India, Indonesia, Japan, the United Kingdom, and Switzerland). The research revealed that in countries with lower tax burdens, stronger legal environments, higher economic and financial development indices, a common law origin, and greater internationalization, the quality of accounting information was rated from average to high in the overall ranking. The application of accounting standards also determined the position of accounting information quality in the composite ranking.

Research on the Impact of the Accounting Information System on the Quality of Accounting Information

This research direction has been pursued by several authors from various perspectives.

Author Komala (2012) conducted a study on the influence of the accounting information system on the quality of accounting information through the impact of accounting managers' knowledge and top management support for the accounting information system. The author surveyed a sample of 31 Zakat management organizations in Bandung (Zakat is a financial term in Islam referring to an individual's annual obligation for charitable activities). The author assessed the quality of accounting information in these Zakat management organizations based on qualitative characteristics such as accuracy, appropriateness, timeliness, and completeness. The variables in this study were measured using a 5-point Likert scale. The results indicated that the knowledge of accounting managers and top management support significantly influenced the accounting information system. Additionally, the quality of the accounting information system also had an impact on the quality of accounting information.

Authors Zadeh, Karkon, and Golnari (2017) conducted a study on the impact of information technology on the quality of accounting information. The study conducted a survey with 425 CEOs of listed companies on the Tehran Stock Exchange, using a simple random sampling method, with a sample size of 84 managers from these companies being considered. The authors collected data based on a questionnaire about information technology, which included questions about the impact of information technology using standardized questions and questions designed based on existing components. After collecting the questions, the authors used Smart PLS12 software to analyze the data and test the hypotheses. The research results showed that information technology and its aspects (timeliness, appropriateness, accuracy, completeness, and actual delivery speed) have an impact on the quality of accounting information in listed companies on the Tehran Stock Exchange.

Susanto (2015) conducted a survey of program heads, program secretary heads, accounting staff, lecturers, and university education students in Bandung, Indonesia, to determine the factors influencing the quality of accounting information. The research results showed that the quality of accounting information is influenced by the quality of the accounting information system. Accounting information has not been fully standardized due to the integration of departments and the lack of perfect harmony between subsystems.

Research on the impact of various internal factors within businesses on the quality of accounting information

The authors have studied the influence of many different factors within the enterprise (such as enterprise size, internal audit, internal control, corporate governance, financial leverage, etc.) on the quality of accounting information.

Ogundana and et. al (2017) studied the quality of accounting information and the characteristics of internal audit in Nigeria. The authors examined the relationship between the internal audit function and the quality of accounting information in companies. In this study, internal audit was considered in terms of two factors: competence and independence. The research used a questionnaire as a tool to survey the opinions of internal auditors from Big Four audit firms. Linear regression analysis was used to analyze the data collected using SPSS software. The research results showed a significant relationship between the internal audit function and the quality of accounting information; there was no significant relationship between the competence and independence of internal auditors with the quality of accounting information. The authors recommended that, to provide reliability for financial reports, there should be: Independence of the internal audit office from management and executive directors; Internal auditors should be legally allowed to have a column in financial reports so they can summarize their

reports on the organization's status and activities; Accounting bodies and accounting regulatory agencies should take measures to enhance the independence and competence of internal auditors.

Two authors, Super and Shil (2017), conducted an examination of determinants of the quality of accounting information disclosed by companies in Nigeria. The research utilized secondary data collected from the Nigerian stock market. The authors employed ordinary least squares regression techniques to test the hypotheses for this study. The study found a positive relationship between firm size and the quality of disclosed accounting information. Organizational ownership, firm efficiency, and earnings per share also had positive relationships with the quality of disclosed information. Firm leverage was found to have a negative relationship with the quality of disclosed information. The study recommended that companies should consider the idea of organizational ownership and should also minimize the use of leverage.

Author Fathi (2013) conducted research on the determinants of the quality of financial information disclosed by French-listed companies. The author examined the relationship between the quality of disclosed financial information and the governance mechanisms for specific features of the board of directors, ownership structure, and control systems of French-listed companies on the SBF 250 over a 5-year period from 2004 to 2008. The quality of financial information was measured using arbitrary cumulative items and information disclosure indexes with 78 items. The research results indicated that the board of directors' size, the participation of members in board meetings, the presence of Big 4 auditors, and dual listing had a positive impact on the quality of financial information. Conversely, the presence of institutional investors yielded contrasting results.

Beuselinck and Manigart (2007) conducted research on the financial reporting quality of privately held non-listed companies. The authors conducted empirical research on a sample of 270 privately held companies, and the research results showed that the ownership structure of privately held companies influenced the quality of their disclosed accounting information. In other words, companies in which private equity investors have a high ownership stake produce lower-quality accounting information compared to companies in which private equity investors have a low ownership stake, after controlling for factors such as company size and age. According to the authors, this is because private equity investors with low ownership stakes have a higher demand for high-quality accounting information, while private equity investors with high ownership stakes have alternative ways to closely monitor companies in their investment portfolio.

Al_Sufy and colleagues (2013) conducted research on the impact of corporate governance on the accounting information quality of listed industrial companies in the Amman-Jordan financial market. In this study, the concept of governance and the importance of governance were examined in terms of objectives, principles, and the role of corporate governance in Jordan, as well as the impact of corporate governance principles on the quality of financial reporting. The authors collected data from primary and secondary sources through a questionnaire developed by the authors and conducted a survey of 50 industrial companies. The authors performed data analysis and tested hypotheses using SPSS software. The research yielded several findings, including that both preparers and users of financial reports have a full understanding of the concept of corporate governance, and corporate governance principles have an impact on the quality of financial reporting, making it more accurate and higher in quality. Additionally, the study recommended that the effective implementation of corporate governance principles would influence the quality of financial reporting and make it more accurate and valuable.

Kukah and et. al (2016) conducted a study on the significance of corporate governance mechanisms and the quality of accounting information of listed companies in Ghana. This research was based on a sample of 20 non-financial organizations listed on the Ghana Stock Exchange (GSE) over an 11-year period from 2003 to 2013. The results showed that the independence of the board of directors and foreign ownership limited managerial opportunities to manipulate earnings, leading to higher accounting information quality. On the other hand, the dual roles of CEOs and the reputation of Big 4 audit firms reduced the quality of accounting information and contributed to arbitrary accruals. Lastly, the research results indicated that ownership rights also had an impact on the quality of accounting information. These findings have important policy implications for regulatory bodies in evaluating the effectiveness of corporate governance on income quality.

Mulyani and Arum (2016) studied the influence of managerial competence and internal control

effectiveness on the quality of accounting information of companies listed on the Indonesia Stock Exchange. The study was conducted on 87 listed companies and analyzed using the SEM-PLS model. The experimental results indicated that managerial competence and internal control effectiveness had a positive and significant impact on the quality of accounting information of companies listed on the Indonesia Stock Exchange.

Hosseinzadeh and et. al (2014) conducted a study on the relationship between company characteristics and the quality of financial disclosure of companies listed on the Tehran Stock Exchange (TSE). The authors selected 89 listed companies on the TSE for their research spanning from 2004 to 2012. To rank the quality of financial information disclosure (timeliness and reliability), the authors used annual scores of information disclosure quality (published by the Tehran Securities Exchange Commission). The company characteristics examined in this study included company size, company age, company stability, pre-tax and pre-interest income, industry type, financial leverage, audit firm size, and ownership structure. The results showed that financial leverage had a significant negative impact on the timeliness and reliability of financial information disclosure. This could be attributed to the fact that companies with higher financial leverage tend to conceal financial information from creditors, and conversely, such companies tend to delay the disclosure of information as it might lead to perceptions of financial distress. Company age had a positive effect on the reliability of information disclosure because older companies are typically larger, have more institutional ownership, and are subject to more external scrutiny, thereby requiring them to disclose reliable information. Other variables did not have a significant impact on a company's information disclosure.

Yanfang Sun and Dongchang Lu (2017) examined the relationship between managerial power and the quality of accounting information in Chinese firms. In this study, the scale of managerial power was measured through the duality of the CEO and Chairman of the board, while the quality of accounting information was assessed in two aspects, including earnings management and the quality of accounting information disclosure. The study focused on Chinese companies from 2008 to 2013. The research results indicated that the scale of managerial power significantly affects earnings management. As managerial power increases, earnings management also increases. Furthermore, the scale of managerial power significantly impacts the quality of accounting information disclosure. With greater managerial power, the quality of accounting information disclosure tends to be lower. In summary, the scale of managerial power has a significant impact on the quality of accounting information. Higher managerial power is associated with lower-quality accounting information.

Holtz and Sarlo Neto (2014) investigated the influence of board characteristics on the quality of accounting information in Brazil. In this study, the adequacy of accounting information and income information was used as proxies for the quality of accounting information. The results showed that, for publicly traded companies in the Brazilian stock market, characteristics related to board independence and the separation of roles between the chairman and CEO had a positive impact on the reported quality of accounting information, particularly regarding the adequacy of owner's equity information. Income information was positively influenced by board independence and negatively affected by larger board sizes (more than 9 members).

Research on the impact of internal and external factors within businesses on the quality of accounting information

Ahmad and Ilyas (2019) conducted a study on the relationship between audit quality and the quality of financial information, measured by earnings management, for non-financial companies listed on the Pakistan Stock Exchange (PSE) from 2000 to 2016. The study was based on the argument that audit quality, as provided by Big 4 audit firms, improves the quality of financial information by limiting the discretion of management in reporting accounting information or reducing their ability to misappropriate shareholder assets (thus reducing earnings management). The research results indicated that Big 4 audit firms constrained the earnings management of their client companies. This suggests that higher audit quality is associated with higher-quality financial reporting. This could be attributed to the greater resources, knowledge, and experience that these audit firms bring to their client companies. The research results indicated that Big 4 audit firms constrained the earnings management of their client companies. This suggests that higher audit quality is associated with higher-quality financial reporting. This could be attributed to the greater resources,

knowledge, and experience that these audit firms bring to their client companies.

Kao and Wei (2014) conducted a study examining the influence of IFRS, information asymmetry, and corporate governance on the quality of accounting information. The authors investigated the relationships between information asymmetry, ownership structure, directorial commitment, and the quality of accounting information under different accounting standards. By considering China's A and B stock markets, and applying both Chinese GAAP and IFRS, the authors discussed whether IFRS could mitigate the negative impact of information asymmetry, ownership structure, directorial commitment, and, furthermore, enhance the quality of accounting information efficiently. The research results indicated that IFRS improved predictive value and timeliness, and it could significantly affect agent loyalty. Second, information asymmetry decreased the quality of accounting information. However, IFRS could alleviate information asymmetry but had an insignificant effect on enhancing the quality of accounting information. Third, state ownership, managerial ownership, block ownership, and directorial ownership influenced the quality of accounting information. IFRS restricted the negative impact of state ownership, managerial ownership, block ownership, and directorial ownership and could enhance predictive value and timeliness. Lastly, directorial commitment reduced the quality of accounting information. However, IFRS could mitigate the negative effects of directorial commitment and significantly promote the quality of accounting information. Therefore, the adoption of IFRS could substantially enhance the quality of accounting information. However, IFRS should address information asymmetry and utilize corporate governance mechanisms to promote the quality of accounting information. The findings of this study provide a reference for other countries when deciding to adopt IFRS.

Next Research Directions

Based on the overview of previous studies, the author notes that some researchers have investigated the capabilities of managers (Mulyani & Arum, 2016) and internal auditors (Ogundana et al., 2017) in relation to the quality of accounting information. However, the role of the Chief Accountant - the primary individual responsible for accounting reporting and accounting information disclosure - has not been explored. This is a research gap that the author has identified. Therefore, the author has introduced the factor "Capability of the Chief Accountant" into the research model to examine its impact on the quality of accounting information.

Conclusion

The quality of accounting information significantly impacts the judgments and effectiveness of decisions made by its users. Consequently, accounting information quality is a topic of great concern, and researching the factors influencing its quality remains an ongoing area of interest for researchers. This article aims to synthesize existing research on the factors that affect the quality of accounting information, identifying gaps that necessitate further investigation in the future.

References:

Ahmad, A., & Ilyas, M. (2019). Does audit quality improve quality of accounting information in Pakistan's capital market? City University Research Journal, 9(1), 206-219.

Al_Sufy, F. J., Almbaideen, H., Al_abbadi, H. M., & Makhlouf, M. H. (2013). Corporate governance and its impact on the quality of accounting information in the industrial community shareholding companies listed in Amman financial market-Jordan. International Journal of Humanities and Social Science, 3(5), 184-195.

Beuselinck, C., & Manigart, S. (2007). Financial reporting quality in private equity backed companies: The impact of ownership concentration. Small Business Economics, 29, 261-274.

Fathi, J. (2013). The determinants of the quality of financial information disclosed by French listed companies. Mediterranean Journal of Social Sciences, 4(2), 319.

Francis, J., Olsson, P., & Schipper, K. (2008). Earnings quality. Foundations and Trends® in Accounting, 1(4), 259-340.

Holtz, L., & Sarlo Neto, A. (2014). Effects of board of directors' characteristics on the quality of accounting information in Brazil. Revista Contabilidade & Finanças, 25, 255-266.

Hosseinzadeh, G., Kangarlouei, S. J., & Morteza, M. (2014). Firms characteristic and firms disclosure quality in firms listed in Tehran Stock Exchange. International Journal of Marketing and Business Communication, 3(1), 20-28.

IASB, E. D. (2010). Conceptual framework for financial reporting. International Accounting Standards Board (IASB).

Kao, H.-S., & Wei, T.-H. (2014). The Effect of IFRS, Information Asymmetry and Corporate Governance on the Quality of Accounting Information. Asian Economic and Financial Review, 4(2), 226-256.

Khorashadi Zadeh, M. H., Karkon, A., & Golnari, H. (2017). The effect of information technology on the quality of accounting information. Journal of System Management, 3(3), 61-76.

Komala, A. R. (2012). The influence of the accounting managers' knowledge and the top managements' support on the accounting information system and its impact on the quality of accounting information: A case of Zakat Institutions in Bandung. Journal of Global Management, 4(1), 53-73.

Kukah, M. A., Amidu, M., & Abor, J. Y. (2016). Corporate governance mechanisms and accounting information quality of listed firms in Ghana. African Journal of Accounting, Auditing and Finance, 5(1), 38-58.

Mazzioni, S., & Klann, R. C. (2018). Aspects of the quality of accounting in the international context. Revista Brasileira de Gestão de Negócios, 20, 92-111.

Mulyani, S., & Arum, E. D. P. (2016). The influence of manager competency and internal control effectiveness toward accounting information quality. International Journal of Applied Business and Economic Research, 14(1), 181-190.

O'Brien, J. A. M., George M. (2010). Introduction to Information Systems. 15.

Ogundana, O., Ojeka, S., Ojua, M., & Nwaze, C. (2017). Quality of accounting information and internal audit characteristics in Nigeria. Journal of modern accounting and auditing, 13(8), 333-344.

Sun, Y., & Lu, D. (2017). Study on the relationship between managerial power and the quality of accounting information. Paper presented at the Proceedings of the Fourth International Forum on Decision Sciences.

Super, S. O., & Shil, N. C. (2017). Determinants of quality accounting information disclosure. Journal of Accounting and Finance in Emerging Economies, 3(1), 79-86.

Susanto, A. (2015). What factors influence the quality of accounting information. International Journal of Applied Business and Economic Research, 13(6), 3995-4014.

RESEARCH ON APPLICATION OF THE MODEL OF VALUABLE VALUES IN ACCOUNTING OF FIXED ASSETS AT MINERAL MINING ENTERPRISES IN VIETNAM

PhD. Pham Thu Huyen* - MA. Nguyen Thi Hong*

Abstract: ***In the context of international economic integration, the objective of accounting information is shifted towards meeting the decision-making needs of stakeholders. This is the basis for the development of new accounting theories, especially the change and development in the use of measurement bases including the fair value model. In the current period, although there are still many debates, but the fact that the International Accounting Standards Board (IASB) has issued a separate financial reporting standard on the measurement of fair value (IFRS 13) to unify the determination and measurement of fair value in standards, shows that fair value has really become a trend in the development of an accounting regulatory framework. Through the method of observation survey by questionnaire and in-depth interviews with experts to collect primary data, the article has studied the applicability of the fair value model in accounting for Fixed assets in mineral mining enterprises in Vietnam. The results show that the majority of mining enterprises and related entities (banks, auditing sectors) surveyed are aware of the importance of the fair value model and are ready to measure Fixed assets according to the fair value model if the Ministry of Finance issues specific guidance documents.***

• Keywords: *fair value model, non-current assets, mineral mining enterprises.*

Date of receipt: 06th September, 2023 *Date of receipt revision: 24th October, 2023*

Date of delivery revision: 07th September, 2023 *Date of approval: 01st November, 2023*

Tóm tắt: *Trong bối cảnh hội nhập kinh tế quốc tế, mục tiêu của thông tin kế toán được chuyển sang hướng đáp ứng nhu cầu ra quyết định của các bên liên quan. Đây là cơ sở cho sự phát triển của các lý thuyết kế toán mới, đặc biệt là sự thay đổi và phát triển trong việc sử dụng các cơ sở đo lường trong đó có mô hình giá trị hợp lý. Trong giai đoạn hiện nay, mặc dù vẫn còn nhiều tranh cãi nhưng việc Ủy ban Chuẩn mực Kế toán Quốc tế (IASB) đã ban hành chuẩn mực báo cáo tài chính riêng về đo lường giá trị hợp lý (IFRS 13) nhằm thống nhất việc xác định và đo lường giá trị hợp lý trong các chuẩn mực, cho thấy giá trị hợp lý đã thực sự trở thành một xu hướng trong việc phát triển khung pháp lý kế toán. Thông qua phương pháp khảo sát quan sát bằng bảng câu hỏi và phỏng vấn sâu các chuyên gia để thu thập số liệu sơ cấp, bài viết đã nghiên cứu khả năng ứng dụng mô hình giá trị hợp lý trong kế toán TSCĐ tại các doanh nghiệp khai thác khoáng sản ở Việt Nam. Kết quả cho thấy phần lớn doanh nghiệp khai khoáng và các đơn vị liên quan (ngân hàng, ngành kiểm toán) được khảo sát đều nhận thức được tầm quan trọng của mô hình giá trị hợp lý và sẵn sàng đo lường tài sản cố định theo mô hình giá trị hợp lý nếu Bộ Tài chính ban hành hướng dẫn cụ thể.*

• Từ khóa: *mô hình giá trị hợp lý, tài sản dài hạn, doanh nghiệp khai thác khoáng sản.*

1. Introduction

At the beginning of the 21st century, the trend of using fair value has become more and more widely used by accounting regulatory organizations such as the American Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). In order to unify the determination and use of fair value, the International Financial Reporting Standard No. 13 - "Measuring fair value" (IFRS 13) was issued by the IASB in 2013. According to IFRS13 at the time of initial recognition, non-current assets are recorded at cost but subsequent recognition fixed assets are measured and recorded at fair value. The fair value of the fixed assets is determined based on the active market of the asset which is determined by the estimated price when exchanged between the market participants at the valuation date of the asset and under current market conditions.

** Hanoi University of Industry; email: phamthuhuyen@haui.edu.vn*

To improve the reliability of the information provided, the IASB recommends that entities use maximum observational data and minimize non-observational data when applying fair value techniques. When the value of an asset is not available on the market, the enterprise might determine the fair value based on a 3-level priority evaluation technique, in which, according to level 1, the fair value of the asset is the value of the property listed on the active market, without adjustment; level 2, fair value of assets is determined according to the prices of similar assets observed in the market and adjusted; Level 3, where the input data is not observable in the market, the fair value of the asset is determined on the basis of the present value of net cash flows.

It cannot be denied that the application of fair value in accounting for fixed assets ensures that information on asset value reflects quite closely the true value of the enterprise. In addition, since the fair value of similar fixed assets reflected by different enterprises will be determined equally, then the fixed asset information can be compared. However, not all countries have an active market as a basis for direct observation of fair value determination. At that time, the application of fair value will face difficulties in valuing special fixed assets with specialized fixed assets, the reliability of information will then be very low. Moreover, if market information is not available, accountants must evaluate fixed assets, which cannot be done by all accountants. At that time, enterprises must hire experts to evaluate assets and spend a certain amount of money. In case enterprises have hundreds of different types of fixed assets, the cost of assessment is the main barrier to applying fair value in fixed asset accounting at enterprises in Vietnam.

2. Literature review

2.1. Definition of fair value

The definition of Fair Value has been mentioned in International Accounting Standards for a long time. The first standard that refers to the definition of Fair value is International Accounting Standard No. 16 "Real Estate, Plant and Machinery" (IAS 16), issued in 1982. In this standard, Fair value is defined as "the value of assets that can be exchanged between knowledgeable and willing parties in an exchange transaction of equal value". With IFRS 13, the IASB has officially issued an independent standard to guide the measurement or determination of fair value, and also issued a requirement for disclosure of fair value in financial statements. In IFRS 13 -"Fair value is the price that would be received if an asset were sold or payable if a liability was transferred in a normal transaction between market participants at the measurement date". Although the wordings are slightly different in the definition of Fair value between IAS 16 and IFRS 13, it can be seen that there are salient aspects of Fair value as follows:

- Output price: The views of the IASB and FASB emphasize the output price approach of Fixed assets (eg: Fair Value is the selling price of the asset, not the purchase price).

- Hypothetical transaction: In the definition of Fair value, the transaction is assumed to be performed and performed under normal conditions. The hypothetical transaction is done under "normal" conditions, not a liquidation or forced sale; and to exclude unusual cases, the IASB/FASB has also made exceptions.

- Market participants: Although not explicitly mentioned in the definition of Fair Value, this aspect is required in the detailed content of IFRS 13 and has been pointed out by researchers about Fair Value: Market participants need to have sufficient information and full understanding of the market relevant to the determination of transaction value.

- Trading market: according to the IASB, the trading market in the definition of Fair Value is the main market for the asset class to be valued; or the most optimal market if no primary market exists. At that time, the enterprise will choose the normal market or the unit conducts the asset sale transaction to be the main market. If a "primary market" has been identified for an asset or liability to be traded, the Fair Value is determined at the transaction price in that market even if the transaction price in another market is determined. considered more optimal.

- Time of measurement: determined at the date of measurement of value (based on a hypothetical transaction even though there is no actual transaction occurring at that time). Fair Value does not imply an estimate of future transaction value.

- Transaction price: When defining Fair Value, IFRS 13 does not mention transaction costs. Researchers about Fair Value have explained that: transaction costs are not included in the transaction price, because this is a characteristic of the transaction, not an asset or a liability, transaction costs will be accounted for by other standards. On the other hand, the transaction price is adjusted by

shipping costs (if any), because the location can be considered as the property of the property.

2.2. Research on the model of fixed assets valuation according to fair value

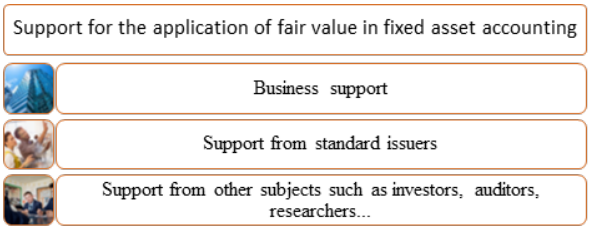
There are many views on choosing the appropriate valuation model when initially recording and subsequent recognition for fixed assets, in which the revaluation model at fair price is supported by many researchers. When it comes to recognizing the value of fixed assets after initial recognition, the author Nicolae Bobitan (2011) believes that the revaluation model at fair value has more advantages than the original cost model. The fair value model accurately reflects the value of a company's assets at market prices. Therefore, after the initial recognition time, if the fair value of the fixed asset is measured reliably, the enterprise can re-evaluate the fixed asset, then the accountant will update the new monetary value of the fixed asset on accounting books.

In the study by Majella Percy (2014), when using fair value to measure the value of fixed assets, the reliability of accounting estimates depends heavily on factors in the operating market of Fixed assets. Research by Adrian Manuel Nebot Sanahuja (2015) has examined the advantages and disadvantages of the revaluation model at fair value on the usefulness of financial information provided by accountants. According to the author, the number of supporters of the revaluation pricing model believes that the information provided is timely and consistent with changes in market prices. In the study of Flaida Emine Alves de Souza & Sirlei Lemes (2016) when it comes to accounting options for measuring fixed assets after initial recognition for listed companies in Brazil, Chile and Peru, the authors have examined surveyed 300 companies listed in these 3 countries in the period 2009-2013 and found that the proportion of enterprises measuring and recording fixed assets at revaluation prices is very small and tends to decrease.

In Vietnam, Pham Thi Minh Hong (2016) pointed out the necessity of accounting for impairment of tangible non-current assets in Vietnam, the shortcomings due to the lack of accounting for impairment of tangible non-current assets. The author has conducted a survey, synthesized the reactions, perceptions and opinions of different subjects (administrators, credit officers, etc.) form to serve as a basis for proposing adjustments when implementing in enterprises. However, the thesis just stopped at analyzing the necessity and studying the reactions of some subjects to consider whether to apply accounting value measurement of tangible non-current assets according to the fair value model or not. There are no data for quantitative research to support this issue. In the study of Mai Ngoc Anh (2010), it is said that in recent times, the fair value model has been increasingly used by international and national drafting agencies in measuring value. receive and present information on financial statements. In the research project of science and technology at ministerial level, author Doan Van Anh et al (2011) presented the content of the method of revaluation according to fair value to determine the residual value. of intangible fixed assets. Author Phan Thi Anh Dao (2015) said that Vietnam Accounting Standards No 04 currently only regulates to use the original cost recorded after the initial intangible non-current assets, without recording the decline in value of fixed assets. While intangible non-current assets depreciate quite a lot. Therefore, according to the author, it is necessary to provide additional regulations on accounting for fair value and accounting for impairment of non-current assets. In addition, a number of other studies have also shown that the application of the "reducing asset value" - IAS 36 is necessary for Vietnam such as Khuc Minh Hoang (2004); Tran Manh Dung (2011). The authors all believe that long-term assets of enterprises are not excluded from the law of depreciation, so it is also necessary to apply the revaluation model at fair value to fixed assets when there are signs of decline in value.

2.3. Research on the support for applying fair value in accounting for fixed assets in enterprises

Figure 1. Objects supporting the application of fair value in fixed asset accounting



Source: Summarizing from the authors

Research on the support of applying Fair Value in accounting has been carried out by researchers on different subjects including: support of standard issuers (Bolivar and Galera, 2012), support of enterprises (Mary et al., 1994; Jung et al., 2013),

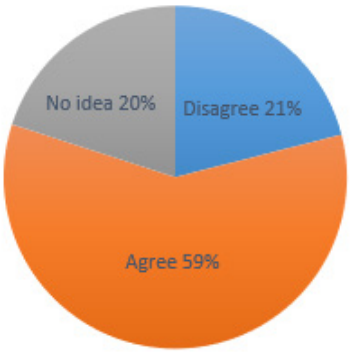
support of investors (Koonce et al., 2011), support of auditors (Kumarasiri and Fisher, 2011), support from professional associations and university researchers and lecturers (Ijeoma, 2014)… The support can be summarized by target groups in Figure.

3. Methodology

Observational survey method by questionnaire was used to collect primary data through direct exchange and interviews with relevant subjects. For businesses in remote areas, the author sends a survey to collect design data via the link https://docs.google.com/forms via email system and facebook messenger applications, Zalo. The total number of ballots distributed was 70, the number of votes returned was 63. After removing invalid votes, the total number of votes included in the analysis was 56. Applying the formula to determine the reasonable sample size for the study. when knowing the total number (70 enterprises in total, with 95% confidence level, the number of enterprises to be surveyed is 70/[1+(70×(0.05)2)] = 55 , so with 56 Enterprises that answer the survey correctly are considered to have reliable sources of information to draw conclusions. The data after being collected is in Excel format for statistics and analysis. When having access to this content, in the survey, the author attached a brief explanation of impairment accounting and fair value valuation model. At the same time, the study also conducted interviews. in-depth banking specialists and experts from the Ministry of Finance.

4. Research results supporting the application of fair value in accounting of fixed assets at mineral mining enterprises in Vietnam

Figure 2. Summarize the survey results for accounting for impairment of fixed assets according to the model of fair value valuation



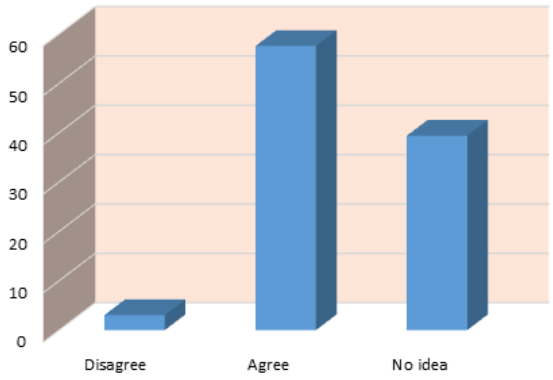
Source: Summarizing from the authors

The purpose of the enterprise survey is to assess the willingness to perform accounting measurement of fixed assets according to the fair value of the items related to preparing financial statements in the enterprises. Thereby the author analyzes the factors affecting the willingness to recording fixed asset accounting according to the fair value model, as a basis for analyzing and proposing solutions to improve the applicability of the fair value model especially when fixed assets show signs of impairment in Vietnam. The survey results are summarized in Figure 2.

Have 58.9% of the respondents in the surveyed enterprises chose the level of Agree to answer the survey question "You agree to perform the accounting for impairment of fixed assets according to the fair value model?". Disagreement rate accounted for 21.4%. The remaining rate is 19.6% No opinion. Thus, according to the survey results, the number of people agreeing to perform accounting for impairment of fixed assets according to the fair value model accounted for a high proportion, the number of people who disagreed accounted for a much lower proportion. This can be considered as a good signal about the applicability of the fair value fixed asset valuation model to accounting policy in Vietnam, which will be agreed upon by those involved in the preparation of financial statements at the enterprises. For the number of people who agreed to implement the accounting treatment of fixed assets at fair value, the author found that the level of education and understanding of accounting decreased in asset value and the value-based measurement model. Out of a total of 33 people who answered Yes, only 2 people have college degrees, 7 people have university degrees and 24 people have graduate degrees. This result can be explained, the more highly qualified people realize the importance of fair value in accounting for fixed assets, they will be willing to absorb new knowledge, not afraid to learn to treat new accounting policies. Out of 9 college and university graduates who answered yes, 6 had ever attended courses abroad or associated programs with foreign countries. That shows, foreign language proficiency is also a factor affecting the readiness to integrate and update international accounting standards. However, among those who agreed to practice fair value in accounting for impairment of fixed assets, when asked, "Vietnam needs to compel enterprises to disclose information on impairment of fixed assets." only 19/33 people (accounting for 57.58%) agree, the rest have no opinion or disagree because they think that in the immediate future, it is only necessary to encourage enterprises to

implement and present accounting information about depreciation. treat fixed assets when there are signs.

Figure 3. Summary of survey results on requirements to disclose information on impairment of fixed assets according to the fair value model



Source: Summarizing from the authors

Regarding the level of understanding of the interviewees to the knowledge of the fair value model of fixed assets before answering the survey, the author has given 3 answer options in the survey: Understanding, Know but do not understand, Don't know. Of the 33 people who agreed, 12 people understood well, 18 people knew the accounting method to impairment of asset value but did not understand clearly, 3 people did not know the asset reduction accounting - the first time they knew about the asset reduction accounting. is according to the brief document the author attached to the survey. The number of 12 respondents who fully understand is characterized by having attended at least one training course on accounting and auditing to reduce asset value and the majority of them can read the Standard in English because they have a university or graduate degree. English-speaking university. Of the 18 respondents who said they knew but did not fully understand, 12 had attended at least one international training course on impairment of assets. Because the asset reduction accounting standard is a complex, estimation-heavy standard, understanding the standard requires in-depth study. But those who were introduced to the standard were also aware of the importance of the standard, so they still agreed to implement it.

The total number of people who answered Disagree was 12 people, accounting for 21.4% of the total survey respondents. Among the 12 people who disagreed, there were 4 respondents who clearly understood the fair value, but the reasons for disagreeing with the implementation of fixed asset accounting according to this model were: (1) Difficult to implement; (2) There are no specific standards and guidelines on asset value impairment; (3) Bad influence on the financial situation of enterprises. According to the author, the reasons for disagreeing given here are completely valid. Researches around the world also show that impairment of assets is a difficult, judgmental and subjective estimation process, so the process of determining asset value reduction can hardly come to an end. consistency between different objects. In difficult economic conditions, accounting operations to reduce the value of assets can cause business results to decrease significantly when the enterprise has a relatively large decrease in asset value. However, according to the author, the respondents who did not agree to do so because of the impact on the financial position of the enterprise did not consider the accounting periods after recognizing the decrease in asset value, which will have the opposite effect on the financial position of the enterprise. Because the assets have been depreciated, the following accounting periods will reduce depreciation costs, and the profits of enterprises will be improved. There are 2/12 people who disagree because they do not know about fair value before answering the survey, 3 people know but do not understand this valuation model. The reasons of 5 people who do not know or know but do not understand the accounting of fixed assets at fair value do not agree to do so, focusing on 3 cases: (1) Difficult to implement; (2) No reliable pricing system; (3) Disagree but do not give reasons. In addition, the author interviewed 6 more chief accountants of enterprises, including 2 chief accountants of small and medium enterprises, and 4 chief accountants of large enterprises to find out the concerns of enterprises if they implement impairment accounting. The two chief accountants of small and medium-sized enterprises were very troubled because the operation was too complicated, if it had to be performed, it would be very difficult for the enterprise. The chief accountants of large enterprises have a higher degree of agreement but require detailed instructions.

Results of in-depth interviews with credit specialists of commercial banks

In order to get loans from banks or credit institutions, enterprises must prove their financial capacity to pay the loans when they are due and

guarantee the loans. Therefore, banks or credit institutions are also interested in fixed assets owned by enterprises to secure loans, documents proving ownership of fixed assets of enterprises such as certificates of land use rights, permits, car registration, etc. The objective of lenders when using accounting information must be factors to secure loans such as: Market price of collateral assets, current resources business, future profits, predicting future cash flows. Therefore, information about fixed assets provided by accountants is extremely useful information for lenders. The author conducted a survey in the form of interviews with 5 credit specialists of 2 joint stock commercial banks, namely Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV) and Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank). Face-to-face interviews were also conducted after the author submitted a brief introduction to accounting for fixed assets at fair value. During the meeting, before going into the main content of the questions, the author and the respondents also took a few minutes to exchange, the author answered the respondents' concerns about a number of relevant issues. related to accounting knowledge of valuing fixed assets at fair value. Credit experts all expressed their opinion that they strongly agree with the policy of implementing the Fair Value model, especially when there is a decline in asset value at the enterprise that the author introduced. There are 5 respondents Agree to carry out the accounting of asset value reduction according to Fair Value at the enterprise. The main reason for the yes answer is: The more prudent an enterprise is in its accounting operations, the lower the risk for the bank, because the financial statements provided by the enterprise are an important basis for the bank to appraise its financial ability. corporate governance and lending decisions. Commenting on the case of a loan to invest in tangible fixed assets mortgaged by that same asset, experts expressed the opinion that the implementation of asset value reduction accounting according to Fair Value will not only support banks in the appraisal process. Effective decision on investment projects when deciding to lend, but also helps businesses always find ways to exploit them in the best way, plan to use them for the future, improve the bank's ability to recover capital from the project. investment project. To the author's question about whether you have any concerns about the implementation of accounting for asset value reduction at enterprises, 4 people answered that the first step would be very difficult, so the Ministry of Finance needs to issue documents for instructions about impairment of assets.

Results of in-depth interviews with auditors and experts from the Ministry of Finance

The authors also interviewed 3 auditors who have audited at mining enterprises, they all believe that it is necessary to perform accounting for impairment of fixed assets according to Fair Value in Vietnam in general and in mining enterprises in particular. The reasons they consider necessary are: accounting for the impairment of fixed assets so that the items on the financial statements are reflected reasonably and faithfully; It is necessary to regulate the implementation of accounting for impairment of fixed assets so that the auditors have the opportunity to verify and express their opinions, for some enterprises, this may be very important information, greatly affecting the financial situation. production and business results of enterprises. However, most auditors are concerned about applicability because the fair value of fixed assets is highly dependent on the judgment and estimates of managers and financial statements makers with respect to uncertain events will happen in the future.

State management agencies are always interested in the use and benefits of fixed assets to evaluate the effectiveness of fixed asset investment, especially for enterprises with a relatively large proportion of fixed assets in the total value of their assets such as mining enterprises. Thus, the information provided by the fixed asset accountant helps state management agencies to make decisions and plan appropriate economic policies to promote the development of the economy. Therefore, the author also interviewed two experts of the Ministry of Finance, both of which said that it is necessary to carry out the assessment of asset value impairment in order to complete the legal framework and integrate with international practices on recognition and measurement. and report the targets on the financial statements. Regarding barriers to implementation at mineral mining enterprises in the North of Vietnam, for a complex standard with diverse content, the Ministry of Finance only provides general guidance, not specific and detailed instructions. for each specific case, so implementation will face many difficulties. Moreover, the degree of accountants of most businesses is not high, so when performing complex operations, it is difficult to avoid errors.

Thus, through survey results and in-depth interviews, it shows that fair value is a valuation basis that has obvious advantages over other valuation bases and is readily applied by most interested parties used in the accounting of fixed assets to contribute to making financial information more appropriate to the needs of information use in the context of a developed market economy. However, when the enterprise does not intend to sell, settle in the short term or in conditions where there is no efficient functioning market for assets and liabilities (such as in developing and developing economies), this model also presents some limitations. Therefore, according to the authors, the use of fair value in accounting for fixed assets in mining enterprises is a necessary step in the face of the rapid development of the market economy, the complexity of the investment systems, finance and the need to use financial information. However, in the short term, mining enterprises in Vietnam should not use fair value as a single valuation basis for all assets and liabilities, but should combine and maintain with the original cost model. Herein, fair value is encouraged to apply under conditions where an active market exists for an asset or liability that is of a comparable or substantially similar nature. These are cases where fair value can be reliably measured, ensuring a reasonable balance between the (reliable) and (relevant) claims of financial information.

5. Conclusion

In the current period of strong globalization, the Vietnamese economy in general and Vietnamese enterprises in particular will benefit through the application of IFRS. In order to have access to foreign capital, the preparation of financial statements under IFRS is an almost mandatory requirement. IFRS is an accounting standard system based on Fair Value, so the application of Fair Value in accounting is an inevitable trend in measurement but also a major barrier and challenge in the process of integration and implementation of IFRS in Vietnam. . To do this, on the one hand, the Ministry of Finance should soon issue a legal framework for the determination, presentation and accounting under Fair Value. In addition, the Ministry of Finance also needs to coordinate with auditing firms (especially Big Four companies), domestic and international professional associations, scientists who are lecturers of universities and colleges. University in propagating, advocating and guiding enterprises to measure accounting according to fair value. At the same time, Vietnamese enterprises themselves also need to boldly research and apply Fair Value, especially listed enterprises; Actively transparent financial information, approach to attract foreign capital; Show the method of determining Fair Value clearly in the notes to the financial statements.

References:

Adrian Manuel Nebot Sanahuja (2015), Valuation numerical valua historical cost for non financial fixed assets: How is financial information affected.

Bolivar, M.P.R. & Andres Navarro Galera, A.N. (2012), 'The Pole of Fair Value Accounting in Promoting Government Accountabilty', .A Journal of Accounting Finance and Business Studies, Vol 48, pp. 348-386.

Cairns, D., Massodi D., Taplin R. and Tarca A. (2011), "IFRS fair value measurement and accounting policy choice in the United Kingdom and Australia", The British Accounting Review, 43, pp. 1 - 21.

Christensen H., and Nikolaev V. (2013), "Who uses fair value accounting for non-financial assets after IFRS adoption?" University of Chicago Booth School of Business. Working paper, no. 09-12.

Doan Van Anh (2011), Completing intangible fixed asset accounting at Vietnam Posts and Telecommunications Group. Research topic at ministerial level, University of commerce.

Flaida Êmine Alves de Souza và Sirlei Lemes (2016), Comparability of Accounting Choices in Subsequent Mesurement of Fixed Assets, Intagible Asets, and Investment Property in South Companies.

Ijeoma, N.B (2014), 'The contribution of fair value accounting on corporate financial reporting in Nigeria', American Journal of Business, Economics and Management, Vol. 2, No. 1, pp. 1-8.

International Accounting Standard Board, Conceptual Framework for Financial Reporting, March 2018, downloaded from <https://shop.ifrs.org>.

International Accounting Standard Board, International Accounting Standard No.36 (IAS36) - Impairment of Assets, downloaded from <https://www.iasplus.com/en/news/2013/05/ias-36>.

International Accounting Standard Board, IFRS13 - Fair Value Measurement, downloaded from < https://www.iasplus.com/en/news/2013/12/aip-2011-2013>.

Jung, B., Pourjalali, H., Wen, E., Daniel, S.J. (2013), 'The association between firm characteristics and CFO's opinions on the fair value option for non-financial assets', Advances in Accounting, incorporating Advances in International Accounting, Vol 29, pp.255-266.

Koonce, L., K.K. Nelson, and C. Shakespeare. (2011). How do investors assess the relevance of fair value for financial instruments? The Accounting Review. Vol 86, 2075 - 2098.

Khuc Minh Hoang (2004), Applying international accounting standards Asset depreciation to build an accounting regime for depreciation provisions for fixed assets. Journal of Financial and Accounting Research, 5 (19), pp 24-25.

Kumarasiri1 J. & Fisher R. (2011), 'Perceptions of Fair-Value Accounting: Developing Country Evidence', International Journal of Auditing, Vol 15, 66-87.

Mary, E. B. (1994), 'Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks', The Accounting review, Vol. 69, No. 1, pp. 1-25.

Majella Percy (2014), Fair value accounting for long-term assets and audit fees: Evidence from Australian company.

Mai Ngoc Anh (2010). Combine valuation bases for initial measurement and recognition of Financial Report elements. Journal of Financial and Accounting Research, 12(89), pp 32-34.

Nicolae Bobitan, Diana Dumitrescu, Carmen Costuleanu (2011), The differences between revaluation anh assets impairment, West University of Timisoara.

Pham Thi Minh Hong, (2016), Research on the application of impairment of tangible fixed assets in Vietnam. PHD thesis, National University of Economics.

Pham Thu Huyen, (2020), Accounting for fixed assets in mineral exploitation enterprises in the Northern region. PHD thesis, Academy of Finance.

Tran Manh Dung (2011), Goodwill impairment: The case of Hong Kong, Economic doctoral thesis, Macquarie University, Sydney, Australia.

World Bank(2002), International accounting standards. National political publisher, Viet Nam.

DOES SCALE IMPROVE THE BANK'S FINANCIAL PERFORMANCE? A CASE OF VIETNAMESE PRIVATE COMMERCIAL BANKS

PhD. Le Ha Diem Chi* - PhD. Pham Hai Nam*

Abstract: ***The study uses quantile regression to examine the effect of scale on the financial performance of Vietnamese private commercial banks. For the whole sample of Vietnamese commercial banks, the research finds the effect of size on financial performance (ROA) statistically insignificant since the strong influence of four State-owned commercial banks' size and deposit. However, for the private commercial banks, the impact of size on ROA is harmful during the period 2011 - 2021 and 2011-2015; but a positive effect for the period 2016 - 2021. The results support the conclusion that private commercial banks did not receive better financial performance while trying to increase their size during the period 2011-2015 due to the wide instability of the banking system and show that financial performance improves significantly as the bank increases in size after successfully implementing the project on restructuring the system of credit institutions according to Decision 254/QD-TTg of the Prime Minister.***

• Keywords: *bank size, financial performance, private commercial bank, state-owned commercial bank, restructuring credit institutions, Vietnam.*

JEL codes: G21, G28, G32

Date of receipt: 05th October, 2023

Date of delivery revision: 10th October, 2023

Date of receipt revision: 06h November, 2023

Date of approval: 01st December, 2023

Tóm tắt: *Nghiên cứu sử dụng hồi quy lượng tử để kiểm tra tác động của quy mô đến hiệu quả tài chính của các ngân hàng thương mại tư nhân Việt Nam. Đối với toàn bộ mẫu ngân hàng thương mại Việt Nam, nghiên cứu nhận thấy tác động của quy mô đến hiệu quả tài chính (ROA) không có ý nghĩa thống kê do ảnh hưởng mạnh mẽ của quy mô và tiền gửi của 4 ngân hàng thương mại nhà nước. Tuy nhiên, đối với các ngân hàng thương mại tư nhân, tác động của quy mô đến ROA là có hại trong giai đoạn 2011 - 2021 và 2011-2015; nhưng lại có tác động tích cực cho giai đoạn 2016 - 2021. Kết quả hỗ trợ cho kết luận rằng các ngân hàng thương mại tư nhân đã không đạt được hiệu quả tài chính tốt hơn trong khi cố gắng tăng quy mô trong giai đoạn 2011-2015 do sự bất ổn rộng khắp của hệ thống ngân hàng và cho thấy rằng Hiệu quả tài chính cải thiện đáng kể khi ngân hàng tăng quy mô sau khi thực hiện thành công Đề án tái cơ cấu hệ thống các tổ chức tín dụng theo Quyết định 254/QD-TTg của Thủ tướng Chính phủ.*

• Từ khóa: *quy mô ngân hàng, hiệu quả tài chính, ngân hàng thương mại tư nhân, ngân hàng thương mại nhà nước, tái cơ cấu các tổ chức tín dụng, Việt Nam.*

1. Introduction

From theory to empirical research, increased scale is one of the main factors for banks to promote their financial potential and competitiveness and improve financial efficiency. Economies of scale and scope state that large banks have a cost advantage over small banks, earn more profits, and an increase in bank scale significantly improves their profitability (Berger et al., 1987; Berger and Humphrey, 1997; Fu and Heffernan, 2008). However, small banks can rely on small-scale deposits with a broad scope; economies of scope can completely offset the disadvantages due to the absence of economies of scale; as a result, financial performance is also improved (Miller and Noulas, 1997). Economies of scale and scope in empirical research imply the effect of scale on financial performance. Bank size impacts positively on financial performance, showing that an increase in size leads to an increase in bank profitability (Ahamed, 2017; Isik et al., 2018). The economy of scale explains this result. The negative effect of size on financial performance indicates an increase in size but does not improve bank profitability and implies that small banks are more efficient than

** Ho Chi Minh City University of Banking; email: chilhd@hub.edu.vn - namph@hub.edu.vn*

large banks, implying the offsetting of profitability by economies of scope. The May 2022 report of the State Bank of Vietnam (SBV) shows that the total assets of

State-owned commercial banks are VND 6,948,081 billion. The total assets of private commercial banks are VND 7,354,319 billion. The average growth rate of total assets of state-owned commercial banks from December 2021 to May 2022 is 1.54%/month, and that of private commercial banks is 0.57%/month (SBV, 2022). The increase in the scale of Vietnam's commercial banking system was encouraged by the Government from the project of "restructuring credit institutions for the period 2011 - 2015" under Decision 154/QD-TTg dated March 1, 2012 (Government, 2012), and continued to be mentioned in the project "Restructuring the system of credit institutions associated with bad debt settlement in the period of 2021 - 2025" according to Decision No. 689/QD-TTg (Government, 2022). Following the encouragement of the Government, commercial banks have continuously increased their total assets from 2011 to the present. Does increasing total assets improve the financial performance of Vietnamese commercial banks? This question is the goal of the article to find out and answer what is considered from the total assets, financial performance, and quantile regression results on the relationship between size and financial performance of Vietnamese private commercial banks in the period 2011-2021.

2. Theory and empirical research

Khemani and Shapiro (1993) argued that economies of scale refer to the phenomenon where the average costs per unit of output decrease with the increase in the scale or magnitude of the output produced by a firm. Similarly, the opposite phenomenon, diseconomies of scale, occurs when the average unit costs of production increase beyond a specific output level. A firm can achieve economies of scale if it produces combined products/services and lowers costs because fixed costs are spread over a more significant number of goods. So, economies of scale occur when the per-unit cost of production falls as the number of units produced increases. Furthermore, the firm can not achieve diseconomies of scale when the cost of combining products/services is higher (Baumol et al., 1982). Here, economies of scale imply larger businesses' cost savings and competitive advantages over smaller ones. In banking, scale economies exist when the cost per dollar of loans (or assets) declines as the number of loans (or assets) increases. An efficient bank operates at the lowest cost of assets or loans per dollar. The presence of economies of the scale indicates that large banks have a cost advantage over small banks and can earn more profitability.

Increasing bank size can increase profitability; however, as the size increases more than necessary, the large banks maybe save fewer costs and face inefficiencies (Berger et al., 1987, Berger and Humphrey, 1997; Fu and Heffernan, 2008). This conclusion implies an inverse U between size and financial performance, reinforced by empirical studies in various banking markets worldwide. Inverse U relationship conducts that as the size of banks increases, profitability first increases and then decreases. (Athanasoglou et al., 2008; Chronopoulos et al., 2015; Isik et al., 2018; Yao et al., 2018; Le, 2020; Neves et al., 2020; Diem Chi et al., 2021). In addition, some other studies show that large banks are more likely to earn profitability than small banks, and the impact of size on bank profitability is positive (Duho, 2009; Shehzad, 2013, Chronopoulos et al., 2015; Isik et al., 2018). There is also research that shows the effect of size on profitability is negative, offering diseconomies of scale in terms of the profitability and bank size such as Saona (2011) in US Banking Industry, Sufian and Chong (2008) in Philippines banking sector. Thus, empirical studies show that economies of scale are not always achieved; it depends on other financial factors of the bank and characteristics of the economy. Alternatively, Peterson's study (2017) studies the factors affecting the profitability of listed and unlisted banks on the African stock market. The results indicate bank size has a negative relationship with listed banks but is insignificant for unlisted banks.

Clark (1988) analyzes there are two economies of scale in the banking business: the first is the spread of fixed costs. Fixed costs such as branch office, staff salaries, mobile or computer and telecommunications equipment, website, etc., are distributed across different products and services; this is better than having separate infrastructure for each product. The fixed cost of investment for each

service is much larger than the shared fixed cost of many services. The second is the everyday use of customer information. For example, customer information collected from a deposit service can be used when that customer wants to borrow. The cost of reusing information is often less expensive than collecting information independently. Reusing information can help a bank reduce the incremental costs of expanding additional services. In addition, when banking services are combined, the prices which customers pay to the bank can be reduced because the bank saves on transportation costs, inter-account transfers, etc. (Berger et al., 1987). The study by Miller and Noulas (1997) on US banks indicates that medium-sized banks are the most profitable, followed by small and large banks. This result is argued on the efficiency of the interbank market, small and medium banks thanks to the advantages of retail and widespread deposit, economies of scope, these banks achieve improved financial performance without necessarily having the cost advantage as large banks. Economies of scale then fully offset the losses due to the absence of economies of scale. On the contrary, Vong and Chan (2009) concluded that banks with an extensive deposit network in Macao did not achieve the same high profitability as that banks with a narrower deposit network.

For the Vietnamese banking market, the impact of size on financial and banking performance also has two positive and negative trends. Research by Le et al. (2017) on the factors affecting the profitability of Vietnamese commercial banks in the period 2007 - 2013 results showing a negative effect between the size and profitability of banks which implies that small banks operate more efficiently and diseconomies of scale in large banks (Thi and Phan., 2020). On the other hand, Dang et al. (2019) and My (2020) show that bank size positively influences financial performance, and Vietnamese banks achieve economies of scale. In addition, Thi and Phan (2020) found evidence of a non-linear relationship between bank size and profitability; they argued that bank size would improve bank profitability until the optimal threshold is reached, then reduce profitability. Diem Chi et al. (2021), based on data collected from 31 Vietnamese commercial banks using the Bayesian method, also found an inverse U relationship between total assets and the performance of Vietnamese commercial banks in the period 2007-2017.

Research model

The research model uses the total variable assets representing bank size (SIZE) and considers the nonlinear relationship between the variable size squared (SIZSQ) and bank financial performance is represented by profit after taxes on total assets (ROA). For the control variable in the model, the study tries to use control variables that can represent most aspects of the bank's activities. Specifically, for credit activities, the study uses the variables of credit size (LTA), loss loan provision (LLP), and bad debt (NPL); For deposit activities, the research uses the variables of deposit growth (DepG), financial structure (FiS), deposit interest (FuC); For business activities, cost efficiency (EFF) and total operating costs (OPC) are used in the model; Funding gap (LGAP) is used to control liquidity risk; In addition, the growth rate of total assets (TAG) and diversification of income (DivI) are also used to control the model. The study uses economic growth and inflation variables to control macro factors and money supply growth (M2G) variables to represent the State's monetary policy.

$$ROA_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 SIZSQ_{it} + \beta_3 LTA_{it} + \beta_4 LLP_{it} + \beta_5 NPL_{it} + \beta_6 DepG_{it} + \beta_7 FuC_{it} + \beta_8 FiS_{it} + \beta_9 EFF_{it} + \beta_{10} OPC_{it} + \beta_{11} LGAP_{it} + \beta_{12} DivI_{it} + \beta_{13} TAG_{it} + \beta_{14} M2G_t + \beta_{15} INF_t + \beta_{16} GDP_t + e_{it}$$

Table 1. Variables in research model

Sign	Variable name	Measure	Sources
Dependent Variable			
ROA	Financial Performance	*Earning after tax/Total Average Asset*	Bank financial report
Main Variable			
BSIZE	Bank Size	Log(Total Asset)	Bank financial report
SIZSQ	Size Square	$(\text{Log(Total Asset)})^2$	Bank financial report
Bank Specific Control Variables			
LTA	Loan Scale	*Total Loan/Total Asset*	Bank financial report
LLP	Loss Loan Provision	*Loan Loss Provisions/ Total Loan*	Bank financial report
NPL	Non-Performing Loan	*(Group 3 + Group 4 + Group 5)/Total Loan*	Bank financial report
DepG	Deposit Growth Rate	$(Deposit_t - Deposit_{t-1})/ Deposit_{t-1}$	Bank financial report
FuC	Funding Cost	*Interest payable/Deposit*	Bank financial report

Sign	Variable name	Measure	Sources
FiS	Financial Structure	$Deposit/Equity$	Bank financial report
EFF	Operational Efficiency	Total operating expenses/ *Gross Income*	Bank financial report
OPC	Operational cost	*Total operating expenses/ Total asset*	Bank financial report
LGAP	Liquidity gap	$Deposit - Loan/Total\ Asset$	Bank financial report
DivI	Diversification Income	$\sum_{j=1}^{n} \frac{Income_{it}^{\ 2}}{Income_{nt}}$	Bank financial report
TAG	Asset Growth Rate	$(Total\ Asset_t - Total\ Asset_{t-1})/Total\ Asset_{t-}1$	Bank financial report
Money policy Variable			
M2G	Money supply		World bank

3. Methodology

The effect of size on profitability is from various approaches such as OLS, FEM, REM, FGLS, and GMM. So my research has a bit gap. This study use the quantile regression method and then compare it with the mean regression method with expect to achieve reliable results about the impact of bank size on the financial performance of Vietnamese commercial banks. The quantile regression was first introduced by Koenker and Bassett in 1978. Instead of estimating the parameters of mean regression by OLS method, Koenker and Bassett (1978) proposed estimating the regression parameters on each quantile of dependent variables. With the OLS method, we only obtain a regression function expressing the conditional mean value of dependent variable Y according to independent variable X. Meanwhile; the quantile shows many regression functions according to each quantile of dependent variable Y. On the other hand, instead of determining the margin effects of independent variables on the mean value of the dependent variable, the quantile regression will help to determine the impact of independent variables on each quantile of the dependent variable.

Compared with OLS method, the quantile regression has some outstanding advantages. With five outstanding advantages, the conditions such as the residual following normal distribution, constant variance, and no autocorrelation in the OLS regression are no longer required in the quantile regression. In addition, the bootstrap technique for parametric tests of quantile regression, this method is very suitable for a small sample.

4. Research results and discussion

Table 2. OLS and Quantile regression results for Vietnamese commercial banks

	OLS	Q10	Q25	Q50	Q75	Q90
BSIZE	-0.0054	0.00779	0.00502	0.0025	0.00459	0.0312
	[-0.39]	[0.47]	[0.26]	[0.15]	[0.23]	[0.87]
SIZSQ	0.0008	-0.00013	0.000113	0.000363	0.000186	-0.00146
	[0.91]	[-0.13]	[0.09]	[0.36]	[0.15]	[-0.67]
LTA	0.00279	-0.00309	-0.00452	-0.00231	0.00695	0.0131*
	[0.78]	[-0.77]	[-1.13]	[-0.58]	[1.35]	[1.71]
LLP	-0.151***	-0.139*	-0.2	-0.188**	-0.147**	-0.144
	[-2.84]	[-1.92]	[-1.52]	[-2.59]	[-2.05]	[-0.95]
NPL	-0.0609***	-0.0411*	-0.0766***	-0.0594*	-0.0764*	-0.127***
	[-3.01]	[-1.65]	[-2.87]	[-1.93]	[-1.79]	[-2.94]
DepG	0.00293**	0.00262	0.00189	0.00445	0.00553*	0.0102**
	[2.02]	[0.96]	[1.35]	[1.60]	[1.85]	[2.51]
OPC	0.419***	0.331**	0.278*	0.397***	0.510***	0.622***
	[8.75]	[2.20]	[1.86]	[5.33]	[6.02]	[5.02]
FuC	-0.00499	-0.0267	-0.00738	-0.00944	0.0122	0.0511***
	[-0.67]	[-1.14]	[-0.45]	[-1.00]	[1.04]	[2.69]
FiS	-0.00105***	-0.0006***	-0.0007***	-0.0010***	-0.0011***	-0.0010***
	[-10.50]	[-2.89]	[-5.78]	[-6.53]	[-9.76]	[-5.41]
EFF	-0.0333***	-0.0281**	-0.0199	-0.0306***	-0.0356***	-0.0496***
	[-9.33]	[-2.39]	[-1.63]	[-5.32]	[-10.12]	[-8.65]
LGAP	-0.00743**	-0.0125*	-0.0103**	-0.0109**	-0.00233	-0.00114
	[-2.04]	[-1.90]	[-2.28]	[-2.26]	[-0.59]	[-0.23]
DivI	-0.00506*	-0.00278	-0.0057	-0.0076***	-0.0078*	-0.0167***
	[-1.95]	[-0.63]	[-1.16]	[-2.60]	[-1.93]	[-3.48]
TAGr	0.00743***	0.00265	0.00501*	0.00587**	0.00801***	0.00463
	[3.89]	[0.72]	[1.78]	[2.22]	[3.47]	[0.93]
M2G	-0.0206***	-0.0287***	-0.0122	-0.0176	-0.0298*	-0.0101
	[-2.63]	[-3.00]	[-1.31]	[-1.37]	[-1.95]	[-0.56]
GDP	-0.0446***	-0.0598***	-0.0479***	-0.0218	-0.0533*	-0.0859***
	[-2.59]	[-4.21]	[-3.05]	[-0.87]	[-1.93]	[-3.08]
INF	-0.00248	0.000953	-0.00231	-0.00672	-0.00555	0.00167
	[-0.54]	[0.15]	[-0.50]	[-1.17]	[-0.72]	[0.20]
_cons	0.02	-0.0279	-0.02	-0.0117	-0.0193	-0.123
	[0.35]	[-0.41]	[-0.26]	[-0.17]	[-0.24]	[-0.81]
N	316	316	316	316	316	316
R^2/ Pseudo R^2	0.653			0.615		

*Note: t statistics in brackets. * p<0.1, ** p<0.05, *** p<0.01*

Although the sample of Vietnamese commercial banks has many differences as above, the study temporarily ignores these characteristics to assess the impact of size on ROA. Table 4 presents the results of assessing the effect of size on the financial performance of Vietnamese commercial banks by OLS regression and quantile regression which includes the 0.10 percentile; 0.25; 0.50; 0.75 and percentile (Q10, Q25, Q50, Q75, Q90). The study finds statistical insignificance of the size variable on all percentiles of ROA and OLS estimates.

Both OLS and the quantile estimates found statistical insignificance in the effect of size on banks' financial performance. This is probably because the sample significantly diverges the total asset size between state-owned and private banks. The relationship between size and ROA is opposite in the two periods (before 2015 and after 2015) that the study ignored. What will size impact the financial performance of Vietnamese commercial banks if the study removes these two differences? To answer the above question, the study divides the sample into two groups: State-owned and private banks. The group of State-owned banks includes four banks operating in the Vietnamese banking industry with the primary goal of being one of the fastest transmission channels for the Government's monetary policy. In addition, with a scale many times larger than that of private commercial banks, the theory of "Too big to fail" is reflected in the activities of these four State-owned commercial banks in Vietnam's banking industry. The increase in the scale of state-owned commercial banks does not take profit as the top priority, but this is like creating the "leaders" to orient the development of Vietnam's commercial banking system. Government orientation for State-owned banks in the project on restructuring the credit institution system state, "Enhance the leading role of state-owned commercial banks; ensure that state-owned commercial banks are the flagship of the system of credit institutions with large scales, safe and efficient operation, well managed, and capable of competing at home and internationally. Establish 1 - 2 state-owned commercial banks in the same leagues with regional banks in terms of scale, management, technologies, and competitiveness by 2015." (Government, 2012). Therefore, It is not necessary to test the effect size on State-owned commercial banks' financial performance. The study focuses on the impact size on financial performance in the group of private commercial banks. For private commercial banks, the OLS regression results in Table 5 show that size harms the private commercial bank's financial performance (ROA) in the period 2011 to 2021. The same results are found in many previous studies on the Vietnamese banking sector as Batten and Vo (2019), Dao and Nguyen (2020). The study continues to evaluate the impact of size on financial performance on each percentile of ROA to have more vital conclusions for the OLS estimated results. The regression results for the 0.1, 0.25, 0.5, 0.75, and 0.9 quantiles of ROA presented in Table 5 show a negative effect of size on ROA at all quantiles. This is reinforced evidence to conclude that from 2011 to 2021, Vietnamese private commercial banks improved insignificant raise the scale.

Table 3. Results OLS and Quantile regression for private commercial bank sector

ROA	OLS	Q10	Q25	Q50	Q75	Q90
BSIZE	**-0.0616*** **	**-0.0541** **	**-0.0316***	**-0.0563** **	**-0.0527** **	**-0.0490***
	[-2.74]	**[-2.02]**	**[-1.66]**	**[-2.09]**	**[-2.42]**	**[-1.66]**
SIZSQ	0.0043***	0.00367**	0.00233**	0.00388**	0.00374***	0.00348*
	[3.01]	[2.18]	[1.98]	[2.31]	[2.69]	[1.85]
LTA	-0.00383	-0.00819**	-0.00800*	-0.0101**	-0.00138	-0.00362
	[-1.00]	[-2.22]	[-1.95]	[-2.19]	[-0.22]	[-0.54]
LLP	0.0291	0.144	0.0302	-0.0795	0.0733	0.188*
	[0.45]	[1.19]	[0.27]	[-1.13]	[0.60]	[1.80]
NPL	-0.0879***	-0.102***	-0.113***	-0.0944**	-0.0588	-0.0808***
	[-4.26]	[-2.73]	[-4.29]	[-2.35]	[-1.61]	[-2.82]
DepG	0.00327**	0.00375	0.00234	0.00215	0.00455	0.00602*
	[2.33]	[1.43]	[0.77]	[1.18]	[1.54]	[1.90]
OPC	0.775***	0.680***	0.752***	0.880***	0.795***	1.113***
	[8.87]	[4.49]	[6.77]	[5.26]	[4.93]	[6.97]
FuC	-0.0420***	-0.0615***	-0.0429**	-0.0560***	-0.0378**	-0.0524***
	[-4.28]	[-3.03]	[-2.36]	[-3.38]	[-2.26]	[-3.51]
FiS	-0.00085***	-0.00056***	-0.00064***	-0.00073***	-0.00092***	-0.00091***
	[-8.16]	[-3.52]	[-4.06]	[-5.46]	[-9.53]	[-6.14]
EFF	-0.0693***	-0.0576***	-0.0643***	-0.0761***	-0.0732***	-0.100***
	[-9.39]	[-4.79]	[-5.62]	[-4.77]	[-4.73]	[-9.34]
LGAP	-0.0122***	-0.0171***	-0.0150***	-0.0131***	-0.0137***	-0.0119**
	[-3.38]	[-2.77]	[-3.93]	[-2.74]	[-2.83]	[-2.23]
DivI	-0.00063	0.00311	-0.003	-0.000472	-0.00369	-0.005
	[-0.25]	[0.59]	[-0.67]	[-0.16]	[-0.90]	[-0.95]
TAGr	0.00799***	0.00359	0.00853**	0.00791***	0.00976***	0.0109***
	[4.35]	[1.37]	[2.57]	[2.91]	[3.38]	[2.85]
M2G	-0.0272***	-0.0330***	-0.0157	-0.0261**	-0.0322**	-0.0284**
	[-3.30]	[-3.46]	[-1.10]	[-2.37]	[-2.34]	[-2.32]
GDP	-0.0406**	-0.0322*	-0.0389*	-0.0331*	-0.0341	-0.036
	[-2.30]	[-1.71]	[-1.83]	[-1.68]	[-1.28]	[-1.23]
INF	-0.00425	-0.0114**	-0.00447	-0.00411	-0.00725	-0.01
	[-0.91]	[-2.48]	[-0.58]	[-0.87]	[-1.15]	[-1.31]
_cons	0.249***	0.222**	0.133*	0.236**	0.215**	0.206*
	[2.80]	[2.07]	[1.69]	[2.18]	[2.53]	[1.78]
Number of obs	272	272	272	272	272	272
R^2/Pseudo R^2	0.733	0.679				

*Note: t statistics in brackets. * p<0.1, ** p<0.05, *** p<0.01*

The consequences of a The consequences of a period of "bubble" development of the real estate, securities, and bank credit in the years 2005-2007, have accumulated difficulties for commercial banks, manifested as high potential credit risk, lousy debt related to real estate, increased rapidlyThe situation of cross-ownership, cross-

investment, establishing a "backyard" company, and lending beyond capital capacity in both volume and term structure has reached an alarming level. The banking industry's profit dropped sharply during this period. The Government had to intervene with a series of solutions to cool down typical bank credit, such as resolving bad debts, interbank debts, restructuring capital sources.

Before 2011, the banking sector's asset growth was 3-4 times higher than the GDP growth rate, so the banks recruited staff, racing to open more branches and build infrastructure. Therefore, when the Government intervenes to cool down the credit market, these costs burden the bank at a later stage. The significant increase in the bank's operating expenses added to the decline in the bank's profitability.

Vietnam's economy at this time was challenging, and one of the significant reasons firms' performance was poor, leading to a decline in aggregate credit demand and the debt repayment ability of enterprises. These are the primary key to high lousy debt and low banks' profitability.

From 2016 to 2021, The effect of size on financial performance is positive in OLS regression and all quantiles of ROA. The results show that the increase in total asset size has created positive banks' financial performance. The rise in bank profits has partly reflected the success of the project to restructure the banking system. After five years of implementing the project on restructuring credit institutions, since 2016, the banking system has shown signs of improvement in profitability and has grown continuously until 2021. Although in 2020 and 2021, due to the impact of the Covid pandemic, Vietnam's economic growth reached a record low level in the past 15 years (2.9% in 2020 and 2.59% in 2021), Bank profits still grew well, and total asset scale was constantly expanding.

Table 4. Quantile regression results for two study periods

ROA	2011 - 2015					
	OLS	Q10	Q25	Q50	Q75	Q90
BSIZE	-0.176***	-0.070	-0.111*	-0.160**	-0.235***	-0.139*
	[-3.22]	[-1.11]	[-1.96]	[-2.45]	[-2.72]	[-1.80]
SIZSQ	0.0116***	0.00451	0.00727*	0.0106**	0.0154***	0.00921*
	[3.31]	[1.09]	[1.93]	[2.52]	[2.80]	[1.86]
LTA	0.00415	-0.0179	-0.0026	0.00937	0.00674	0.00904
	[0.55]	[-1.34]	[-0.21]	[0.73]	[0.49]	[0.79]
LLP	0.254**	0.0393	0.276*	0.258	0.207	0.472***
	[2.32]	[0.18]	[1.89]	[1.64]	[1.14]	[2.65]
NPL	-0.103***	-0.166***	-0.117**	-0.141**	-0.0975	-0.117
	[-3.06]	[-3.02]	[-2.38]	[-2.23]	[-1.22]	[-1.53]
DepG	0.00355*	0.00494	0.00294	0.00392	0.00424	0.00416
	[1.91]	[1.64]	[0.80]	[1.04]	[1.43]	[0.97]
OPC	0.656***	0.790***	0.701***	0.551*	0.635**	0.670**
	[4.02]	[3.05]	[2.97]	[1.80]	[2.13]	[2.14]
FuC	-0.0377**	-0.0617**	-0.0531*	-0.0274	-0.0294	-0.0375
	[-2.36]	[-2.08]	[-1.66]	[-1.19]	[-1.17]	[-0.97]
FiS	-0.0011***	-0.0004	-0.0006	-0.0011**	-0.0012***	-0.0012***
	[-3.82]	[-0.78]	[-1.03]	[-2.36]	[-3.36]	[-2.97]
EFF	-0.0632***	-0.0613***	-0.0470**	-0.0554*	-0.0678**	-0.0783**
	[-4.18]	[-2.97]	[-2.06]	[-1.74]	[-2.35]	[-2.24]
LGAP	-0.00453	-0.0148	-0.0142	0.00202	-0.00302	-0.00793
	[-0.60]	[-1.40]	[-1.20]	[0.16]	[-0.27]	[-0.55]
DivI	0.00835**	0.00623	0.00519	0.00525	0.0087	0.00697
	[2.10]	[0.90]	[0.82]	[0.69]	[1.23]	[0.70]
TAGr	0.00889***	-0.0034	0.0042	0.0091***	0.0130***	0.0158***
	[3.65]	[-0.71]	[0.97]	[2.77]	[4.64]	[3.71]
M2G	-0.0442	-0.0362	-0.0273	-0.0404	-0.0105	-0.0557
	[-1.31]	[-0.82]	[-0.53]	[-0.80]	[-0.19]	[-0.89]
GDP	-0.155	-0.128	-0.0578	-0.112	0.133	-0.261
	[-0.53]	[-0.31]	[-0.14]	[-0.26]	[0.26]	[-0.45]
INF	-0.00369	-0.0115	-0.00737	-0.00418	-0.00776	-0.00117
	[-0.50]	[-0.89]	[-0.82]	[-0.42]	[-1.06]	[-0.13]
_cons	0.689***	0.304	0.441**	0.626**	0.900**	0.558*
	[3.24]	[1.25]	[2.02]	[2.35]	[2.60]	[1.91]
N	123	123	123	123	123	123
Pseudo R2	58.52	56.14	56.14	56.14	56.14	56.14

ROA	2016 - 2021					
	OLS	Q10	Q25	Q50	Q75	Q90
BSIZE	0.0660**	0.0663**	0.0463*	0.0904**	0.103***	0.0613*
	[2.33]	[2.08]	[1.91]	[2.41]	[2.97]	[1.91]
SIZSQ	-0.00372**	-0.00374*	-0.00261*	-0.0053**	-0.0059***	-0.00350*
	[-2.11]	[-1.88]	[-1.73]	[-2.26]	[-2.75]	[-1.75]
LTA	-0.00847**	-0.00495	-0.0194***	-0.0151**	-0.0147	-0.0121*
	[-2.00]	[-0.62]	[-3.25]	[-2.26]	[-1.46]	[-1.76]
LLP	-0.213***	-0.00194	-0.0764	-0.145	-0.311***	-0.201
	[-2.80]	[-0.01]	[-0.97]	[-1.25]	[-3.14]	[-1.37]
NPL	-0.0819***	-0.0503	-0.107**	-0.08	-0.0335	-0.0431
	[-3.35]	[-1.49]	[-2.01]	[-1.47]	[-0.59]	[-0.98]
DepG	0.00326	0.00755	0.00553	0.00317	0.00169	0.00537
	[1.04]	[1.59]	[1.26]	[1.17]	[0.61]	[1.12]
OPC	0.835***	0.506*	1.004***	1.051***	1.448***	1.612***
	[7.97]	[1.94]	[7.88]	[4.55]	[3.50]	[5.15]
FuC	-0.132***	-0.11	-0.215***	-0.193***	-0.230***	-0.229***
	[-4.64]	[-1.30]	[-3.78]	[-2.65]	[-3.01]	[-4.01]
FiS	-0.0005***	-0.0003	-0.0003*	-0.0004**	-0.0004**	-0.000461**
	[-4.30]	[-1.57]	[-1.76]	[-2.10]	[-2.15]	[-2.27]

ROA	2016 - 2021					
	OLS	Q10	Q25	Q50	Q75	Q90
EFF	-0.0719***	-0.0425*	-0.0841***	-0.0886***	-0.124***	-0.139***
	[-8.35]	[-1.89]	[-7.26]	[-4.60]	[-3.53]	[-5.20]
LGAP	-0.0234***	-0.0222**	-0.0333***	-0.0273***	-0.0233**	-0.0234***
	[-5.18]	[-2.19]	[-4.96]	[-3.07]	[-2.01]	[-3.50]
DivI	-0.00765**	-0.00811	-0.000445	-0.00378	0.00133	-0.00301
	[-2.32]	[-1.22]	[-0.08]	[-0.52]	[0.18]	[-0.37]
TAGr	0.0089**	0.00469	0.00183	0.00477	0.0097***	0.00809*
	[2.52]	[0.87]	[0.40]	[1.20]	[2.68]	[1.72]
M2G	-0.02	-0.0205	-0.0344*	-0.0375**	-0.0196	-0.00579
	[-1.15]	[-0.80]	[-1.87]	[-2.22]	[-0.57]	[-0.31]
GDP	-0.0336*	-0.0234	-0.0396**	-0.0455***	-0.0355	-0.0446
	[-1.86]	[-1.26]	[-2.11]	[-2.93]	[-1.04]	[-1.36]
INF	-0.00206	-0.00644	0.00293	0.0173	-0.00484	-0.00156
	[-0.18]	[-0.56]	[0.27]	[1.38]	[-0.26]	[-0.13]
_cons	-0.247**	-0.260**	-0.156	-0.335**	-0.391***	-0.217
	[-2.17]	[-2.06]	[-1.63]	[-2.22]	[-2.87]	[-1.66]
N	149	149	149	149	149	149
Pseudo R2	87.50	55.28	55.28	55.28	55.28	55.28

*Note: t statistics in brackets. * p<0.1, ** p<0.05, *** p<0.01*

5. Conclusion

The Vietnamese banking market in the period 2011 - 2021 has essential characteristics such as:

(1) 4 State-owned commercial banks are many times larger than private commercial banks; (2) The Government issued a project to restructure the credit institution system from 2011 to 2015, due to the uncertainty of the system at that time. (3) After restructuring, the banking system showed a significant increase in profitability. Using quantile and OLS regression to examine how scale improves financial performance in Vietnam's private banking industry in 2011 - 2021. The research results:

If the whole Vietnamese banking market considers, the study finds a statistically insignificant impact of bank size on financial performance, as represented by ROA. This result may be due to the big gap between State-owned and private banks.

For private commercial banks in the 2011 - 2021 period, the general assessment is the harmful effect of size on financial performance. This result seems inconsistent with the fact that banks achieve good financial performance while increasing in size.

During the 2011- 2015 implementation of the project on restructuring credit institutions, Vietnamese private commercial banks improved insignificant profitability while trying to raise the scale due to the difficulties of the economy and the instability of the Vietnamese financial and banking market. However, in the 2016-2021 period, after the restructuring of the banking system, the increase in scale has positively impacted banks' financial performance. The results imply that the private commercial bank's financial performance improves if the bank increases in size.

References:

Ahamed, M. M. (2017), "Asset quality, non-interest income, and bank profitability: Evidence from Indian banks", Economic Modelling, Vol.63, pp.1-14.

Athanasoglou, P. P., Brissimis, S. N., and Delis, M. D. (2008), "Bank-specific, industry specific and macroeconomic determinants of bank profitability", Journal of International Financial Markets, Institutions and Money, Vol.18 No.2, pp.121-136.

Baumol, W. J., Panzar, J. C., and Willig, R. D. (1982), "Contestable Markets and the Theory of Industry Structure." New York: Harcourt Brace Jovanovich, Inc.

Berger, A. N., Hanweck, G. A., and Humphrey, D. B. (1987), "Competitive Viability in Banking: Scale, Scope, and Product Mix Economies", Journal of Monetary Economics, Vol.20, pp.501-520.

Berger, A. N., and Humphrey, D. B. (1997), "Efficiency of Financial Institutions: International Survey and Directions for Future Research", European Journal of Operational Research, Vol.98, pp.175-212.

Chronopoulos, D. K., Liu, H., McMillan, F. J., and Wilson, J. O. (2015), "The dynamics of US bank profitability", The European Journal of Finance, Vol.21 No.5, pp.426-443.

Clark, J. A. (1988), "Economies of Scale and Scope at Depository Financial Institutions: A Review of the Literature", Economic Review, FRB of Kansas City, pp.16-33.

Dang, H. N., Vu, V. T. T., Ngo, X. T., and Hoang, H. T. V. (2019), "Study the impact of growth, firm size, capital structure, and profitability on enterprise value: Evidence of enterprises in Vietnam", Journal of Corporate Accounting & Finance, Vol.30 No.1, pp.144-160.

Diem Chi, L. H., Dung, H. V., and Chau, N. T. M. (2021), "The Threshold for the Efficient Scale of Vietnamese Commercial Banks: A Study Based on Bayesian Model", In Data Science for Financial Econometrics (pp. 531-542). Springer, Cham.

Duho, K. C. T., Onumah, J. M., and Owodo, R. A. (2019), "Bank diversification and performance in an emerging market." International Journal of Managerial Finance.

Fu, X., & Heffernan, S. A. (2008), "Economies of Scale and Scope in China's Banking Sector", Applied Financial Economics, Vol.18, pp.345-356.

Government (2012), "Decision No. 254/QD-TTg dated March 1, 2012, approving the project 'Restructuring the system of credit institutions for the period 2011 - 2015'".

Government (2022), "Decision 689/QD-TTg dated June 8, 2022, approving the Project 'Restructuring the system of credit institutions associated with bad debt settlement in the period of 2021 - 2025'".

Isik, O., Kosaroglu, Ş. M., and Demirci, A. (2018), "The impact of size and growth decisions on Turkish banks' profitability", International Journal of Economics and Financial Issues, Vol.8 No.1, pp.21-29.

Khemani, R. S., and Shapiro, D. M. (1993), "An empirical analysis of Canadian merger policy", The Journal of Industrial Economics, pp.161-177.

Le, T. T., Pham, X. T., and Le, N. H. (2017), "Determinants of Bank Profitability: The case of commercial banks listed on the Vietnam's stock exchange", Journal of Business Sciences, Vol.1 No.2, pp.1-12.

Le, T. D. (2020), "The interrelationship among bank profitability, bank stability, and loan growth: Evidence from Vietnam", Cogent Business & Management, Vol.7 No.1, pp.1840488.

Miller, S., and Noulas, A. (1997), "Portfolio Mix and Large-bank Profitability in the USA", Applied Economics, Vol.29, pp.505-12.

My, S. T. (2020), "Credit risk and bank stability of Vietnam commercial bank: a BK approach", International Journal of Analysis and Applications, Vol.18 No.6, pp.1066-1082.

Neves, M. E., Proença, C., and Dias, A. (2020), "Bank profitability and efficiency in Portugal and Spain: A non-linearity approach", Journal of Risk and Financial Management, Vol.13 No.11, pp.284.

Peterson, K. O. (2017), "Bank Profitability and Capital Regulation: Evidence from Listed and Non-Listed Banks in Africa", Journal of African Business, Vol.18 No.2, pp.143-168

Saona Hoffmann, P. R. (2011), "Determinants of the Profitability of the US Banking Industry"

Shehzad, C. T., De Haan, J., and Scholtens, B. (2013), "The relationship between size, growth and profitability of commercial banks", Applied Economics, Vol.45 No.13, pp.1751-1765.

Sufian, F., and Chong, R. R. (2008), "Determinants of bank profitability in a developing economy: empirical evidence from the Philippines", Asian Academy of Management Journal of Accounting & Finance, Vol.4 No.2.

Thi, T. T. D., & Phan, H. T. T. (2020), "Bank size, credit risk and bank profitability in Vietnam", Malaysian Journal of Economic Studies, Vol.57 No.2, pp.233-251.

Vong, P. I., and Chan, H. S. (2009), "Determinants of bank profitability in Macao", Macau Monetary Research Bulletin, Vol.12 No.6, pp.93-113.

Yao, H., Haris, M., and Tariq, G. (2018), "Profitability determinants of financial institutions: evidence from banks in Pakistan", International Journal of Financial Studies, Vol.6 No.2, pp.53.

DIGITAL CAPACITY OF HUMAN RESOURCES AT COMMERCIAL BANKS: A STUDY FROM COMMERCIAL BANKS IN HANOI, VIETNAM

Dang Thi Thuy Duyen* - Giang Thi Thu Huyen* - Dang Thi Huyen Anh*

Abstract: ***Governments and businesses pay great attention to the digital capabilities of human resources in general and at commercial banks in particular. Currently, commercial banks are also having to transform digitally to meet development needs, especially in the 4.0 revolution and after the Covid-19 pandemic. Commercial banks in Vietnam are both actively transforming digitally and recovering after Covid-19. One of the factors determining the bank's digital transformation is the quality of human resources. Human resources in commercial banks must also have certain digital capabilities to serve their jobs. What is the current state of their digital capabilities? What factors influence to develop their digital capabilities? The study examines factors affecting the digital capabilities of human resources at commercial banks. How do factors such as gender, age, Education level, Professional expertise, use of Technology and frequency of digital training impact workers' digital competencies? This study is based on survey data at commercial banks in Hanoi city (Vietnam) to calculate. The results show that all factors affecting the digital capacity of commercial bank human resources are Education level (TD), Professional expertise (CM), use of Technology (SD) and Training frequency (DT), of which two The most influential factors are the use of technology and education level.***

• Keywords: *digital capacity, commercial banking, digital transformation.*

JEL codes: J01, G21, O32

Date of receipt: 03rd October, 2023 *Date of receipt revision: 02nd November, 2023*

Date of delivery revision: 04th October, 2023 *Date of approval: 20th November, 2023*

Tóm tắt: *Năng lực số của lao động nói chung và tại ngân hàng thương mại nói riêng được quan tâm rất lớn bởi nhà nước và doanh nghiệp. Hiện nay, các ngân hàng thương mại cũng đang phải chuyển mình để chuyển đổi số để đáp ứng nhu cầu phát triển, đặc biệt trong cuộc cách mạng 4.0 và sau đại dịch Covid-19. Các ngân hàng thương mại ở Việt Nam cũng đang tích cực vừa chuyển đổi số vừa hồi phục sau Covid-19. Một trong những yếu tố quyết định sự chuyển đổi số của ngân hàng là chất lượng của nguồn nhân lực. Nhân lực trong các ngân hàng thương mại cũng phải có những năng lực số nhất định để phục vụ công việc. Vậy thực trạng năng lực số của họ hiện nay như thế nào? Những nhân tố nào tác động để phát triển năng lực số của họ? Nghiên cứu điều tra mối quan hệ liên kết giữa quá trình chuyển đổi số của ngân hàng với năng lực số của nhân lực. Những nhân tố văn hóa, xã hội, trình độ, chính sách về phát triển năng lực số, tần suất đào tạo và những rào cản đối với phát triển năng lực số tác động như thế nào tới năng lực số của người lao động. Nghiên cứu này dựa trên số liệu khảo sát tại ngân hàng thương mại ở thành phố Hà Nội (thủ đô của Việt Nam) để tính toán. Kết quả cho thấy tất cả các yếu tố đều có tác động đến năng lực số của nhân lực (cả cùng chiều và ngược chiều) tới năng lực số của người lao động trong ngành ngân hàng.*

• Từ khóa: *năng lực số, ngân hàng thương mại, chuyển đổi số.*

1. Introduction

Nowadays, digital transformation is an inevitable need in every country. Digital transformation has crept into all areas of social, political and economic life. Dong (2021). The banking and financial industry is also undergoing stronger digital transformation than ever. Digital tools have promoted the integration of commercial banks and boosted their level of digitalization. At the same time, the application of digital technology has created a new type of financial services business with the help of the Internet. This has helped digital banks compete with traditional commercial banking products and services. Lauren (2022).

** Banking Academy of Vietnam; email: duyendtt@hvnh.edu.vn - huyengtt@hvnh.edu.vn - anhdth@hvnh.edu.vn*

In the process of operating and developing the economy, the performance of commercial banks has a major impact on the development of the entire financial system as well as the capital use. Therefore, analyzing and deeply understanding the bank's digital transformation process and the role of human resources in this process is extremely important and practical. This has important reference value for the digital banking and digital finance development of commercial banks. Financial technology, or Fintech, is one of the most important innovations in the financial industry. Fintech is growing rapidly and largely driven by the sharing economy, information technology and favorable regulations. Digital innovation or the use of digital technology in a company's innovation process has radically changed the nature and structure of new products and services, including technology services finance. Furthermore, digital innovation has created new value in each product and dominated the market. More recently, there has been an expansion to identify and articulate the unique aspects of digitalization within specific industries, organizational areas, or product lines. Nambisan et al (2017). Malar et al (2019) found that the use of information technology has the potential to enhance businesses' ability to build and maintain competitive advantage. Although there is a large body of literature noting that the use of information technology continues to change the nature, scale and scope of service delivery, there is little research that addresses digital transformation processes, which showcases newly introduced IT-enabled online services across businesses and industries. The study presents the implications of IT strategy and specifically discusses how companies can avoid unwanted value destruction as they increase customer involvement in service delivery online services to create value. Zhou et al (2018) argues that to minimize the efficiency gap between productivity and profitability sub-periods, both banking managers and policymakers must implement strategic measures and technological innovations to improve both the entry and exit phases to ensure banking efficiency in Ghana. One of the solutions the authors have proposed is that input adjustments are very important for Ghanaian banks such as human resource training to reduce the amount of input resources per output. Zuo et al (2023) based on the digital transformation platform of commercial banks. The authors studied the impact of promoting digital finance on the production efficiency of commercial banks from four aspects: technological innovation, financial innovation, deep integration of technology and finance, and industrial advantages. Research results show that digital finance has a positive impact on total factor productivity of commercial banks. Through analysis of total factor productivity, digital finance has strongly promoted the improvement of total factor productivity of commercial banks through technology spillover effects. Therefore, the impact of digital finance on banks is heterogeneous. Guo (2023) stated that the industry is currently undergoing a strong digital revolution and upgrade. Researching how business digitalization affects business innovation has strategic and long-term implications. Guo's (2023) research developed a theoretical model of how digital transformation affects innovation in manufacturing enterprises. This research has adhered to the resource-based view, network embeddedness theory, and resource complementarity theory. The study shows that the level of e-commerce engagement can partially moderate the impact of digital transformation on manufacturing companies' innovation. Regulated management human capital and the positive impact of digital transformation on independent R&D investment and product innovation of manufacturing enterprises. Employee human capital is positively regulated and the significant impact of digital transformation on product innovation output of manufacturing enterprises is significant. Boufounou et al (2022) state that the rapid development of digital innovation and technology in recent decades has marked the transition to the fourth industrial revolution (and Fifth Society), causing a significant impact on all areas of human activity. Furthermore, these developments were clearly felt with the emergence of the COVID pandemic. The COVID pandemic has acted as a catalyst for impending changes in the operating models of

banks and their digitalization both domestically and internationally, seeing this particular crisis as a opportunity rather than a threat. In the study by Boufounou et al (2022) investigated the main influencing factors believed to have a positive and/or negative impact on the use of new digital banking products and services as well as the influence of factors determining digital banking expansion (gender, age, education level, pandemic, etc.). The results show that bank customers are quite satisfied and familiar with digital transactions and want to expand their use, while they consider 24/7 service capabilities as an important factor in choosing to use Digital Bank. In addition, factors for expanding use are transaction speed, transaction security and information security. However, bankers accept digital transformation positively and believe that to be successful, additional and continuous training is required to upgrade their digital skills, which will also contributing to cultural change and adaptation to the digital era. Furthermore, customer age and education level have a statistically significant impact on the increased adoption and expansion of the banking industry's digital transformation.

2. Literature review

Bawden (2018) brings together the ideas of many authors and argues that it can be done in different ways to (i) demonstrate the diversity that exists between concepts of digital literacy; (ii) model the power and usefulness of a sociocultural approach to understanding digital literacy as a plural phenomenon encompassing multiple digital literacies; and (iii) establish the benefits of adopting an expanded view of digital literacies and their importance for learning in education. Digital competency is another term often used to describe a set of skills needed in a digital environment. It is more focused as it is used to describe different elements of literacy. Potemkin et al (2020) analyzed several taxonomies of digital skills and developed their own set of digital competencies consisting of six components: information literacy, creation of digital content for communication and collaboration, security in digital environments, computer literacy, non-standard and critical thinking. In the age of digitalization, to survive or win the competition, organizations need to initiate significant changes and one of the important areas to manage is the development of employees' digital skills. The importance of developing digital skills for today's employees is justified, as today's employees become a key factor for a company's success and competitiveness in the age of digitalization. Barboutidis et al (2018) argue that adaptation in the new digital environment is of great significance and therefore identifying the necessary digital skills is important. Some of these terms have a more specific perspective (e.g., Internet skills), while others are used in a broader sense (e.g., digital literacy). For the purpose of the study, a deeper analysis of the basic concepts of "digital literacy", "digital competence" and "digital skills" is considered enlightening.

According to Ferrari (2012), for someone to be digitally competent, it is necessary to have an understanding of digital media as well as the ability to critically evaluate information originating from media or technical applications number. The author also points out that communication in today's digital environment is an integral part of digital competence. Gutiérrez et al (2022) argue that digital literacy is an integral element of sustainable education and that social concerns, along with the environment, economics, social justice and human rights, will forms the basis of the concept of sustainability. Geographic and cultural variables play relevant mediating roles in the causal relationship between digital literacy competencies and digital literacy skills. (Q1)

Khan (2019), the gap between generations also has a certain impact on the digital capabilities of research teams. Based on the performance of all groups that the author researched and investigated, generational (age) differences were found in the content of digital competencies. Depending on different ages, the level of digital competency will be different in skills. The authors' research results show that digital competencies are diversely distributed, spanning different generations (ages). (Q2). García et al (2021) in their study showed that differences in educational levels also have a certain impact on digital competence. With bachelor's and master's

training programs, it shows differences in digital competency assessment. In the teacher training chapter, digital skills also find distinction. Research results show that there is a need for programs to teach appropriate digital skills for each subject with different levels. (Q3). Müller et al (2019) found that across different job positions, digital competency skills were also found to vary. The results were found when studying job positions from lecturers and researchers in places such as science and engineering to have better digital implementation capacity than those in the social sciences field. The reason for this result is because they also regularly use computers and technology during work, in addition to combining other means of communication in developing their careers. (Q4). Synnott (2020) and Müller (2019) believe that frequent use of technological devices and means will also have an impact on workers' digital capabilities. Workers are more motivated to practice digital competencies when they regularly use and participate in digital learning. On the contrary, workers are less interested as they do not benefit much from digital skills training and do not regularly use technology. (Q5). The frequency with which workers participate in digital skills training also has an impact on workers' digital skills. The study takes into account how often employees need to renew their digital capabilities, and the results show a fairly dynamic environment that helps improve digital capabilities. The main source for enhancing employees' digital competencies is expected to be internal training provided by the employer (approximately 80%). According to the data obtained, further areas for improving digital skills in the financial services sector were identified: working in the cloud, engaging in mobile technology; automation and machine learning; digital communications, content sharing and performance measurement. Mazurchenko (2022). (Q6)

3. Research methods and results

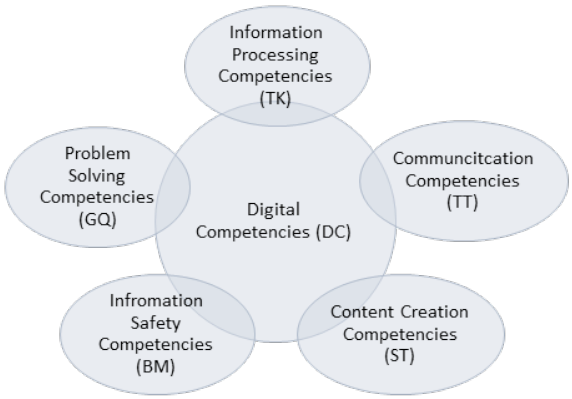
3.1. Research data

In this study, the author conducted an online 5-point Likert scale survey questionnaire measuring the value of observed variables for the dependent variable of numerical competency. The author collected 174 votes in Hanoi city, Vietnam from August 2023 to September 2023.

3.2. Research methods

According to the results of analyzing existing digital skills classifications, the authors have compiled a group of digital skills including five components: information search competencies, communication competencies in a digital environment, content creation competencies, information safety competencies and problem solving competencies. (Figure 1).

Figure 1: Digital Capabilities



Source: Compiled and Suggested by the Authors

Based on a survey of related documents as well as previous studies, the authors propose the following factors affecting digital competency (Table 1):

Table 1: Factors affecting digital competency

Factors affecting digital competency	Symbol	Factors Examined in the Study
Gender	GT	Male = 1/Female = 0
Age	Ag	Age (Under 25 years old = 1, 25-30 years old = 2, 31-45 years old = 3, over 45 years old = 4)
Education level	DT	Education level: college, university, postgraduate (college = 1, university = 2, postgraduate = 3)
Work position	CM	Professional expertise (Finance and accounting = 1, Customer relations = 2, Credit = 3, Appraisal = 4, Leadership = 5, Other = 6)
Use technology	SD	Use of computers, phones and the Internet (5-point Likert scale)
Training	DT	Training frequency (no need = 0, once a year = 1, once every six months = 2 and regularly = 3)

Source: Compiled and Suggested by the Authors

Research questions:

Q1: Does gender influence digital competency?

Q2: Does age affect digital competence?

Q3: Does educational level influence certain digital competencies?

Q4: Does job expertise influence certain digital competencies?

Q5: Does the use of technology affect certain digital competencies?

- Own and use computers

- Own and use a smartphone

- Own and use the Internet

Q6: Does training frequency affect certain digital competencies?

3.3. Hypothesis testing and discussion

Descriptive statistics: Gender (0: Female, 1: Male)

Table 2. Gender of survey participants

		Frequency	Percent	Valid percent	Cumulative percent
Valid	0	85	48.9	48.9	48.9
	1	89	51.1	51.1	100.0
	Total	174	100.0	100.0	

Source: Regression results on software

Descriptive statistics for age: Age (1: Under 25 years old, 2: 25-30 years old, 3: 31-45 years old, 4: over 45 years old)

Table 3. Age of survey participants

		Frequency	Percent	Valid percent	Cumulative percent
Valid	1	18	10.3	10.3	10.3
	2	24	13.8	13.8	24.1
	3	124	71.3	71.3	95.4
	4	8	4.6	4.6	100.0
	Total	174	100.0	100.0	

Source: Regression results on software

The R of the model is greater than 0.5, proving that the research model is highly reliable. In this study, R = 0.708 proves that the research model is accepted. (Table 4).

R square is an index for the degree of correlation between the independent variable and the dependent variables. In this study, R square = 0.501, meaning the independent variable of the studied model affects 50.1% of the variation of the dependent variable, the rest is due to variables outside the model and random errors. (Table 4).

Table 4. Model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
0.708[a]	0.501	0.490	0.5580737	0.501	42.488	4	169	0.000	2.174

Source: Regression results on software

Durbin - Watson coefficient = 2.174, proving that the model does not have first-order serial autocorrelation phenomenon.

The sig value of the F test is used to test the appropriateness of the regression model. If sig is less than 0.05, we conclude that the multiple linear regression model is suitable for the data set and can be used. This value is usually found in an ANOVA table. (Table 5).

Table 5. Multiple linear regression test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.930	4	13.233	42.488	0.000[b]
	Residual	52.634	169	0.311		
	Total	105.565	173			

Source: Regression results on software

The F-test Sig coefficient is 0.000 < 0.05, so the multiple linear regression model is suitable for the data set and can be used. (Table 5).

Regression results are based on sig and standardized beta coefficients (Standardlized Coefficients). Independent variables are considered to have an impact on the dependent variable when their Sig. value is less than 0.05 In addition, the standardized beta coefficient will indicate the direction of the independent variable's impact and the order of their strong or weak impact. If the standardized beta coefficients are positive, the independent variables will have the same impact as the dependent variable and vice versa. (Table 6). Regression with six independent variables: Gender (GT), Age (Ag), Education level (TD), Professional expertise (CM), use of Technology (SD) and Training frequency (DT), there are two variables Not

statistically significant were gender and age. We remove those two variables from the model and regression with the remaining four variables all have positive standardized beta coefficients. Proving that these four variables impact in the same direction as the dependent variable (digital capacity). The results are as shown in table 6.

Table 6. Results of regression analysis after removing GT and Ag GT variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.015	0.250		0.058	0.954		
	SD	0.320	0.065	0.320	4.930	0.000	0.700	1.429
	TD	0.305	0.050	0.386	6.119	0.000	0.742	1.348
	DT	0.188	0.051	0.212	3.724	0.000	0.915	1.093
	CM	0.083	0.035	0.129	2.368	0.019	0.992	1.008

Source: Regression results on software

Table 6 presents the results of the regression analysis. The regression coefficients for variables such as Education level (TD), Professional expertise (CM), use of Technology (SD) and Training frequency (DT) are all statistically significant. They tend to have a high reliability rating. This result indicates that increasing the regular use of technology (computers, phones and the internet), educational level, frequency of training and professional expertise will increase the digital competence of workers in commercial banks.

The factor that most positively impacts the digital capabilities of human resources at commercial banks is the regular use of technology (computers, phones and the internet). Using technology in work and daily activities will improve workers' digital capabilities such as searching for information, interacting with friends and partners, posting and storing images and documents, etc. Synnot (2020).

The second factor that positively impacts the digital capacity of human resources at commercial banks is the education level of workers. If it is the same job position or training position, people with higher qualifications often practice higher digital skills. This is shown even in their various training programs Garcia (2021).

The third positive impact factor is the frequency of digital competency training for human resources at commercial banks. Workers can participate in many different forms to improve digital capabilities such as self-study, businesses organize internal training, businesses invite outside experts to train... Regardless of the form, they can participate. Participating in training will have a positive impact on employees' own digital capabilities. Mazurchenko (2022).

The final influencing factor is professional expertise. The occupational positions participating in the survey are accountants, customer relations, credit specialists, appraisal specialists and department leaders, all of whom have good digital capabilities in commercial banks in Vietnam. Because every day at work, they have to use a lot of work-specific software and communicate with customers through digital platform applications. This impact factor is consistent with reality in Vietnam.

4. Conclusions and recommendations

Through the covid 19 pandemic, the economy was hurt and the banking and financial industry could not avoid those common difficulties. Digital capabilities are not only required for banking industry human resources but are required for the entire economy's human resources. But for the banking industry, digital application and transformation require high precision and requirements, so human resources in the industry must also transform accordingly. Therefore, to improve digital capabilities for workers, so that people If workers are ready to receive knowledge and skills, commercial banks need to:

Workers in the banking industry need to proactively participate in applying digital technology to work and life. Each job position requires different digital capabilities for small applications from community activities, offices to functional departments. Employees working in departments at banks can participate in many positions to support other departments when necessary. Therefore, human resources in the banking industry need to proactively participate in the application of digital technology to cultivate

and improve their own digital capabilities from small to large levels.

It is necessary to send workers in the banking industry to study to improve their qualifications and skills. According to survey data, workers working in the banking industry are highly qualified, mostly with college degrees or higher. So banks can send human resources to attend training courses at home and abroad. Not only to update new professional knowledge, but also to improve digital capacity through new training programs.

It is necessary to encourage workers to participate in training to improve digital capabilities. To improve their own digital capabilities, workers can self-study with each other or participate in focused class learning. Banks can organize internal training between departments and working positions. In addition, banks should invite experts to open short-term training classes suitable for each branch and transaction office. Workers can be surveyed to see their aspirations and expectations regarding the digital skills that need to be learned, so banks can invite experts and open classes accordingly.

References:

Anastasiia Mazurchenko and Kateřina Maršíková (2022). Demand for employees' digital skills in the context of banking 4.0. Business Administration and Management, E+M Ekonomie a Management 25(2):41-58 DOI:10.15240/tul/001/2022-2-003.

Avkiran, N.K. (2015). An illustration of dynamic network DEA in commercial banking including robustness tests. Omega 2015, 55, 141–150.

Barboutidis, G., Stiakakis, E., Kitsios, F., and Kamariotou, M. (2018). Proposing a new dynamic framework of digital skills: A bottom-up approach. In C. Zopounidis (Ed), Proceedings of the 7th International Symposium and 29th National Conference on Operational Research (pp. 111–115)

Bawden, D. (2008). Origins and Concepts of Digital Literacy. In C. Lankshear & M. Knobel (Eds.). Digital Literacies: Concepts, Policies and Practices (vol. 30, pp. 17–32). Peter Lang.

Boufounou, P.; Mavroudi, M.; Toudas, K.; and Georgakopoulos, G. (2022). Digital Transformation of the Greek Banking Sector in the COVID Era. Sustainability 2022, 14, 11855. https://doi.org/10.3390/ su141911855

Dhanalakshmi Arumugam Malar, Viktor Arvidsson and Jonny Holmstrom (2019). Digital Transformation in Banking: Exploring Value Co-Creation in Online Banking Services in India. Journal of Global Information Technology Management. 2019, vol. 22, No. 1, 7–24. DOI:10.1080/1097198X.2019.1567216

Dong, C., Akram, A., Andersson, D., Arnäs, P.-O.; and Stefansson, G. (2021). The impact of emerging and disruptive technologies on freight transportation in the digital era: Current state and future trends. Int. J. Logist. Manag. 2021, 32, 386–412.

Elizabeth Alexandria Lauren (2022). The Fourth Industrial Revolution in Banking Sector: Strategies To Keep Up With Financial Technology. Available at SSRN: https://ssrn.com/abstract=4049913 or http://dx.doi.org/10.2139/ssrn.4049913.

Ferrari, A. (2012). Digital competence in practice: An analysis of frameworks. Luxembourg Publication Office of the European Union. https://doi.org/10.2791/82116

García-Vandewalle García, J. M., García-Carmona, M., Trujillo Torres, J. M., and Fernández, P. M. (2021). Analysis of digital competence of educators (DigCompEdu) in teacher trainees: the context of Melilla, Spain. Technology, Knowledge and Learning. https://doi.org/10.1007/s10758-021-09546-x

Guo, X.; and Chen, X. (2023). The Impact of Digital Transformation on Manufacturing-Enterprise Innovation: Empirical Evidence from China. Sustainability 2023, 15, 3124. https://doi.org/10.3390/su15043124.

Gutiérrez-Ángel, N.; García-Sánchez, J.-N.; Mercader-Rubio, I.; García-Martín, J.; and Brito-Costa, S. (2022). Digital Competence, Validation and Differential Patterns between Spanish and Portuguese Areas as Assessed from the Latest PISA Report as a Pathway to Sustainable Education and Social Concerns. Sustainability 2022, 14, 12721. https://doi.org/10.3390/su141912721

Khan, F., and Vuopala, E. (2019). Digital competence assessment across generations: A finnish sample using the DigComp framework. International Journal of Digital Literacy and Digital Competence, 10(2), 15–28. https://doi.org/10.4018/IJDLDC.2019040102.

Mirela Müller and Melita Aleksa Varga (2019). Digital competences of teachers and associates at higher educational instiutions in the republic of croatia. Informatologia, 52, 2019, 1-2, 28-44

Nambisan, S., Lyytinen, K., Majchrzak, A., and Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. MIS Quarterly, 41(1), 223–238. doi:10.25300/MISQ/2017/41:1.03

Phan, D.H.B., Narayan, P.K., Rahman, R.E., Hutabarat, A.R. (2020). Do financial technology firms influence bank performance? Pac. -Basin Financ. J. 2020, 62, 10121.

Synnott, J., Harkin, M., Horgan, B., McKeown, A., Hamilton, D., McAllister, D., Trainor, C., and Nugent, C. (2020). The digital skills, experiences and attitudes of the Northern Ireland social care workforce toward technology for learning and development: Survey study. JMIR Medical Education. https://doi. org/10.2196/15936

Valery Potemkin and Olga Rasskazova (2020). Digital competence of employees and the value of human resources in the development strategy of enterprises. IOP Conf. Series: Materials Science and Engineering 940 (2020) 012098. IOP Publishing doi:10.1088/1757-899X/940/1/012098.

Vietnam's Government. Decision No. 749/QD-TTg. National Digital Transformation Program to 2025. Orientation to 2030. 2020. Available online: https://chinhphu.vn/default.aspx?pageid=27160&docid=200163.

Wang, K., Huang, W., Wu, J., and Liu, Y.N. (2014). Efficiency measures of the Chinese commercial banking system using an additive two-stage, D.E.A. Omega 2014, 44, 5–20.

Zhou, Z., Amowine, N., and Huang, D. (2018). Quantitative efficiency assessment based on the dynamic slack-based network data envelopment analysis for commercial banks in Ghana. South Afr. J. Econ. Manag. Sci. 2018, 21, 1–11.

Zuo, L., Li, H., and Xia, X. (2023). An Empirical Analysis of the Impact of Digital Finance on the Efficiency of Commercial Banks. Sustainability 2023, 15, 4667. https://doi.org/ 10.3390/su15054667.

IMPACT OF FINANCIAL FACTORS ON CORPORATE SUSTAINABILITY OF VIETNAMESE LISTED FIRMS IN THE BEVERAGE INDUSTRY

PhD. Nguyen Thi Lien Huong* - MA. Nguyen Thi Hien*

Abstract: ***Corporate sustainability (CS) is a subject of growing significance in contemporary business practices, with widespread attention from corporations and society. This study's primary objective is to empirically evaluate the influence of financial factors on the sustainable development of enterprises within the Vietnamese beverage industry. The research draws on data obtained from eight firms spanning a seven-year period, resulting in a dataset comprising 56 observations. In order to estimate the impact of various financial factors on sustainable development, the study employs Ordinary Least Squares (OLS), Random Effects Model (REM), and Fixed Effects Model (FEM) research methodologies. The findings of this research indicate that state ownership negatively affects the level of sustainable development in enterprises. In contrast, no statistically significant relationships were observed between business size, financial leverage, financial efficiency, and sustainable business development. Consequently, this study offers practical managerial implications aimed at enhancing the sustainable development of businesses operating within the Vietnamese beverage industry.***

• Keywords: *corporate sustainability, financial factors, sustainable development, vietnamese beverage industry, OLS, REM, FEM.*

Date of receipt: 15th September, 2023 *Date of receipt revision: 24th October, 2023*

Date of delivery revision: 18th September, 2023 *Date of approval: 01st November, 2023*

Tóm tắt: *Tính bền vững của doanh nghiệp là một chủ đề có tầm quan trọng ngày càng tăng trong thực tiễn kinh doanh hiện đại, với sự quan tâm rộng rãi của các tập đoàn và xã hội. Mục tiêu chính của nghiên cứu này là đánh giá bằng thực nghiệm sự ảnh hưởng của các yếu tố tài chính đến sự phát triển bền vững của các doanh nghiệp trong ngành đồ uống Việt Nam. Nghiên cứu dựa trên dữ liệu thu được từ tám công ty trong khoảng thời gian bảy năm, tạo ra một bộ dữ liệu bao gồm 56 quan sát. Để ước tính tác động của các yếu tố tài chính khác nhau đến phát triển bền vững, nghiên cứu sử dụng các phương pháp nghiên cứu Bình phương tối thiểu thông thường, Mô hình tác động ngẫu nhiên và Mô hình tác động cố định. Kết quả nghiên cứu này chỉ ra rằng sở hữu nhà nước ảnh hưởng tiêu cực đến mức độ phát triển bền vững của doanh nghiệp. Ngược lại, không có mối quan hệ có ý nghĩa thống kê nào được quan sát giữa quy mô doanh nghiệp, đòn bẩy tài chính, hiệu quả tài chính và phát triển kinh doanh bền vững. Từ đó, nghiên cứu này đưa ra những hàm ý quản lý thực tiễn nhằm nâng cao sự phát triển bền vững của các doanh nghiệp hoạt động trong ngành đồ uống Việt Nam.*

• Từ khóa: *bền vững doanh nghiệp, yếu tố tài chính, phát triển bền vững, ngành đồ uống Việt Nam, OLS, REM, FEM.*

Introduction

Vietnam's stance on sustainable development is formally articulated in Decision No. 622/QD-TTg of 2017, issued by the Prime Minister, which outlines the national action plan for the implementation of the 2030 agenda for sustainable development. This directive underscores the imperative of integrating sustainable development as an overarching requirement within the country's developmental trajectory. It emphasizes the necessity of closely, judiciously, and harmoniously amalgamating economic advancement with social progress while safeguarding natural resources and the environment and proactively addressing the challenges posed by climate change. Furthermore, for the beverage industry, the guidelines are elucidated in Decision No. 3690/QD-BCT of 2016 from the Ministry of Industry and

*** Thuongmai University; email: nguyenthilienhuong@tmu.edu.vn***

* This research was funded by the Vietnam Ministry of Education and Training and Thuongmai University under grant number B2022-TMA-01*

Trade, which formally approves the development plan for the beer, alcohol, and beverage industry through 2025, with a vision extending to 2035. This industry-specific plan underscores the development goal of balancing production and consumption across regions within the country, ensuring a harmonious alignment of interests among the state, society, and businesses, while concurrently mitigating the misuse of alcoholic beverages. Additionally, the plan emphasizes the imperative of sustainable development, with a specific focus on ensuring food safety and preserving the ecological environment.

Given this context, the research endeavors to address several critical inquiries. First and foremost, it seeks to elucidate the strategies by which the beverage industry in Vietnam can develop while simultaneously adhering to the principles and objectives of sustainable development. Moreover, the study attempts to identify the various factors that exert an influence on sustainable development within beverage enterprises in Vietnam. Additionally, another aim of this research is to propose viable solutions to facilitate sustainable development for businesses operating within the beverage industry. Lastly, the study assesses the role of pertinent state policies in advancing the objectives of sustainability within the beverage industry.

In accordance with the research's organizational structure, beyond the introductory section, the study comprises the following key parts: a research overview, a delineation of the research methods employed, an exposition of research findings, and a comprehensive discussion of the obtained research results. These components collectively contribute to a holistic analysis of the relationship between the beverage industry and the imperatives of sustainable development within the Vietnamese context.

Literature review

In the pursuit of sustainable development goals, contemporary businesses have exhibited a growing commitment to environmental and societal considerations within their operational frameworks, as well as in their interactions with stakeholders (van Marrewijk, 2013). Empirical evidence from extant literature has unveiled nuanced relationships between various organizational characteristics and corporate sustainability (CS). Notably, the size of an enterprise has been identified as a factor with a positive influence on CS (Artiach et al., 2010; Pradhan et al., 2019). Larger firms, as mentioned by Chih et al. (2010) and D'Amato àd Falivena (2020), are subject to heightened public scrutiny and societal attention, which imposes greater pressure on them to implement robust and sustainable practices. However, contrary findings suggest that extensive market reach and transactional magnitude in larger enterprises may elevate the likelihood of adverse events, as posited by Artiach et al. (2010) and Godfrey et al. (2009). Ziegler and Schröder (2010) assert that these larger firms are more inclined to engage in socially and environmentally responsible activities to offset the escalated risk associated with their scale. Moreover, larger businesses are better poised to harness economies of scale when executing sustainability initiatives, an advantage that smaller companies may find less accessible, given the pronounced impact of fixed costs on their operations.

The relationship between financial leverage and CS remains a subject of considerable variability within the literature. Some studies, such as Jensen and Meckling (1976), suggest that leveraging through debt may incentivize businesses to disclose more information about their social responsibilities. In contrast, investigations by Ho and Taylor (2007) and Branco et al. (2014) reveal an inverse relationship, where greater reliance on debt financing directs companies' focus more toward the concerns of creditors, potentially sidelining less influential stakeholders. Furthermore, firms with lower levels of debt may possess increased financial flexibility to support environmental and social initiatives (Ziegler and Schröder, 2010).

Artiach et al. (2010) contend that organizations exhibiting sound financial performance face less immediate financial demands from investors, affording them the capacity to invest in policy programs that yield economic and societal benefits. Similarly, Ullman's (1985) research illustrates that in periods of economic underdevelopment, economic objectives tend to take precedence over social concerns within companies. Additionally, Ziegler and Schröder (2010) posit that businesses demonstrating superior economic performance are better equipped to invest in new capital, consequently enhancing sustainability performance, even if sustainability is not their primary objective.

Ownership structure is another focal point of inquiry in CS research, where scholars have explored the impact of dispersed ownership on CS disclosure. Jensen and Meckling (1976) contend that firms with widely dispersed ownership may be susceptible to opportunistic management behaviors and conflicts of interest between managers and investors. In such circumstances, voluntary disclosure can serve as a bonding and monitoring mechanism to mitigate these conflicts. Cullen and Christopher (2002) and Ullmann (1985) provide evidence that ownership dispersion among numerous investors amplifies pressure for voluntary disclosure. Prencipe (2004) found that companies with numerous owners are generally expected to disclose more information than corporations with concentrated ownership to reduce information asymmetry between the organization and its shareholders. Furthermore, businesses with broadly held shares are more inclined to enhance their financial reporting policies by incorporating CS disclosure, thereby reducing this information asymmetry. Sánchez et al. (2011) argue that management decisions within a company are more sensitive to social issues when ownership is more dispersed, either due to ethical investors or social funds, as these stakeholders are more likely to intervene in decision-making processes.

The role of the state or government in promulgating laws and regulations related to CS has prompted researchers to explore the association between state ownership of companies and CS. For instance, studies by Matuszak et al. (2019) in Poland, Alkayed and Omar (2022) in Jordan, and Dong et al. (2022) in China have found positive effects of government or state ownership on CS disclosure and emphasis. However, limited research exists regarding the relationship between state ownership and CS in the Vietnamese beverage industry. Nevertheless, existing empirical studies suggest that state ownership may positively influence CS disclosure. As a result, the hypothesis posits that state ownership exerts a positive impact on CS.

In light of this comprehensive research overview, the authors posit the following research hypotheses:

H1: Enterprise size positively influences CS.

H2: Profitability (Return on Assets, ROA) positively influences CS.

H3: Financial leverage negatively affects social responsibility.

H4: State ownership ratio of enterprises positively impacts CS.

Research methods

Research samples and data

The research sample is 8 beverage industry enterprises listed on the Vietnamese stock market in the period 2014 - 2020. Data is presented in the form of a table of enterprises - years with 56 observations.

Research models and variables

Based on the research assumptions, the author proposes a research model with the dependent variable being sustainable business development, measured on different scales:

$$CS_{it} = \beta_1 + \beta_2 ROA_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 State_{it} + \varepsilon_i \quad (1)$$

$$ENV_{it} = \beta_1 + \beta_2 ROA_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 State_{it} + \varepsilon_i \quad (2)$$

$$SCO_{it} = \beta_1 + \beta_2 ROA_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 State_{it} + \varepsilon_i \quad (3)$$

Table 1. Variable descriptions

Symbol	Variable name	Recipe
Dependent variable		
CS	Corporate Sustainability Score	$CS = \sum_{j=1}^{e} \frac{e_j}{e}$ In which: CSR is an index assessing the level of disclosure of sustainable development information of an enterprise; e_j is the number of indicators that the company has disclosed information on (e_j = 1 if the indicator is announced by the business, otherwise e_j = 0). The indicators include both environmental and social, the total number of indicators is 64.
ENV	Environmental sustainable development Score	$ENV = \sum_{j=1}^{e} \frac{e_j}{e}$ In which: ENV is an index assessing the level of disclosure of sustainable development information of an enterprise; e_j is the number of indicators that the company has disclosed information on (e_j = 1 if the indicator is announced by the business, otherwise e_j = 0). The number of environmental indicators is 30 indicators.
SCO	Social sustainable development Score	$SCO = \sum_{j=1}^{e} \frac{e_j}{e}$ In which: SCO is an index to evaluate the level of disclosure of sustainable development information of enterprises on society; e_j is the number of indicators that the company has disclosed information on (e_j = 1 if the indicator is announced by the business, otherwise e_j = 0). The total number of social indicators is 34 indicators.

Symbol	Variable name	Recipe
Independent variables		
ROA	Rate of return on assets	Profit after tax/Total assets
Leverage	Financial leverage	Liabilities/ Total assets
Size	Enterprise scale	Logarithm of total assets
State	State ownership rate	State ownership ratio

The dependent variables in the three research models are Sustainable Development Score (CS), Environmental Sustainability Score (ENV), and Social Sustainability Score (SCO). The dependent variables in the 3 models are Return on assets (ROA), Financial leverage (Leverage), Enterprise size (Size), and State ownership ratio (State).

Research methods

In this study, firm-year panel data is used for regression analysis. The regression methods used are least squares (OLS), fixed effects regression method (FEM), random effects regression method (REM).

(1) Least squares estimation model (Pooled OLS): is a regular OLS model, does not differentiate by subject and by time, so the regression results are often unreliable.

(2) Fixed Effect Model (FEM): Consider an economic relationship between the dependent variable Y and the vector X including independent variables. We have table data for Y, X including *N* - subjects and *T* - time points. So we have NxT observations. The classical linear regression model without a cutoff coefficient is determined by:

$Y_{it} = X_{it}\beta + \eta_i u_{it}$ *with* i = *1, 2, ...,* N *and* t = *1, 2, ...,* T

In which: β is the matrix of regression coefficients, the above equation is called the fixed effects regression model FEM. In the FEM fixed effects model. The residuals of the linear regression model are separated into two components: one representing unobservable factors that vary between subjects but do not change over time η_i; one representing unobservable factors that vary across subjects and change over time (u_{it}).

(3) Random Effects Model (REM):

$Y_{it} = \beta_2 X_{2it} + ... + \beta_k X_{kit} + \mu_{it}$ *with* i = *1, 2, ...,* N *and* t = *1, 2, ...,* T; $\mu_{it} = \varepsilon_i + u_{it}$

In which: ε_i is the random error with expectation equal to 0 and variance is σ^2; u_{it} is the other combined component error of both the individual characteristics of each subject and over time. An important assumption in the random effects model is that the error component μ_{it} is uncorrelated with any explanatory variable in the model.

However, the Pooled OLS model is a model that cannot control each individual characteristic of each business in the study while the two models FEM and REM overcome this drawback. Therefore, the authors decided to use the FEM model and the REM model, then used the Hausman test to determine whether the FEM model or the REM model is appropriate for research.

Research results

Descriptive statistics

Data in Table 2 shows that the financial performance of businesses in the beverage industry has an industry average value of 0.0970, the largest value is 0.3381, the lowest value is -0.1123. Financial leverage has an average of 0.3575, indicating that on average 35.75% of a business's funding comes from debt. The lowest and highest values of financial leverage are 0.0846 and 0.8279, respectively, showing that the level of debt use is greatly different between businesses in the same business industry. The average state ownership ratio is 12.8541 which means 12.8541% of beverage enterprises have state ownership. The lowest rate is 0% and the highest is the state ownership rate of 61.9%. The overall sustainable development score (CS), the environmental sustainability score (ENV), and the social sustainability score (SOC) are all quite low, with an average of 0.0301, 0.0273 and 0.0273 respectively, indicating that the level of information disclosure on sustainable development is still limited.

Table 2. Descriptive statistics

Variable	Number of observations	Mean	SE	Min	Max
CS	56	0.0301	0.0354	0	0.1719
ENV	56	0.0273	0.0547	0	0.2667
SOC	56	0.0326	0.0267	0	0.1176
ROA	56	0.0970	0.1004	-0.1123	0.3381
Size	56	27,3549	1.8714	25,2550	31,5112
Leverage	56	0.3575	0.1971	0.0856	0.8279
State	56	12,8541	20,6276	0	61.9

Source: author's own calculations

Correlation matrix

Table 3 illustrates the correlation between variables in the model. It can be seen that the

dependent variable CS is strongly correlated with the two independent variables of the model, Leverage and State, expressed in high and statistically significant correlation coefficients. The dependent variable ENV is also highly correlated with the Size and State variables. The SOC variable is strongly correlated with the Leverage and State variables. The strong correlation between the independent variables and the dependent variable implies that the research model is statistically significant. The relationship pairs ROA and Size, Leverage and Size are statistically significantly correlated. This implies that the model may have multicollinearity among the independent variables.

Table 3. Correlation matrix

	CS	ENV	SOC	ROA	Size	Leverage	State
CS	1,0000						
ENV	0.9410 **	1,0000					
SOC	0.7911 **	0.5375 **	1,0000				
ROA	0.0213	0.0070	0.0405	1,0000			
Size	-0.1595	-0.2543 *	0.0622	0.6439 **	1,0000		
Leverage	-0.2971 *	-0.1731	-0.4275 ***	-0.3185 *	-0.2665 *	1,0000	
State	-0.3642 **	-0.3175 *	-0.3338 *	0.1407	0.1144	0.2372	1,0000

** with p_value at 5%, ** at p_value 1%*

Source: author's own calculations

Multicollinearity test

Although the results of the correlation matrix show that the ROA variable is correlated with Size and Leverage, this poses a risk that the variables in the model may suffer from multicollinearity, however, when performing the VIF test, the results show that the VIF coefficient is <2, the variables in the model do not have multicollinearity (Table 4).

Table 4. VIF testing

Variable	VIF	1/VIF
ROA	1.83	0.5451
Size	1.72	0.5801
Leverage	1.24	0.8036
State	1.13	0.8873
Mean VIF	1.48	

Source: author's own calculations

Regression results

The study used the Breusch-Pagan test to choose between OLS and REM models, the results showed that OLS is not the appropriate model. The Hausman test was used to choose between the REM and FEM models. The results of the Hausman test show that FEM is the more suitable model.

When comparing all three models OLS, REM, and FEM (Table 5), with the regression model (1) with the dependent variable being CS, the results are as follows: The financial performance variable ROA has a positive impact on Sustainable development (CS); however, this result is statistically significant in the OLS model, but is not stable in the REM and FEM regression models. The business size variable and financial leverage variable have negative Coef regression coefficients in all 3 models, but the results of this regression coefficient are not statistically significant in all 3 models. The State variable is in the opposite direction in all 3 models, showing that state ownership reduces the level of information disclosure on sustainable development. This result is firmly shown to be statistically significant in all 3 OLS models. , REM and FEM.

Table 5: OLS, REM and FEM regression results with dependent variable CS

CS	OLS		REM		FEM	
	Coef.	*p_value*	*Coef.*	*p_value*	*Coef.*	*p_value*
ROA	0.0629	0.0287*	0.0401	0.541	-0.1400	0.883
Size	-0.0058	0.062*	-0.0047	0.204	-0.0000	1,000
Leverage	-0.0450	0.073	-0.0389	0.156	-0.0291	0.451
State	-0.0005	0.028*	-0.0006	0.016*	-0.0006	0.028*
_cons	0.20554	0.015	0.1750	0.076	0.0500	0.919
R2	*23.46*		*53.47*		*30.51*	

** with p_value at 5%, ** at p_value 1%*

Source: author's own calculations

Table 6: OLS, REM and FEM regression results with dependent variable ENV

ENV	OLS		REM		FEM	
	Coef.	*p_value*	*Coef.*	*p_value*	*Coef.*	*p_value*
ROA	0.1571	0.090*	0.1142	0.271	-0.007	0.959
Size	-0.0130	0.008**	-0.0111	0.063	-0.029	0.282
Leverage	-0.0363	0.345	-0.024	0.588	-0.011	0.854
State	-0.0007	0.040*	-0.0009	0.014*	-0.001	0.017*
_cons	0.3891	0.003	0.3413	0.034	0.847	0.259
R2	*22.51*		*42.49*		*21.99*	

** with p_value at 5%, ** at p_value 1%*

Source: author's own calculations

Regression model (2) with the dependent variable ENV has regression results presented in Table 6. The variable ROA has a positive impact on ENV, but this result is not stable in all 3 models. Similarly,

the Size variable has a negative impact on ENV and the result is only statistically significant in the OLS regression model and not statistically significant in the REM and FEM models. The Leverage variable is not significant in all three models. In contrast, the State variable is stable in all three research models with a negative coefficient, showing that state ownership reduces the disclosure of environmental sustainability information.

Table 7 presents the regression results of Research Model (3) with the dependent variable SOC. In this model, most of the variables are not statistically significant and the Leverage variable is statistically significant in OLS and REM but is not stable in the FEM model.

Table 7: OLS, REM and FEM regression results with dependent variable SOC

SOC	OLS		REM		FEM	
	Coef.	*p_value*	*Coef.*	*p_value*	*Coef.*	*p_value*
ROA	-0.0202	0.646	-0.0481	0.368	-0.0198	0.767
Size	0.0005	0.828	0.0027	0.434	0.0258	0.046
Leverage	-0.0525	0.006**	-0.0480	0.033*	-0.0453	0.100
State	-0.0003	0.075	-0.0003	0.114	-0.0003	0.170
_cons	0.0436	0.478	-0.0170	0.857	-0.6530	0.066
R2	*24.33*		*45.03*		*3.72*	

** with p_value at 5%, ** at p_value 1%*

Source: author's own calculations

Discussion

The research findings elucidate the influence of state ownership on the disclosure of both general sustainable development information and environmental sustainability information within beverage industry enterprises. Interestingly, this impact exhibits a contrary direction, thereby refuting Hypothesis H4, which postulated that state ownership exerts a positive impact on sustainable enterprise development. Consequently, the evidence indicates that state-owned enterprises within the beverage sector tend to divulge less information pertaining to sustainable development when compared to their private counterparts. This finding aligns with the outcomes of Kim and Jo's (2022) research but contrasts with the results reported by Li and Zhang (2010). It is evident that the propensity for disclosing sustainable development information is more pronounced among private enterprises than among state-owned enterprises. This observation may be attributed to the relatively lower motivation of state-owned enterprises to publicly communicate their commitment to sustainable development, as they often enjoy inherent advantages in terms of market positioning, access to capital, customer base, and operational tenure compared to private enterprises. Furthermore, the limited state regulations concerning the disclosure of sustainable development information and the inherently slower adaptability of state-owned enterprises due to their less flexible operational mechanisms may offer additional insights into the rationale behind this research finding.

References:

Alkayed, H., & Omar, B. F. (2022). Determinants of the extent and quality of corporate social responsibility disclosure in the industrial and services sectors: the case of Jordan. Journal of Financial Reporting and Accounting.

Artiach, T., Lee, D., Nelson, D., & Walker, J. (2010). The determinants of corporate sustainability performance. In Accounting & Finance (Vol. 50, Issue 1, pp. 31-51).

Castelo Branco, M., Delgado, C., Ferreira Gomes, S., & Cristina Pereira Eugénio, T. (2014). Factors influencing the assurance of sustainability reports in the context of the economic crisis in Portugal. In Managerial Auditing Journal (Vol. 29, Issue 3, pp. 237-252).

Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. Journal of Business Ethics, 93, 115-135.

Cullen, L., & Christopher, T. (2002). GOVERNANCE DISCLOSURES AND FIRM CHARACTERISTICS OF LISTED AUSTRALIAN MINING COMPANIES. International Journal of Business Studies, 10(1).

D'Amato, A., & Falivena, C. (2020). Corporate social responsibility and firm value: Do firm size and age matter? Empirical evidence from European listed companies. Corporate Social Responsibility and Environmental Management, 27(2), 909-924.

Dong, W., Dong, X., & Lv, X. (2022). How does ownership structure affect corporate environmental responsibility? Evidence from the manufacturing sector in China. Energy Economics, 112, 106112.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. Strategic Management Journal, 30(4), 425-445.

Jennifer Ho, L., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: evidence from the United States and Japan. In Journal of International Financial Management & Accounting (Vol. 18, Issue 2, pp. 123-150).

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. In Journal of financial economics (Vol. 3, Issue 4, pp. 305-360).

Kim, J., & Jo, H. (2022). Controlling owner type, state capitalism, and corporate social responsibility in Africa. Corporate Governance: An International Review, 30(6), 765-782.

Li, W., & Zhang, R. (2010). Corporate social responsibility, ownership structure, and political interference: Evidence from China. In Journal of Business Ethics (Vol. 96, Issue 4, pp. 631-645).

Matuszak, Ł., Różańska, E., & Macuda, M. (2019). The impact of corporate governance characteristics on banks' corporate social responsibility disclosure: Evidence from Poland. Journal of Accounting in Emerging Economies, 9(1), 75-102.

Pradhan, A. K., & Nibedita, B. (2021). The determinants of corporate social responsibility: Evidence from Indian Firms. Global Business Review, 22(3), 753-766.

Prencipe, A. (2004). Proprietary costs and determinants of voluntary segment disclosure: evidence from Italian listed companies. European Accounting Review, 13(2), 319-340.

Sánchez, J. L. F., Sotorrío, L. L., & Díez, E. B. (2011). The relationship between corporate governance and corporate social behavior: A structural equation model analysis. Corporate Social Responsibility and Environmental Management, 18(2), 91-101.

Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. Academy of Management Review, 10(3), 540-557.

van Marrewijk, M. (2013). Concepts and definitions of CSR and corporate sustainability: Between agency and communion. Citation Classics from The Journal of Business Ethics: Celebrating the First Thirty Years of Publication, 641-655. https://doi.org/10.1007/978-94-007-4126-3_32

Ziegler, A., & Schröder, M. (2010). What determines the inclusion in a sustainability stock index?: A panel data analysis for european firms. Ecological Economics, 69(4), 848-856.

LITERATURE REVIEW: RESEARCH FOR THE EFFECT OF CORPORATE GOVERNANCE TO ACCOUNTING INFORMATION TRANSPARENCY

MA. Le Ngoc Doan Trang*

Abstract: ***The goal of this article is to summarize research on the impact of corporate governance issues on accounting information transparency. Based on the literature review, the article identifies trends regarding the influence of factors such as board size, independent board composition, CEO role duality, internal audit committee, and director ownership on accounting information transparency. Employing a synthesis method that involves studying accounting information transparency from a corporate management perspective, this article analyzes and presents these findings in a chronological research stream. Its primary aim is to provide an overview of the published research. The content of this article contributes to enriching the literature related to accounting information transparency research.***

• Keywords: *accounting information transparency, corporate governance.*

JEL codes: M4, M40

Date of receipt: 22th October, 2023
Date of delivery revision: 23th October, 2023
Date of receipt revision: 15th November, 2023
Date of approval: 21th November, 2023

Tóm tắt: *Mục tiêu của bài viết là tổng hợp các kết quả nghiên cứu về ảnh hưởng các yếu tố thuộc quản trị DN tác động đến minh bạch thông tin kế toán. Dựa trên nội dung lược khảo, bài viết đã nhận diện xu hướng tác động của từng nhân tố như quy mô Hội đồng quản trị, thành viên Hội đồng quản trị độc lập, sự kiêm nhiệm giám đốc điều hành và Chủ tịch Hội đồng quản trị, ủy ban kiểm toán nội bộ, cấu trúc sở hữu vốn của quản lý ảnh hưởng đến tính đến minh bạch thông tin kế toán. Sử dụng phương pháp tổng hợp các nghiên cứu liên quan đến minh bạch thông tin kế toán từ góc độ quản trị DN, phân tích và trình bày theo dòng nghiên cứu, mục tiêu chính của bài viết này là cung cấp cái nhìn tổng quan về các nghiên cứu đã công bố. Nội dung bài viết làm phong phú thêm tài liệu về dòng nghiên cứu yếu tố thuộc quản trị DN có liên quan minh bạch thông tin kế toán.*

• Từ khóa: *minh bạch thông tin kế toán, quản trị doanh nghiệp.*

Introduction

Researchers and policymakers are increasingly focusing on the transparency of accounting information, especially after the global financial crisis emphasized the importance of corporate disclosure in guiding investment decisions within the capital market. The consequences of non-transparent accounting information impact various stakeholders, notably eroding investor trust and indirectly affecting economic development. The early 21st century witnessed numerous scandals, frauds, and manipulations, such as the crisis involving accounting scandals at Toshiba Corporation, Enron, WorldCom, Arthur Anderson, and others, exposing low levels of transparency as companies failed to fully disclose information. Various stakeholders have called for greater 'transparency' in accounting.

According to Alardi et al. (2021) and Kenton (2022), a key factor leading to subsequent financial crises is the difference between the information available to financial statement users and that accessible to managers due to inadequate disclosure control regulations. Since the 1990s, addressing the problem of information asymmetry has been supported by advocating for the disclosure of financial information, allowing effective monitoring of management activities. While disclosing more information is allowed for managers, it comes with negative consequences and additional costs. Nevertheless, accounting information transparency remains a more effective way to build investor trust and enhance a company's value.

*** SaiGon University (SGU); email: lndtrang@sgu.edu.vn***

In its more than 20 years of operation, the Vietnamese stock market has become a long-term capital-raising avenue for business development investments. Infamous corporate scandals from 1998 to the present reinforced the belief that companies in Vietnam have not achieved a high level of transparency in accounting information disclosure. To maintain trust among both domestic and foreign investors, the Vietnamese government has imposed requirements on companies to implement effective corporate governance and transparently disclose information. While the Ministry of Finance's information disclosure regulations were fully adhered to by all enterprises in 2022, some companies still fell short of compliance, impacting the openness of information.

As a result, investors continue to operate within a low-information environment in the stock market. In emerging economies like Vietnam, where closing the information gap between domestic and foreign investors is crucial, transparency in information sharing becomes even more essential. Therefore, this study aims to provide valuable insights to better understand how corporate governance affects the transparency of listed companies in Vietnam's developing capital market. Bridging the theoretical gap and highlighting relevant policies is done with the awareness that corporate governance significantly influences information transparency, prompting authorities to review and implement measures for its improvement.

The concept of accounting information transparency

Multiple perspectives exist regarding accounting information transparency as researchers approach it from different views. Accounting transparency is considered a signal of participants' reliability and influences the decision-making process by granting access to information rights. Many authors concur that transparency entails increased disclosure, provision of high-quality information, and simplicity in comprehension. Transparency is perceived as a factor that promotes ethical behavior and restrains attempts to manipulate information provision.

A robust disclosure regime primarily promotes transparency to monitor companies in the market and aims at ensuring that shareholders have comprehensive information. Concurrently, transparent accounting information improves data provided by companies by elucidating details, thereby enhancing information disclosure and diminishing the impact of rumors and the misuse of internal information (Sabry et al., 2023). The level of financial information transparency can mitigate the likelihood of deliberate managerial intervention in adjusting earnings. Perspectives on information transparency assert that transparency is bolstered through mechanisms that lead to information disclosure.

Overview of corporate governance affecting accounting information transparency.

According to the OECD, the framework for corporate governance must include the open disclosure of information. According to Beekes et al. (2006), companies with effective governance practices typically provide more useful information and attract more investment. The agency theory claims that effective company governance can improve the supervision and control of management activities, reducing opportunistic conduct and addressing information asymmetry problems. According to research by Ho, S.S.M. et al. (2001), in an environment with rigorous corporate governance scrutiny and good management practices, managers are less likely to withhold or disclose misleading information. Therefore, effective corporate governance promotes transparency and accountability in disclosing information. Consequently, companies tend to actively disclose voluntary information.

Board size

According to the agency theory, board size is a key determinant in monitoring managers. Samaha et al. (2012) suggested that listed companies with larger boards are less likely to be influenced by top executive directors and, consequently, are better able to disclose more information than businesses with smaller boards of directors. However, in contrast, Jensen (1993) showed that the level of transparency in information disclosure is negatively affected by larger boards in listed companies because they are associated with poor communication and supervision. The majority of prior research supports the idea that there is a negative correlation between the size of the board and the transparency of accounting information (Samaha et al., 2015). The suggested explanation is that managers tend to lack the motivation to engage in decisions on larger boards, resulting in lower levels of information disclosure. However, some studies do not find a relationship between board size and the level of accounting information transparency (Ebrahim et al., 2015).

Independent board composition

According to agency and stakeholder theories, the board of directors is not only considered a major

internal control mechanism to monitor managers and reduce agency conflicts between managers and shareholders, but it also serves as a vehicle to advance the interests of other stakeholders (Chen et al., 2010). Fama et al. (1983) argue that effective corporate governance can enhance monitoring and control over managerial activities, thereby limiting opportunistic behavior and information asymmetry issues. Consequently, corporate boards with a higher percentage of independent non-executive directors exert more influence in managing and overseeing managerial decisions. This perspective aligns with the conclusion that including outside directors in the board of directors can enhance its effectiveness as an internal control mechanism, prevent asset misappropriation by shareholders, reduce agency costs, and pressure for better disclosure (Forker, 1992).

In an environment with strict corporate governance oversight, Ho, P.-L. (2009) suggests that managers would find it difficult to withhold any information or disclose misleading information. Therefore, effective corporate management promotes transparency and accountability in explaining the company's information, positively impacting the level of transparency disclosures. If an independent board composition fulfills its roles of control and oversight, there will be more information disclosure (Haniffa et al., 2002). Therefore, in practical terms, the results of some studies have found a positive correlation between a non-executive board, not involved in management, and the disclosure of transparent accounting information (Samaha et al., 2015). In contrast, several studies could not find any significant association between the proportion of board composition and transparent accounting information disclosure (Aljifri et al., 2014).

CEO role duality

The roles of the Chief Executive Officer (CEO) and chairman of the board in joint-stock companies are both crucial but different. CEO role duality occurs when the CEO of a firm also serves as the chairman of the board. According to agency theory, CEO dual roles can empower the CEO, leading to managerial dominance and control over decisions, potentially hindering the supervisory role of the board of directors and impacting the company's information disclosure. However, CEO role duality also fosters leadership unity and a high degree of autonomy. Research argues that effectively monitoring the board can be achieved by having multiple independent board members, resulting in increased transparency in information disclosure (Dalton et al., 1998).

From the perspective of resource dependence theory, separating the positions of Chairman of the Board and CEO can enhance the reputation of the listed company in the economic landscape and increase stakeholder participation by promoting fairness and equality in the decision-making process. Thus, CEO role duality can negatively impact objectivity in decisions (Ntim et al., 2012b).

Previous experimental research has provided diverse results regarding the inconsistent relationship between the role of the CEO and transparency in accounting information disclosure: some prior studies have reported no significant relationship between the dual role of CEO and transparency in information disclosure (Babío Arcay et al., 2005), while other studies found a negative relationship between the two variables (Ntim et al., 2013).

Internal audit committee

According to agency theory, listed companies have internal audit committees that help minimize agency conflicts. This is considered an important factor in the governance system of the board, aiding in controlling internal decisions and enhancing the quality of information exchange between owners and management (Babío Arcay et al., 2005).

Research has found that the presence of an internal audit committee has a positive impact on the company's accounting information disclosure behavior (Samaha et al., 2015). On the other hand, other authors have reported no relationship between information disclosure and the presence of an internal audit committee (Alhazaimeh et al., 2014; Aljifri et al., 2014).

Director ownership

Director ownership is determined based on the percentage of common stock held by the CEO and Board of Directors. If ownership and control are concentrated in a few individuals or a specific group, it can make the company's decisions and actions more susceptible to influence due to the personal interests of these individuals. The consequence of this impact is a lack of transparency and fairness in management, affecting corporate governance and interaction with external shareholders.

According to agency theory, management ownership reduces agency costs because managers who own company shares have an incentive to bear the consequences and gain benefits from the

company. Therefore, higher levels of management ownership allow companies to align the interests of managers with shareholders, thus encouraging companies to voluntarily provide more information. Nagar et al. (2003) identified a positive correlation between information disclosure and the long-term asset value of stocks. Similarly, lower management ownership may encourage managers to use their privileges to resist maximizing shareholder wealth (Eng et al., 2003). Evidence from the study of Ghazali et al. (2006) shows an association between low management ownership and low levels of information disclosure identified in listed companies in Malaysia. Jiang et al. (2009) reported that higher management ownership leads to an increase in voluntary transparent information disclosure practices in listed companies in New Zealand. Previous studies have shown a negative relationship between managerial ownership and the level of accounting information disclosure (Ghazali et al., 2006).

Conclusion

The goal of this article is to summarize research on the effects of corporate governance issues on accounting information transparency. According to the synthesized results, the size of the board affects accounting information transparency in various ways, yielding different outcomes across different studies. Additionally, independent board composition contributes to enhancing accounting information transparency, while CEO role duality reduces accounting information transparency. The independence and financial expertise of members in the internal audit committee are related to increased transparency in information disclosure. Director ownership is also considered a contributing factor to increased transparency in information disclosure.

This topic could be explored further in future research in Vietnam, especially within the context of emerging economies. Furthermore, delving deeper into factors related to corporate governance also presents opportunities for further research. For example, future studies could combine the study of the impact of CEO duality on information transparency with CEO tenure.

The limitations of this article include the relatively small number of research papers included in the synthesis, which may have resulted in the omission of other factors within corporate governance. Additionally, a more in-depth analysis of control variables within the authors' research model was not conducted. The article primarily takes the form of a literature review without performing specific model testing.

Despite these limitations, the synthesis presented in the article contributes to the overall understanding of the literature on the topic of accounting information transparency. Researchers may find value in further investigating the relationship between corporate governance and accounting information transparency based on the insights provided in this article. Additionally, this article could serve as a notable reference when regulatory authorities introduce regulations on corporate governance aimed at enhancing accounting information transparency and ensuring the quality of financial reports.

References:

Alardi, Mohamed Wedad & Altass, Sultan Mohamed Omar. (2021). Transparency index as a preface to support financial reports transparency and to increase shareholder protection level. European Journal of Accounting, Auditing and Finance Research, 9(1), 23-84.

Alhazaimeh, AmerPalaniappan, Ravindran & Almsafir, Mahmoud. (2014). The impact of corporate governance and ownership structure on voluntary disclosure in annual reports among listed Jordanian companies. Procedia-Social and Behavioral Sciences, 129, 341-348.

Aljifri, KhaledAlzarouni, AbdulkareemNg, Chew & Tahir, Mohammad Iqbal. (2014). The association between firm characteristics and corporate financial disclosures: evidence from UAE companies. The International Journal of Business and Finance Research, 8(2), 101-123.

Babío Arcay, M. Rosario & Muiño Vázquez, M. Flora. (2005). Corporate Characteristics, Governance Rules and the Extent of Voluntary Disclosure in Spain. Advances in Accounting, 21, 299-331.

Beekes, Wendy & Brown, Philip. (2006). Do Better-Governed Australian Firms Make More Informative Disclosures? Journal of Business Finance & Accounting, 33(3-4), 422-450.

Chen, Jennifer C. & Roberts, Robin W. (2010). Toward a more coherent understanding of the organization–society relationship: A Theoretical Consideration for social and environmental accounting research. Journal of Business Ethics, 97(4), 651-665.

Dalton, Dan R.Daily, Catherine M.Ellstrand, Alan E. & Johnson, Jonathan L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. Strategic Management Journal, 19(3), 269-290.

Ebrahim, Ahmed & Fattah, Tarek Abdel. (2015). Corporate governance and initial compliance with IFRS in emerging markets: The case of income tax accounting in Egypt. Journal of International Accounting, Auditing and Taxation, 24, 46-60.

Eng, L. L. & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. Journal of Accounting and Public Policy, 22(4), 325-345.

Fama, Eugene F. & Jensen, Michael C. (1983). Separation of Ownership and Control. The journal of law and Economics, 26, 301 - 325.

Forker, John J. (1992). Corporate Governance and Disclosure Quality. Accounting and Business Research, 22(86), 111-124.

Ghazali, Mohd Nazli A. & Weetman, Pauline. (2006). Perpetuating traditional influences: Voluntary disclosure in Malaysia following the economic crisis. Journal of International Accounting, Auditing and Taxation, 15(2), 226-248.

Haniffa, R.M. & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. Abacus, 38(3), 317-349.

Ho, Poh-Ling. (2009). Determinants of voluntary disclosure by Malaysian listed companies over time. Curtin University,

Ho, Simon S. M. & Shun Wong, Kar. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. Journal of International Accounting, Auditing and Taxation, 10(2), 139-156.

Jensen, Michael C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. The journal of finance, 48(3), 831-880.

Jiang, Haiyan & Habib, Ahsan. (2009). The impact of different types of ownership concentration on annual report voluntary disclosures in New Zealand. Accounting Research Journal, 22(3), 275-304.

Kenton, W. (2022). Financial crisis: Definition, causes, and examples.. Retrieved from https://www.investopedia.com/terms/f/financial-crisis.asp

Nagar, VenkyNanda, Dhananjay & Wysocki, Peter. (2003). Discretionary disclosure and stock-based incentives. [Tiết lộ tùy ý và dựa trên chứng khoán ưu đãi]. Journal of accounting and economics, 34(1), 283-309.

Ntim, Collins G. & Soobaroyen, Teerooven. (2013). Black Economic Empowerment Disclosures by South African Listed Corporations: The Influence of Ownership and Board Characteristics. Journal of Business Ethics, 116(1), 121-138.

Sabry, Sada Sabah & Hussein, Ali Ibrahim. (2023). The modified role of the company's characteristics in the relationship of accounting disclosure transparency with the restatement of financial statements: Evidence from Iraq. Journal of Namibian Studies: History Politics Culture, 33, 2192–2214-2192–2214.

Samaha, KhaledDahawy, KhaledHussainey, Khaled & Stapleton, Pamela. (2012). The extent of corporate governance disclosure and its determinants in a developing market: The case of Egypt. Advances in Accounting, 28(1), 168-178.

Samaha, KhaledKhlif, Hichem & Hussainey, Khaled. (2015). The impact of board and audit committee characteristics on voluntary disclosure: A meta-analysis. Journal of International Accounting, Auditing and Taxation, 24, 13-28.

BUSINESS PERFORMANCE OF VIETNAM JOINT STOCK COMMERCIAL BANK FOR INDUSTRY AND TRADE

MA. Le Phuoc Hoai Bao*

Abstract: ***As one of the leading joint stock commercial banks in Vietnam, Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank) has made great efforts to improve its business performance while ensuring safety in its operations. However, Vietinbank also needs to make more efforts to compete with other banks in terms of technology, market share and business efficiency. This paper aims to examine Vietinbank's business performance from 2018 to 2022. Based on the analysis of business performance and evaluations of Vietinbank's operations, some recommendations are proposed to improve the bank's business efficiency going forward.***

• Keywords: *joint stock commercial bank, business performance, Vietinbank.*

JEL codes: G21

Date of receipt: 02nd October, 2023
Date of delivery revision: 03rd October, 2023
Date of receipt revision: 02nd November, 2023
Date of approval: 20th November, 2023

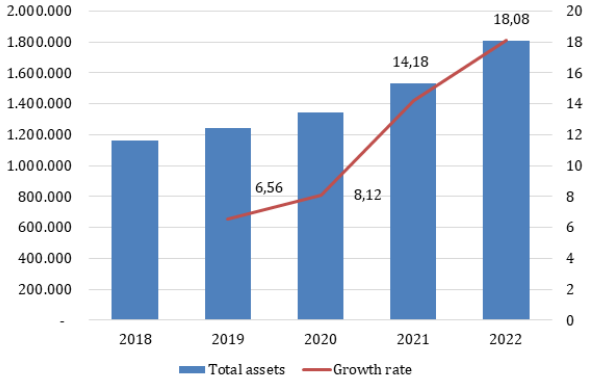
Tóm tắt: *Với tư cách là một trong những NHTM hàng đầu của Việt Nam, Ngân hàng thương mại cổ phần Công Thương Việt Nam (Vietinbank) đã nỗ lực hết mình trong quá trình hoàn thiện việc nâng cao hiệu quả hoạt động nhưng phải đảm bảo được tính an toàn. Bên cạnh đó, Vietinbank cũng cần phải nỗ lực hơn để chạy đua với các NHTM khác về công nghệ, thị phần và hiệu quả hoạt động. Từ đây, của bài viết sẽ đi vào tìm hiểu hiệu quả hoạt động của Vietinbank trong giai đoạn 2018 đến năm 2022. Trên cơ sở làm rõ về hiệu quả hoạt động cũng như một số đánh giá về hoạt động của Vietinbank, bài viết đề xuất một số kiến nghị nhằm nâng cao hiệu quả hoạt động của Viettinbank trong thời gian tới.*

• Từ khóa: *ngân hàng thương mại cổ phần, hiệu quả hoạt động, ngân hàng thương mại cổ phần Công thương Việt Nam.*

1. Overview of Vietinbank's business activities

As a key state-owned commercial bank, Vietinbank achieved impressive results from 2018-2022. The bank's total assets grew substantially at 55.32% during 2018-2022. In particular, total assets increased by 18.08% in 2022, marking the highest growth rate in the studied period.

Chart 1.1. Total assets of Vietinbank from 2018-2022 (VND million, %)



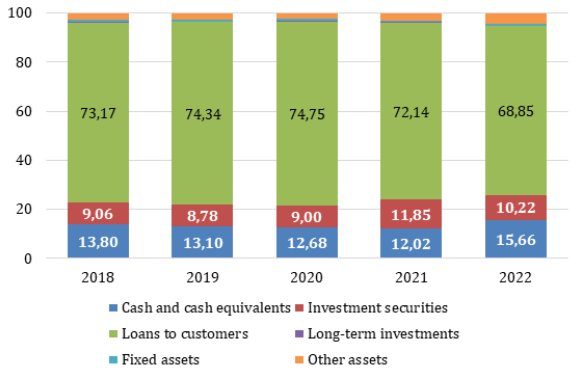
Source: Vietinbank financial statements over the years and author's calculations

This achievement was attributed to the steady growth across all asset components. Loans and advances to customers remained the largest component of the bank's total assets, accounting for 68.85% (2022) to 74.75% (2020) of total assets. Although its proportion of total assets declined during the period, loans and advances still maintained positive growth. Loans and advances increased most significantly by 12.69% in 2022.

** University of Economics, Da Nang University; email: baolph@due.edu.vn*

In 2022, cash and cash equivalents surged by 53.9% compared to 2021, lifting its proportion of total assets to 15.66%. The increase in cash and cash equivalents also strengthened the bank's liquidity. Additionally, other assets were also boosted during the period. The share of other assets in total assets improved over time, from 2.73% (2018) to 4.51% (2022). Other assets posted high growth rates of 40.48% in 2021 and 72.17% in 2022.

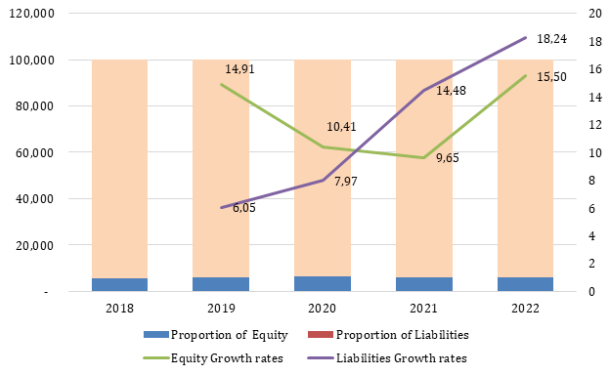
Chart 1.2. Asset structure of Vietinbank from 2018-2022 (%)



Source: Vietinbank financial statements over the years and author's calculations

The shift in Vietinbank's asset structure indicates adjustments in the bank's assets. The bank appears to be reducing its lending activities while increasing non-credit operations such as cash operations, investment and securities trading, and other assets.

Chart 1.3. Equity and liabilities structure of Vietinbank from 2018-2022 (%)

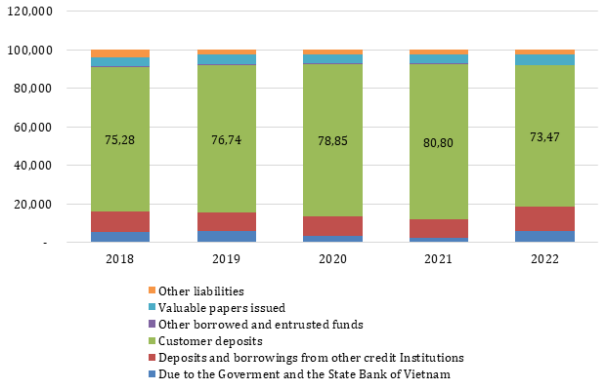


Source: Vietinbank financial statements over the years and author's calculations

In terms of capital structure, liabilities consistently accounted for the majority of the bank's total capital (over 93%), while equity only made up a modest share with a peak of 6.37% in 2020. The proportions of these two capital sources remained relatively stable with minimal fluctuations. This shows that like other commercial banks, Vietinbank has focused on raising capital from external liabilities, while equity serves to ensure the bank's safety.

In terms of growth, Chart 1.3 indicates a substantial increase in liabilities, rising from 6.05% in 2019 to 18.24% in 2022. This surge in liabilities was predominantly propelled by increases across various components, notably at the close of 2022: (1) amounts due to the Government and the State Bank (214.71%); (2) deposits and borrowings from other credit institutions (50.85%); (3) issuance of valuable papers (41.67%); and (4) other liabilities (16.72%). While customer deposits remained the largest component of liabilities (comprising over 73%), their proportion exhibited a declining trend towards the end of the period, dropping from 80.8% in 2021 to 73.47% in 2022 (Chart 1.4). Although the growth rate of customer deposits remained positive, it notably decelerated compared to the earlier period. In 2021, the growth rate of customer deposits stood at 17.32% compared to 2020 but decreased significantly to 7.52% by the end of 2022. These figures suggest that the bank is striving to reduce its dependence on customer deposits while actively seeking to increase funding from other credit institutions and through valuable paper issuance.

Chart 1.4. Liabilities structure of Vietinbank from 2018-2022 (%)



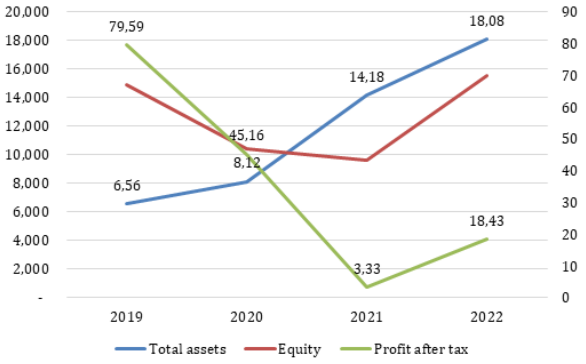
Source: Vietinbank financial statements over the years and author's calculations

With its increasing scale and rapid technological advancements, Vietinbank has effectively utilized

both modern and traditional distribution channels to reach customers. By 2018, Vietinbank had established the most extensive network of branches, transaction offices, ATMs, and POSs nationwide, covering all 63 provinces and cities in Vietnam. Presently, the bank operates 155 branches, nearly 1,000 transaction offices, 2,131 ATMs, and 48,394 POSs. Additionally, it provides various online payment channels and a Mobile App offering diverse authentication methods, including Hard Token/RSA cards, Soft Token/Soft OTP, SMS OTP, fingerprint recognition, among others. Furthermore, Vietinbank has expanded its reach by opening several branches in other countries within the region and worldwide. This extensive network has significantly contributed to the bank's ability to broaden its customer base.

2. Vietinbank's business performance

Chart 2.1. Growth rates of profit after tax, total assets and equity of Vietinbank from 2019-2022 (%)



Source: Vietinbank financial statements over the years and author's calculations

Chart 2.1 shows strong fluctuations in the growth rate of profit after tax (PAT). In 2019, the bank recorded an PAT growth rate of 79.59% versus 2018, while total assets and average equity only grew modestly at 6.56% and 14.91% respectively. In subsequent years, total assets and equity increased steadily year after year. By the end of 2022, total assets and equity grew by 18.05% and 15.5% respectively. In contrast, PAT growth plunged deeply in the next 3 years. Especially in 2021 amidst the Covid-19 impacts, the bank's PAT growth rate plummeted to just 3.33%. Although the bank's PAT recovered in 2022 after the pandemic, the growth rate only reached 18.43%. During this volatile period, Vietinbank practiced thrift and allocated resources for digital transformation and direct support for business operations. Within the general situation of Vietnam's banking industry during this period, despite slowing down, Vietinbank remained among the top 4 commercial banks in Vietnam with the highest return on assets in this period.

The fluctuations in the three control indicators have caused corresponding fluctuations in the indicators reflecting the bank's profitability, namely the Return on Assets (ROA) ratio and Return on Equity (ROE) ratio. The ROA represents the ratio of net income to total assets, indicating how much profit a bank generates from its total assets. On the other hand, the ROE represents the ratio of net income to shareholders' equity, indicating how efficiently a bank utilizes the funds invested by shareholders.

The significant fluctuations in Profit After Tax (PAT) resulted in volatility in both ROA and ROE. Specifically, the growth of PAT from 2018 to 2020 outpaced the growth in total assets and equity, leading to a steady increase in both ROA and ROE during this period. However, in 2021, the sharp decline in PAT also caused a decrease in ROA and ROE. As the PAT growth substantially decreased compared to the accelerating growth of total assets and equity, both ROA and ROE saw a slight decline in 2021 compared to 2020. Despite the recovery in PAT in 2022, its growth rate compared to total assets and equity resulted in ROA and ROE remaining largely unchanged from 2021.

Table 2.1. ROA and ROE of Vietinbank (2018-2022) (%)

Year	ROA	ΔROA	ROE	ΔROE
2018	0,45		7,84	
2019	0,76	68,53	12,25	56,28
2020	1,03	34,26	16,11	31,47
2021	0,93	(9,50)	15,18	(5,76)
2022	0,93	0,30	15,56	2,54

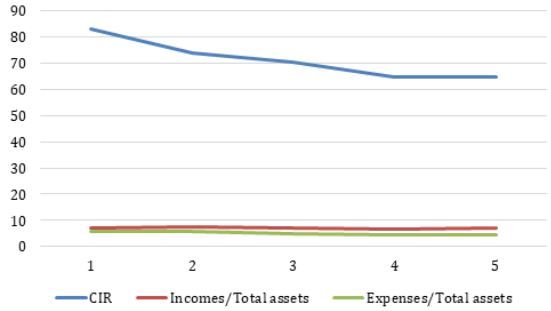
Source: Vietinbank financial statements over the years and author's calculations

Management efficiency ratios

Vietinbank's cost-to-income ratio (CIR) was consistently below 1 (above 60%), indicating that the bank's income exceeded its expenses. In 2018, this ratio was very high at over 80%, reflecting inefficient management as the bank had

to spend too much to generate profits. However, in subsequent years, Vietinbank made efforts to improve CIR with some positive results, reducing CIR to 64.66% in 2022.

Chart 2.2. Management efficiency ratios of Vietinbank from 2018-2022 (%)



Source: Vietinbank financial statements over the years and author's calculations

Financial safety and liquidity ratios

Table 2.2. Capital utilization efficiency of Vietinbank (2018-2022)

Year	Loans/deposits		Loans/total assets	
	%	Growth	%	Growth
2018	103,15		73,17	
2019	103,31	0,15	74,34	1,60
2020	101,27	(1,98)	74,75	0,56
2021	95,10	(6,09)	72,14	(3,50)
2022	99,67	4,81	68,85	(4,56)

Source: Vietinbank financial statements over the years and author's calculations

According to international practices, the LTDR of commercial banks normally ranges from 80% to 100%. From 2018 to 2020, Vietinbank's LTDR exceeded 100%, meaning that the bank faced difficulties in mobilizing capital in the primary market and had to increase funds from the secondary (interbank) market amid huge lending demand. The bank improved this ratio in 2021 and 2022 (below 100%), indicating progress in its lending activities.

Additionally, Vietinbank's LAR usually exceeded 70% from 2018 to 2021 – within the permissible level of 70-80% as per international standards. This ratio dropped to 68.85% in 2022. These figures show that Vietinbank has enhanced capital asset utilization efficiency in supplying capital to the market.

3. Overall assessment and recommendations

Overall, from 2018 to 2022, Vietinbank achieved strong growth in total assets and equity. The capital structure improved towards a more optimal composition over time. In 2022, Vietinbank implemented comprehensive solutions for efficient capital balance management, sustainable and stable capital mobilization, and flexible leveraging of domestic and foreign capital sources. Concurrently, the bank accelerated the shift in revenue structure by providing comprehensive financial solutions, enhancing product and service quality, especially non-credit offerings for key customer groups. During this period, Vietinbank focused resources on expenses directly serving business operations and digital transformation, while actively practicing thrift and improving governance.

Some recommendations:

Continue reviewing and efficiently managing operating expenses while promoting quality financial management and capital balancing.

Accelerate digital transformation by proactively deploying financial products and services on modern technological platforms, continuously updating to optimally meet customers' financial needs. Foster win-win partnerships with Fintechs, boost cross-selling, shift distribution channels, and apply artificial intelligence in governance.

Strengthen credit risk management efficiency, with a focus on promoting fee-based products, foreign exchange, guarantee, and CASA fundraising activities through ecosystem exploitation. Provide comprehensive financial solutions for customers.

Promote selective and healthy credit growth while ensuring safety and efficiency, focusing on production and business sectors to ensure capital supply for the economy. Concurrently, improve human resource quality by restructuring and enhancing the competence of personnel at all levels. Particularly, reinforce senior and middle-level personnel to improve management and operational efficiency.

References:

Circular No. 23/2020/TT-NHNN
Circular No. 36/2014/TT-NHNN
Vietinbank's financial statements from 2018-2022
Vietinbank's annual reports from 2018-2022

HUMAN RESOURCES TRAINING FOR THE LOGISTICS INDUSTRY IN THE CONTEXT OF DIGITAL TRANSFORMATION IN VIETNAM

PhD. Thai Bui Hai An* - PhD. Nguyen Thi Minh Hoa* - Nguyen Ba Nguyen**

Abstract: ***Digital transformation is the outcome of the 4th industrial revolution. The characteristic that distinguishes digital transformation from previous industrial revolutions is that, although all are based on technical foundations and technology, in the 4th industrial revolution, digital transformation has brought humans back to the center of innovation, with knowledge becoming dominant. Despite both the 4th industrial revolution and digital transformation originating from technology, among the decisive factors for the success of digital transformation (including human factors, institutional factors, and industrial factors), the human factor is the prerequisite and decisive factor. Without changes in human thinking and perception, digital transformation cannot occur. The digital transformation process in the logistics industry in Vietnam commences with the trend of transitioning from traditional business to digital platforms, considered an effective solution to help businesses penetrate and expand in the import-export market, thus promoting trade development. Consequently, there is a necessity for human resources in the logistics industry to adjust and adapt to this new situation. In this study, the authors aim to propose solutions for human resource training in the logistics industry within the context of digital transformation in Vietnam.***

• Keywords: *human resources, logistics human resources training, digital transformation.*

JEL codes: O15, I29, J49

Date of receipt: 22th October, 2023
Date of delivery revision: 23th October, 2023
Date of receipt revision: 20th November, 2023
Date of approval: 30th November, 2023

Tóm tắt: *Chuyển đổi số là kết quả và cũng là thể hiện nét đặc trưng của cuộc cách mạng công nghiệp lần thứ 4. Điểm khác biệt của chuyển đổi số so với các cuộc cách mạng công nghiệp trước là mặc dù đều dựa trên nền tảng kỹ thuật và công nghệ, nhưng chuyển đổi số trong cách mạng công nghiệp lần thứ 4 đã đưa con người thực sự trở lại vị trí trung tâm của sự đổi mới, tri thức trở thành thống trị. Trong các yếu tố quyết định cho thành công của chuyển đổi số (gồm yếu tố con người, yếu tố thể chế và yếu tố công nghệ), yếu tố con người là yếu tố mang tính chất tiên quyết và quyết định, bởi nếu không có thay đổi trong tư duy và nhận thức của con người thì không thể có chuyển đổi số. Quá trình chuyển đổi số trong lĩnh vực logistics ở Việt Nam bắt đầu từ xu hướng chuyển đổi từ kinh doanh truyền thống sang các nền tảng số và đây được coi là giải pháp hữu hiệu giúp các doanh nghiệp thâm nhập, mở rộng thị trường xuất nhập khẩu, thúc đẩy thương mại phát triển. Từ đó đặt ra yêu cầu đòi hỏi nhân lực trong lĩnh vực logistics cũng phải có những điều chỉnh và thay đổi cho phù hợp với tình hình mới.*

• Từ khóa: *nguồn nhân lực, đào tạo nhân lực logisitcs, chuyển đổi số.*

1. Current status of human resources supplied to the logistics industry in the context of digital transformation in Vietnam

Digital transformation is the process of utilizing data acquired from digitalization, followed by the application of technologies to analyze and transform that data, thus creating new value. In comparison to previous industrial revolutions, digital transformation in the 4th industrial revolution, although founded on technical elements and technology, has recentered humans in innovation, emphasizing the dominance of knowledge. While both the 4th industrial revolution and digital transformation originate from technology, the human factor stands as the prerequisite and decisive element among the crucial factors determining digital transformation's success (comprising human, institutional, and industrial factors). Without changes in human thinking and perception, digital transformation cannot transpire.

Digital transformation connects real-world entities digitally, via digital space. It enhances digital information and connections within that environment, reshaping societal development and labor organization methods. The crux of the 4th industrial revolution lies in intelligent production, evolving from advancements in digital technology bridging two interconnected worlds - the

** Academy of Finance*
*** CQ61/06.01CLC - Academy of Finance*

physical world people inhabit and the digital realm, housing digital versions of entities. Digital transformation encompasses various sectors, including digital government (such as online public services, open data), digital economy (e.g., digital finance, e-commerce), and digital society (e.g., education, health, culture).

In the logistics industry, as in many service sectors, human resources are a pivotal factor in business success. Vietnam's logistics service industry has experienced rapid growth, expanding from a few state-owned forwarding enterprises in the early 90s to over 300,000 enterprises with around 1.5 million employees (according to the Survey of Ho Chi Minh City Development Research Institute, 2018). However, most Vietnamese logistics companies are small to medium-sized. Statistics from the General Statistics Office reveal that 41.4% are micro-sized (less than 5 employees), 53.8% are small-scale (under 50 employees), 4.12% are medium-sized (under 300 employees), and only 0.7% are large-scale enterprises. Concerning the labor structure, workers in road, rail, and pipeline transport enterprises account for 60.1%; in warehousing and transportation support activities, 32.5%; waterway transport, 5.1%; postal delivery, 2.3%; and air transport, 0.02% (General Statistics Office 2019: Labor statistics in logistics enterprises).

Currently, the logistics industry faces a severe shortage of human resources. According to the Vietnam Freight Forwarding Association (VIFFAS), accurate statistics are unavailable for human resources in the field. The VIFFAS's member companies employ approximately 5,000 people, and around 5,000 others work in professional or semi-professional freight forwarding services. However, Vietnam's logistics human resources do not meet the quantity and quality requirements. The Vietnam Logistics Association (VLA) estimates that the industry's human resources meet only about 40% of its needs, despite a growth rate of 30% annually. The shortage arises from a scarcity of universities offering bachelor's or engineering degrees in Logistics and Supply Chain Management (Logistics & SCM). The Ministry of Industry and Trade's Vietnam Logistics Report 2020 highlights that, with a demand for about 20,000 people, there are only around 15 training facilities related to logistics, falling short of actual needs.

To address the demand for quality human resources in digital transformation for the logistics industry, universities are increasingly offering logistics and supply chain majors. Presently, among 286 universities, 30 offer this major. Some universities are adjusting their programs to provide high-quality education in English with foreign certifications (as per the Vietnam Logistics Report 2020, Ministry of Industry and Trade).

However, university-based logistics labor supply cannot meet the industry's demand amid rapid growth. Thus, most logistics human resources are short-term trained workers from training centers. These centers, due to their small scale, only supply a limited number of graduates annually and primarily focus on maritime transport and sea freight forwarding training. Consequently, businesses regard human resource development as the critical necessity in logistics activities, citing personnel shortage as the primary reason for high logistics costs. Insufficient human resources hinder the formulation of large-scale logistics project development strategies.

According to a survey by the Vietnam Logistics Research and Development Institute (VLI) in 2020, 60% of logistics businesses face difficulties due to limited human resources. Over the next three years, logistics service businesses will require up to 20,000 workers, while manufacturing and commercial businesses will need over 1 million employees with logistics expertise. However, high demand has left thousands of businesses struggling to find logistics workers. Job vacancies in the logistics industry within the next three years are anticipated in customs procedures, logistics administration, freight forwarding, warehouse operations, transportation, and IT. Positions in IT and forwarding in e-commerce are particularly high. To cut logistics costs, high-quality human resources are essential. Despite this, the survey assessed the skills of logistics workers at an average level. This is a concern, considering the dire need for trained human resources capable of executing professional skills for digital transformation.

Not only is there a shortage of logistics human resources, but there's also a deficit in quality. Survey results from the Ho Chi Minh City Institute for Development Research indicate that 36.3% of respondents perceive limitations in Vietnam's logistics human resources due to low professionalism, 24.2% highlighted a lack of high-quality human resources, 21.7% mentioned the absence of logistics officers in businesses, and nearly 19% reported universities not offering logistics majors. Among logistics businesses, 53.3% lack staff with professional qualifications and logistics knowledge. 30% of businesses have to retrain employees post-recruitment, and only 16.7% are content with their employees' professional qualifications.

In various sectors within the logistics industry, inadequacies in human resources vary. For management labor, most management and executive staff have seniority but lack updated management styles and knowledge. Service staff, predominantly university graduates, require enhanced professional qualifications and skills. Direct workforce employees often have lower

education levels, undertaking roles such as loading, unloading, warehouse tasks, and driving trucks. Their lack of industry-style work and reliance on physical strength over mechanical means pose challenges.

Regarding digital transformation levels in logistics, VLA notes that most businesses remain at the digitalization level-transferring operational data to electronic storage without the ability to access data and process orders on online platforms. The application of science and technology in logistics service enterprises is limited. Most Vietnamese logistics companies offer 2 to 17 different logistics services, focusing on delivery, transportation, warehousing, express delivery, and customs declaration services. Despite the application of different technology types by 50-60% of businesses, many are not compatible or suitable, with a general skepticism towards digital technology applications due to security, safety, and solvency concerns. Additionally, leaders and employees' reluctance to change represents obstacles in digital transformation for logistics businesses.

Furthermore, challenges exist in human resource development for digital transformation. The Vietnam Report 2019 identified several challenges hindering Vietnamese businesses from leveraging digital transformation opportunities. These challenges include cyber security risks, lack of skilled labor, absence of supportive policies, multiple overlapping priorities, and fear of change/internal resistance. Nearly 50% of respondents consider the lack of skilled labor as a significant challenge in implementing digital transformation, with language proficiency limiting access to new technologies. Another PwC Vietnam study on Industry 4.0 indicated a lack of understanding among workers regarding the necessary skills for digital transformation, with only 14% believing they and their employees have a clear vision of the skills needed.

To bridge the gap and ensure a robust supply of skilled human resources for digital transformation, collaborative efforts are required. Facilitating logistics and supply chain majors in universities is a positive step. However, meeting the industry's escalating demands remains a challenge due to limited training facilities and programs tailored to high-quality education in logistics. Consequently, most logistics labor stems from short-term training centers, with inadequate programs focusing primarily on maritime transport and sea freight forwarding. These inadequacies hinder logistics projects' large-scale development, impacting logistics businesses' strategic planning.

The shortage in logistics human resources is detrimental, with businesses facing difficulties in finding capable workers. Job vacancies are anticipated in customs procedures, logistics administration, freight forwarding, warehouse operations, transportation, and IT. This shortage significantly affects the logistics industry's digital transformation as businesses struggle to keep pace with the evolving technological landscape. Furthermore, the lack of skilled labor is compounded by the industry's lack of trust in digital technology applications, along with leaders' and employees' reluctance to adapt.

Additionally, the deficit in logistics human resources extends to quality issues, with limitations observed in professionalism, high-quality expertise, and logistics officer titles within the workforce. Shortcomings are prominent among management staff, service employees, and direct labor, presenting a varied range of inadequacies across different roles within the logistics industry.

The challenges in digital transformation and human resource development further include cyber security risks, lack of supportive policies, conflicting priorities, and internal resistance. However, the major hurdle for businesses is the scarcity of skilled labor, compounded by language barriers that limit access to new technologies and a lack of clarity regarding the requisite skills for digital transformation.

In conclusion, while Vietnam's logistics industry is rapidly growing, the shortage of skilled human resources poses a significant impediment to its digital transformation. Efforts in education and training, though progressing, are insufficient to meet the industry's burgeoning demands. Bridging this gap requires concerted action, including enhanced training programs, fostering specialized logistics majors in universities, and addressing challenges hindering digital transformation. Overcoming these hurdles is vital to ensuring that the logistics industry can thrive in the digital era and meet the evolving demands of the market.

2. Some suggested solutions for logistics human resource training in the current context of digital transformation in Vietnam

Within the scope of this research, the authors would like to propose some suggested solutions for logistics human resource training facilities and logistics service businesses in the current context of digital transformation as follows:

For logistics human resource training facilities:

Logistics human resources are formed and developed from many different sources, most are trained in the national education system with the core of higher education systems, which is the place to form and develop a team of logistics human resources, especially experts, managers, professional lecturers, leading engineers, highly skilled workers, and sufficient research capacity or master the transferred technology. Therefore, human resource training establishments need to:

(i) Unifying training programs between schools and businesses on human resources for logistics and supply chain management (SCM) such as: training objectives, contents, programs and methods; training time; training forms for each industry and profession; training system.

(ii) Developing standard training programs for the logistics & SCM industry: Clearly identify training majors for the logistics industry that are close to reality.

(iii) Developing training programs specifically designed for different levels of personnel including administrators, executive managers and employees.

(iv) Developing training programs to meet the needs of digital transformation, incorporating high-tech science and technology programs on logistics that are widely used internationally into training programs; Open more logistics & SCM training majors at universities towards digital transformation logistics; Applying the IoT network in transportation, warehousing, order management, labor management traffic management in logistics activities, applied informatics in the field of e-commerce in international freight forwarding operations, customs declaration and purchase and sale of goods, virtual reality technology (VR) in identifying and collecting goods in warehouses...

(v) Innovating interactive and practical training methods of new production models, innovating university administration, promoting the application of information technology and digital technology in management and teaching; Innovating teaching methods according to a hands-on applied approach consistent with the digital transformation logistics trend.

(vi) Investing in training equipment appropriate to the training program in the direction of updating with digital transformation such as automatic equipment and industrial robots.

(vii) Promoting training and practice links between universities and businesses in IT applications because the business sector is the unit that directly recruits and attracts this human resource as well as the business sector has better potential and strength than other schools in developing expertise and capacity for students and trainees at schools. Businesses can order universities to design management software or technology application products following the digital transformation logistics trend, thereby reducing investment costs for businesses, while improving practical skills for students. On the contrary, universities should invite experienced staff from businesses to participate in teaching and sharing knowledge and skills with students.

For logistics service businesses:

Businesses that want to successfully transform digitally must restructure their organization, change their thinking, working habits and corporate culture, while developing their human resources and effectively managing human resources.

(i) Changing thinking about digital transformation, starting from the leaders: Digital transformation in logistics activities is inevitable, the purpose of digital transformation is so that businesses can participate in a broader supply chain, bringing higher economic efficiency.

(ii) Choosing a digital transformation model suitable to the capabilities of the business and having a systematic plan for recruitment, training and using employees.

(iii) Collaborating with universities in recruiting and training human resources according to orders on digital transformation for each subject.

(vi) Periodically organizing professional testing sessions as well as training programs to improve qualifications for employees at affiliated universities, so that human resources quickly catch up with new market regarding digital transformation.

(v) Improving financial capacity through cooperation, merging with businesses with good financial potential or finding potential investors from whom financial resources can be invested to technology and high quality human resources.

(vi) Building a digital platform for the logistics service chain, helping to connect stakeholders in the chain (ports, carriers, agents, forwarding companies, warehouses...) to share data, Increase chain visibility and improve efficiency.

(vii) Promoting on-the-job training methods such as direct training at the workplace, helping to equip employees with the necessary knowledge and skills through actual work or through the guidance of a qualified employee until they become proficient in the job.

(viii) Sending employees to train (preferably abroad) to improve knowledge on logistics and supply chain to be equipped with the latest knowledge about logistics and SCM and to experience the professional, modern working environment.

(ix) Providing effective policies in attracting and appreciating talent from abroad with good income and remuneration, flexible and suitable working environment and working conditions.

References:

Central Institute of Management Economics (CIEM), Aus4Reform Program, 2022, Report Labor issues in digital transformation: Challenges and solutions.

Ministry of Industry and Trade, 2020, Vietnam Logistics Report 2020: Cutting logistics costs.

Ministry of Industry and Trade, 2021, Vietnam Logistics Report 2021: Developing logistics human resources.

SOME THEORETICAL AND PRACTICAL ISSUES ON MOTIVATING EMPLOYEES IN STATE ECONOMIC GROUPS

MA. Cao Thi Phuong*

Abstract: ***In the current period, human resources of enterprises play a very important role, which is the decisive factor for the success or failure of each enterprise. The issue of motivation in labor is one of the important and indispensable contents of human resource management in enterprises, it motivates employees to work enthusiastically to improve labor productivity.***

• Keywords: *labor motivation, employees, state economic groups.*

Date of receipt: 22th October, 2023

Date of delivery revision: 23th October, 2023

Date of receipt revision: 20th November, 2023

Date of approval: 30th November, 2023

Tóm tắt: *Trong giai đoạn hiện nay, nguồn nhân lực của doanh nghiệp đóng vai trò rất quan trọng, là yếu tố quyết định sự thành công hay thất bại của mỗi doanh nghiệp. Vấn đề tạo động lực lao động là một trong những nội dung quan trọng, không thể thiếu trong quản lý nhân sự trong doanh nghiệp, nó thúc đẩy người lao động hăng say làm việc để nâng cao năng suất lao động.*

• Từ khóa: *động lực lao động, người lao động, tập đoàn kinh tế nhà nước.*

1. Set the problem

In recent years, globalization and the industrial revolution 4.0 have had a strong impact on nation-states, on the social life of all classes, strata and individuals in society. In fact, globalization and the scientific and technological revolution are based on the knowledge economy and resources, so their impacts directly affect human resources in state-owned enterprises, typically state-owned economic groups (EEZs). That impact makes the workforce in Vietnam face many opportunities and challenges to show its position and importance to the country's reform and integration process. On that basis, clarifying theoretical and practical issues on motivating workers in the IA will help CITs have guidelines and measures that are both comprehensive, integrated and specific in order to motivate workers to develop in the coming time.

2. Some theoretical issues on motivating employees

The concept of labor motivation and employee motivation

Labor motivation is expressed through the specific jobs that each worker is undertaking and in their attitude towards the organization. This means that there is no universal labor motivation for all workers. Every worker who takes on different jobs may have different motivations to work harder. Voluntary motivation depends on the workers themselves, who often take the initiative to work hard when they do not feel any pressure or pressure at work. When they are actively and voluntarily employed, they can achieve the best productivity. Motivation can be understood as the motivation from within the subject (employee) or due to the influence from outside to the subject that makes them voluntarily make efforts, strive for the goal of completing the assigned work with the best results, thereby contributing to improving productivity, efficiency, the success of the organization.

In the view of Stee and Porter (1983), *"Labor motivation is the desire and willingness of workers to increase their efforts towards achieving organizational goals, the urge and persistence in the work process."*

Regarding *the concept of "Labor motivation",* there are also many scientists who define this term, the concept that is most interested: *"Labor motivation is the process of using an aggregate of policies, measures and management methods through financial or non-financial instruments to encourage, motivate and arouse the desire, self-discipline and voluntariness of employees so that they can make efforts and strive for the goal of completing the assigned work with the best results, thereby contributing to improving productivity, efficiency and success of the organization".*

** PhD student, Ho Chi Minh National Academy of Politics*

Types of labor motivation:

Instrinsic motivation: In his research, according to Deci, intrinsic motivation brings energy and persistence to action through self-satisfaction associated with effective willful action. Motivation involves a set of causes such as beliefs, opinions, values, preferences, and actions that are directly related. Accordingly, there are also different approaches to motivation based on focusing on the study of volitional behaviors, or non-volitary aspects, or both.

Extrinsic motivation: According to Ryan and Deci (2000), extrinsic motivation is associated with taking an action to achieve an outcome that has nothing to do with the action. As for extrinsic motivation, a certain behavior is performed not because of the behavior itself, but for another purpose. The end is no longer personal satisfaction or enjoyment of the activity itself, but things like rewards, goals, benefits that the individual aims to do something or to avoid punishment. This is the most fundamental difference between intrinsic motivation and extrinsic motivation. Extrinsic motivation can occur autonomously or involuntarily, depending on the individual's ability to choose, since there are extrinsic motivating activities that can occur as a consequence of external control. Extrinsic motivation is divided into four levels of autonomy as follows: Extrinsic adjustment; Internal adjustment; Uniform adjustment; Merge adjustment.

Intrinsic motivation and extrinsic motivation have a complex relationship with each other, there are external factors that can increase or decrease internal motivation. The author of Self-Determination Theory developed a review of 128 studies on the impact of external rewards on intrinsic motivation. They concluded that tangible external rewards reduce intrinsic motivation, while other intangible factors such as positive feedback increase intrinsic motivation. On the other hand, negative feedback also contributes to a decrease in internal motivation.

Calder and Staw (1975) published their research results and demonstrated that internal and external motivation interact with each other, influencing each other. In addition, there are many other studies showing that these two types of motivation can occur together and create positive effects on human behavior. Deci and Ryan (1985, 2000) suggest that external factors can increase internal motivation. The authors also recognize intrinsic motivation as an important construct in motivating people to perform specific tasks, while extrinsic motivation is viewed as a genuine external control or self-regulation. In summary, intrinsic motivation and extrinsic motivation are different, but in essence, both types of motivation are essential. These factors are indispensable in helping employees to be active and strive at work.

Methods to motivate employees

According to F. Angus, labor is a unique characteristic of man, and at the same time a particularly important basis for distinguishing man from the animal world. Labor is purposeful, conscious activity, towards a goal that is perceived and outlined before action, i.e. carrying out labor- embarking on activity/work. Work is a natural human need and the fact that workers do their jobs has become so obvious that we have long forgotten to ask ourselves "*What motivates workers to work"* in economic management in general. We seem more accustomed to questioning why people are head-scratching high mountains or committing suicide than finding motivational foundations for workers' daily work. So, in order to motivate workers, and what to pay attention to while implementing those methods is the content that needs to be studied next.

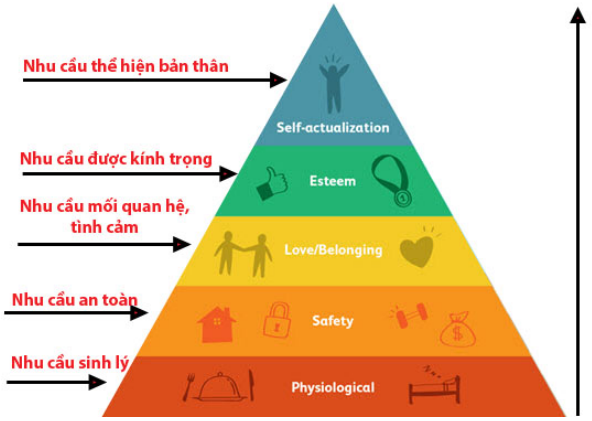
In many theories and practical examples, employee motivation is closely related to their performance. Research has also shown that this effect is determined by 3 main factors: Ability to work; working environment and motivation. Accordingly, the method of motivating employees is also built from the perspective of meeting the requirements of the above-mentioned factors. If workers lack the ability to work, it is the job of managers to find ways to conduct appropriate training courses to give workers the necessary skills and knowledge to give them more confidence to perform their duties. Or if the problem lies in the working environment, managers will have to reform that work environment in new ways to help boost efficiency from their employees. This is a higher-level solution that requires a fairly comprehensive change in terms of organization, corporate culture and related facility conditions. Finally, among the above 3 groups of factors, the most important is still the issue of labor motivation. At that time, managers face more complex and challenging solutions, and the best source of information is from the employees of the organization. Employees should be consulted on a regular basis about what motivates and maintains their motivation, such as job requirements, compensation, work environment, or recognition and respect for their contribution to the organization.

Criteria for evaluating results to motivate employees

Maslow's theory of the hierarchy of needs (1943) can be considered one of the most widely accepted

theories of human motivation in research circles while there is little research evidence to support it. This is also the biggest paradox that A. Maslow's theory creates. In their 1985 book, Patzig and Zimmerman pointed out that Maslow found that 85 percent of physiological needs, 70 percent of safety needs, 50 percent of social needs, 40 percent of respected needs, and 10 percent of self-actualization needs were met in American society. The popularity of this theory is understandable by the clarity and ease of application of the 5 scales that A.Maslow has given. These are also the scales of criteria that help us assess the labor motivation of workers in IWs in Vietnam.

Figure. Floors in A.Maslow's tower of needs



Physiological factors

The lowest human needs relate to motivating factors to satisfy basic biological desires of the species, such as the need for air, food, water, and shelter. These needs are certainly considered the most basic, essential needs without which people can become sick or even die.

Businesses can have many ways to meet these types of needs of workers, but the simplest way can be seen is to pay salaries and monetary bonuses to employees to buy food, drink and accommodation for themselves. However, businesses also need to be aware that there are many ways to satisfy those physiological needs of employees beyond paying wages and bonuses, such as stipulating tea breaks or opportunities to rest to regenerate labor. Thus, with regard to the specific situation of CWs that we are studying, the physiological motivation factor for employees can be summarized in the following main issues to consider: Financial salary and bonus: referring to the periodic income of employees by month/quarter/year and bonus level, average income level, and gross income; working space: referring to clean sanitary conditions, airy air, decoration stimulating the spirit of creativity; Facilities: referring to modern equipment, comfortable working places, comfortable places to rest and eat, places to play and exercise easily.

Safety factors

According to the theory proposed by A. Maslow, when physiological needs are met at a relatively satisfying level, people will arise new needs at a higher scale, called the need for safety. This need is associated with the desire of workers to work in a safe and stable environment psychologically and physiologically, away from risks and dangers to themselves.

Businesses can meet this demand of workers in many different ways, such as they can protect their employees from environmental risks by equipping them with necessary firefighting equipment and security equipment. Safety and hygiene in the workplace. By offering health, occupational disease and disability insurance programs, businesses help increase certainty in ensuring that employees are not affected financially when unfortunately sick or sick. The motivational factor of safety for workers can be summarized in the following issues: Safety at work: referring to qualified working equipment, proper protective equipment; Job stability: refers to the guarantee of long-term positions with predictably maintained income; Trade union activism: refers to the care of the spiritual as well as material life of workers, protecting workers by fighting for the implementation of policies that benefit them.

Social factors

Maslow sometimes called this social need for love because after people have met the previous two levels of needs, they begin to have more desire to love, care and belong to a relationship of ownership.

Enterprises often organize social activities such as parties, picnics of the unit to meet the needs of employees. In addition, the organization of sports, cultural and cultural activities within the enterprise also gives employees the opportunity to satisfy their social needs when they can exercise and participate in collective games with colleagues who have worked hard with them before. The social motivation factor for employees can be summarized in the following main issues to consider: Relations with colleagues: referring to the interaction and cooperation in work between the department and the organization, extracurricular activities related to team building; Relationship with superiors: refers to concepts related to power gaps in the enterprise, the help, direction and attention of superiors to subordinates; Relations with the community: Refers to community-related movements such as public and charitable activities that workers have the opportunity to participate in.

Factors of being respected

According to A. Maslow, not only do we need to be liked by someone on a social level, but we also need to gain their respect and acceptance. In other words, workers also have a need for respect, rooted in their achievements and being recognized and appreciated by others. The motivation factor for respect for employees can be summarized in the following key issues: Current position: refers to the responsibilities and powers assigned to them by the business or corporation, or simply refers to the resources that the individual is assigned control; Recognition of the organization: referring to awards and titles that enterprises or corporations give to individual employees to certify an achievement, or the privileges and privileges that only that employee can do when they have achievements in work of a special type; Respect of colleagues: mention the support of ideas and views for employees from colleagues in the enterprise, the respect for personal privacy, expertise of colleagues for that employee.

Factors of self-improvement

Even though all of these needs are fulfilled, we sometimes feel that a certain dissatisfaction will arise in the future if the individual is not allowed to do what is right for him/herself. This means that if workers want to realize themselves, they are interested in what they can do and want to do it. At that time, they will take full advantage of their creativity and energy to make them a valuable asset to the organization they are contributing to. This is the motivational factor of self-improvement, a requirement at a higher level according to A. Maslow.

In order to satisfy this demand of workers, enterprises must also think about creating conditions for workers to satisfy previous lower-order needs in order to have a premise for achieving this highest demand, which can be summarized in the following key issues to consider: Learning opportunities; opportunities for advancement; professional relevance.

3. Some contents on motivating employees in IWs

Factors affecting labor motivation

Factors belonging to the enterprise: Development goals and strategies of the enterprise; The leader's perspective on the issue of motivation; Production and business situation and results; Labor characteristics:

Factors that belong to the individual employee: Each employee in the IA when establishing industrial relations carefully calculates and considers the enterprise he will work for and stick with. What purpose will each individual clearly define the purpose of applying for a job at that corporation? The common of employees when entering corporations is wages, or income. However, not all put public money first, there may be other goals such as: high cultural environment; to go abroad, to be admired by society. Therefore, the motivation of labor for those who define labor goals in different IA corporations is different.

Personal needs: Different individuals will have different physical and spiritual needs. Some people will put salary and bonus as the most important when they join the organization, but others will think that the ability to assert themselves is important. So that the motivation of each individual is different. The more people you organize, the harder it is to create motivation.

Personal goals: Each employee who joins the organization sets his or her own personal goals. They exist in the organization to accomplish that goal. If the goals they set are too far-fetched, they will cause disappointment later on, when they realize their expectations for the organization have not been met. On the contrary, there will be those who set their goals too low. Therefore, when they join the organization, they find it not difficult to achieve the goals they set. This will prevent employees from reaching their full potential at work.

State policies and laws on labor: State legal policies on labor are a whole of many areas related to labor and motivate workers. In addition to legal policies on economic sectors, the ownership regime of enterprises also has a series of legal policies on labor contracts or cadres, civil servants and employees in state-owned enterprises. Closely related to creating motivation for employees in state-owned economic groups are: Laws and policies on the field and geographical area of labor: air, sea, island, underground; Toxic properties: polluted dirt wall environment, noise wall environment, quiet environment, magnetic environment, anaerobic environment; Legal policies on occupational nature related to occupational diseases; Legal policies on labor protection and safety

Socio-political and economic conditions of the whole country and localities: This is a major factor affecting the issue of motivating employees in the organization. Economic factors such as economic cycles, living standards, inflation, unemployment... or factors of socio-political stability to influence the organization. Therefore, the organization needs to adjust its policies to best suit the economic situation of the organization but still ensure the stability of work and income of employees.

Characteristics and structure of the labor market: Determine the relationship of labor supply and demand

in general and specific labor market supply and demand: AI labor, algorithm writing labor, airplane pilot labor, brain surgery doctor labor, etc.

This is a factor that indirectly influences motivation in the organization. If the labor market is overwhelmed with a certain type of labor, workers of this type in the organization will feel less "safe" because they feel they are in danger of losing their jobs. Individuals will be more motivated to work with the aim of keeping a job. Conversely, when a certain type of labor is scarce in the market, workers in that group will have more opportunities to find new and better jobs.

Industry position: Industry position has a very important impact on the labor motivation of workers. When a certain industry has a high position, the attraction of that industry to human resources will also be high, workers here will have to work harder to avoid being fired. On the other hand, when working in high-status industries, employees will have satisfaction because the work they are doing is the desire of many others.

Motivational policies of other organizations: In the current dynamic labor market information system, organizations with good motivational policies will gain many advantages in the market. In order to compete with these competitors, organizations need to have motivational policies based on inheriting the strengths of their labor motivation policies and those of other organizations, and come up with new and more innovative policies.

Stakeholders to motivate workers in the IA

Role of the State: The State plays an important role, providing mechanisms and policies for the management of CITs and issues related to workers working for CITs. Legal documents issued from the legislative and executive agencies of the State are the basis for CWs to carry out the work of remuneration, occupational hygiene and safety and related regimes for employees. Accordingly, the State's management agencies exercise supervisory power to keep the above activities in accordance with the prescribed laws. At the micro level, the State, especially the Government, has the full right to appoint and reappoint managerial personnel to represent the State owners in the management of production and business activities in general of corporations and the motivation for employees in particular.

In order to motivate workers in IWs, enterprises need to have certain resources to invest in labor motivation criteria. Article 36 of Decree No. 69/2014/ND-CP on EIA shows that the State performs the role of owner of CITs through parent companies in these corporations. Moreover, Article 1 of Decree No. 99/2012/ND-CP on assignment and decentralization of the implementation of rights, responsibilities and obligations of state owners with respect to state capital invested in enterprises also affirms that the Government is the highest administrative agency, unified and performs the owner function for state-owned enterprises. According to decentralization and decentralization, the Ministry of Finance, the Ministry of Planning and Investment, the Ministry of Home Affairs and the Ministry of Labor, War Invalids and Social Affairs will help the State supervise the plan and capital invested in the personnel work of CITs to create motivation for employees at enterprises belonging to these groups.

The role of strategic managers in motivating employees at state-owned economic groups: According to Decree No. 69/2014/ND-CP, strategic managers in EEZs can be identified as members of the members' council, controllers, general director, deputy general director and chief accountant of the group. These groups of strategic managers will act on behalf of the State to exercise rights and responsibilities for production and business activities in the most direct way. Accordingly, they themselves will decide on the strategy as well as the production and business plan, development investment of the group within 5 years with the internal management regulations of the enterprise related to salary, bonus, remuneration and working conditions of employees; At the same time, strategic managers also perform strategic tasks on arranging and renovating enterprises related to the position and employment of employees in the organization (Article 14, Decree No. 99/2012/ND-CP). Thus, we can see that strategic managers contribute to drawing up a common long-term vision for the organization, implementing the State's guidelines and guidelines in production, business as well as human resources directly to contribute to creating labor motivation for employees by orientations, his strategy.

The role of functional managers in motivating employees at state-owned economic groups: Functional managers in IWs are the remaining managers in functional departments, working with employees directly and indirectly to bring production and business efficiency to the group. Therefore, this is the most direct object of management that contributes to the motivation of workers. Functional managers are responsible for implementing the directions and production and business strategies from higher managers, so they are directly responsible for the labor productivity of employees in their department. The role of functional managers is to create a positive working environment that affects the working spirit of employees, helps employees at work

and cares about the lives of subordinate workers. That will create a good working motivation, bring the ability to improve labor productivity and ultimately production and business efficiency for the corporation.

The role of socio-political organizations, mass organizations at state-owned economic groups in motivating employees in the group: Article 6 of Decree No. 69/2014/ND-CP emphasizes the existence of Party organizations and socio-political organizations in CWs. This can be considered as a peculiarity of CITs in Vietnam. In addition to the Party organization with orientation for the entire production and business activities of the Group, the grassroots trade union organization is the most representative of the socio-political organization operating in the CITs. According to the Trade Union Law No. 12/2012/QH13, a trade union organization is an organization representing employees, standing up to take care of and protect the legitimate rights and interests of employees, at the same time supervising, inspecting and inspecting the recruitment and employment process of CITs and propaganda, mobilize employees to improve themselves, strictly comply with working regulations and other provisions of law (Article 1). Therefore, we can recognize the great role of Party organizations and grassroots trade unions in motivating workers and monitoring that motivation process in IWs to ensure objectivity and fairness in motivating workers.

Criteria for evaluating the motivation of employees in state economic groups.

Motivational performance assessment is the process of assessing the conformity between motivational policies and the results achieved from those policies. But direct assessment is a very difficult thing, so it can only be evaluated through indirect indicators such as:

Results of work performance: Working motivation has a great influence on the morale and working attitude of employees, thereby affecting the quality and efficiency of work. To create good motivation, employees will have positive behavior in all activities of the organization; Evaluation of work performance is mainly based on labor efficiency. Labor efficiency is a change in the productivity of labor quality.

Working attitude of employees: Good motivation will impact both workers' attitudes and behaviors in a positive way. Criteria that can be used to evaluate the degree of change in workers' behavior include: the level of enthusiasm of workers increased compared to before motivation; the change in attitudes of workers when accepting jobs and performing jobs compared to before the introduction of motivational policies.

The working attitude of each employee is shown day by day, hour by hour at the enterprise itself. The working attitude of employees also shows how satisfied they are at work. Employee satisfaction surveys ie: Know the needs of employees to apply appropriate HR policies; know the views of employees on activities in the organization; Evaluate the determinants of employee engagement; improve existing problems of the organization in operations, personnel policies, industrial relations...

Sense of discipline: Good motivational policies will be those that receive the consensus and support of all members of the organization.thereby also helping the organization eliminate disagreements, or disobedience that is the cause of undisciplined employees involuntary. Criteria that can be used to assess the sense of disciplinary observance of employees such as: number of violations, level of violations; the number of people who violate the rules and regulations of the organization.

The level of attachment of employees to the organization: Creating good motivation will encourage employees to work more diligently and have less thoughts of quitting their jobs and volunteering to stick with the organization for a long time. The criteria to evaluate the level of attachment of employees to the position such as: the number of employees applying for annual leave, the number of employees applying for leave before reaching retirement age .....

Employee satisfaction: Satisfaction is an abstract and difficult metric to measure accurately, it can only be evaluated relatively. Employee satisfaction can be investigated through questionnaires and interviews,... according to the criteria of salary, bonus, welfare, working conditions,... If the employee feels satisfied, then conclude that the employee is motivated to work and vice versa. If they feel dissatisfied, it means that the company's motivational work is ineffective and needs to be corrected.

References:

A.H. Maslow, (1943), A Theory of Human Motivation, Psychological Review 50.

Dao Phu Quy (2010), A.Maslow's theory of needs with motivating workers. Journal of Science and Economics, Economics and Business.

Ahsan A.Khan, Sadia Ajmal (2015), Role of Management in Motivating Labor to Improve Labor Productivity. Journal of Advanced Management Science, 3(3), pp. 179-185.

Maslow (1943), A theory of human motivation. Psychological Review, Vol. 50, pp. 370-396.

Deci et.al. (1999), A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. Psychological Bulletin, Vol. 125, pp. 627-668.

Decree No. 69/2014/ND-CP on TKTN and State Corporations

Decree No. 99/2012/ND-CP on assignment and decentralization of the implementation of rights, responsibilities and obligations of state owners with respect to state capital invested in enterprises.

EXPORTING VIETNAMESE GOODS TO THE RUSSIAN FEDERATION: CHALLENGES AND SOLUTIONS

PhD. Nguyen Dinh Hoan*

Abstract: ***The Russian Federation has been one of Vietnam's traditional export markets since the 1990s. Vietnam's main export products to the Russian Federation market include vegetables, fruits, coffee, pepper, and seafood, products and garments. However, Vietnam's export turnover to the Russian Federation market is quite small in Vietnam's total export turnover. The article analyzes the current situation of Vietnam's goods exports to the Russian Federation in the new context, while pointing out challenges and causes of limitations, thereby suggesting some solutions to promote exports. Exporting Vietnamese goods to the Russian Federation.***

• Keywords: *export, products, Vietnam, The Russian Federation.*

Date of receipt: 22th October, 2023
Date of receipt revision: 20th November, 2023
Date of delivery revision: 23th October, 2023
Date of approval: 30th November, 2023

Tóm tắt: *Liên bang Nga là một trong những thị trường xuất khẩu truyền thống của Việt Nam ngay từ những năm 1990. Các mặt hàng xuất khẩu chủ lực của Việt Nam sang thị trường Liên bang Nga bao gồm rau quả, cà phê, hồ tiêu, thủy sản và các mặt hàng may mặc. Tuy nhiên, kim ngạch xuất khẩu của Việt Nam sang thị trường Liên bang Nga ở mức khá nhỏ trong tổng kim ngạch xuất khẩu của Việt Nam. Bài viết phân tích thực trạng xuất khẩu hàng hoá của Việt Nam sang Liên bang Nga trong bối cảnh mới, đồng thời chỉ ra những thách thức và nguyên nhân của những hạn chế, để từ đó gợi ý một số giải pháp nhằm thúc đẩy xuất khẩu hàng hoá của Việt Nam sang Liên bang Nga.*

• Từ khóa: *xuất khẩu, hàng hoá, Việt Nam, Liên bang Nga.*

1. Current status of Vietnam's goods exports to the Russian Federation in recent years

Regarding export turnover of goods.

When the FTA Vietnam - Eurasian Economic Union took effect, the growth of Vietnam's export turnover to the Russian Federation had strong and stable growth. The growth of Vietnam's export turnover to the Russian Federation in the period 2016 - 2022, in addition to the reason that the Russian Federation's economy began to recover after the financial crisis, partly comes from the Vietnam FTA - Eurasian Economic Union. The Vietnam - Eurasian Economic Union FTA has helped export goods from Vietnam to this market have better prices, thereby increasing export turnover through the "trade creation" mechanism.

Table 1. Proportion of goods export turnover of Vietnam - Russian Federation in the period 2016 - 2022

Criteria	Export turnover to the Russian Federation (Billion USD)	Total export turnover of Vietnam (Billion USD)	Proportion (%)
2016	1,62	176,6	0,92
2017	2,17	213,8	1,01
2018	2,44	243,5	1,00
2019	2,72	264,2	1,03
2020	2,85	281,5	1,01
2021	3,2	336,31	0,95
2022	1,55	371,3	0,41

Source: Ministry of Industry and Trade, 2023

Despite high growth in the period 2016 - 2020, Vietnam's export turnover of goods to the Russian Federation only accounts for a relatively small proportion of Vietnam's total export turnover. Specifically, in 2016, Vietnam's export turnover of goods to the Russian Federation only accounted for about 0.92% of Vietnam's total export turnover of goods. In 2019 and 2020, this rate increased to 1.03% and 1.01%, respectively. In 2021, Vietnam's export turnover to the Russian Federation is

* *Academy of Finance*

significantly lower than Vietnam's total export turnover. Meanwhile, Vietnam's export turnover to other large economies accounts for a relatively high proportion such as the United States (27.35%), EU (14.2%), and China (17.05%), Japan (6.82%). This comes from many reasons such as: The ability of Vietnamese enterprises to penetrate the Russian Federation market is still limited, export support activities of Vietnam has not maximized its effectiveness due to objective difficulties in geography, culture, language, and politics. Language barriers, geographical distance, and many problems with immigration procedures for businesses also directly impact commodity prices and transportation, limiting Vietnam's exports to the Russian Federation.

Regarding export market share

In 2016, the import turnover of the Russian Federation market was 191.5 billion USD, of which, imports of goods from Vietnam were nearly 1.62 billion USD, equivalent to a proportion of 0.85% and ranked second. 13 of the countries export goods to this market. By 2020, the Russian Federation's import turnover of goods will reach 231.7 billion USD, while imports from the Vietnamese market will reach 2.85 billion USD, equivalent to a proportion of 1.23%, and ranked 12th among countries exporting goods to this market.

Table 2. Market share of Vietnamese goods exported to the Russian Federation market in the period 2016 - 2022

Criteria	Export turnover to the Russian Federation (Billion USD)	Import turnover of the Russian Federation (Billion USD)	Market share (%)
2016	1,62	191,5	0,85
2017	2,17	238,4	0,91
2018	2,44	248,7	0,98
2019	2,72	254	1,07
2020	2,85	231,7	1,23
2021	3,2	293,4	1,1
2022	1,55	259,1	0,6

Source: Ministry of Industry and Trade, 2023

With the steady growth of Vietnam's export turnover to the Russian Federation market, Vietnamese goods increasingly account for a larger proportion of imported goods in the Russian Federation market, especially in period 2017 - 2022 when the Vietnam - Eurasian Economic Union FTA takes effect. However, Vietnamese goods only account for about 1% of the import turnover of this market. This shows that the potential of the Russian Federation export market is still very large for Vietnamese export businesses, especially for businesses that take advantage of the Vietnam - EAEU FTA.

Vietnam's export turnover of goods to the Russian Federation generally maintains stable growth, but the export turnover of some key products during this period tends to be unstable or gradually decrease. Specifically, groups of aquatic textiles and garments and products such as coffee and cashew nuts experienced a decline in export turnover during this period. This is due to the difficulties of the Russian economy in 2015 and 2016 leading to a decrease in import turnover and in the last 3 years, although the import turnover of these commodity groups has grown again, the speed Growth is still quite slow.

Although in some key products, Vietnamese goods occupy a large market share in the Russian Federation market such as pepper, cashew nuts, and coffee, the market share of Vietnamese goods in general in the Federal market is Russia is still at a very low level, only about 1%. This is because the above products only account for a small proportion in the Russian Federation's import structure, while the products with large import turnover of the Russian Federation are not strong products of Vietnamese exports.

There is no diversity in the structure of Vietnam's export goods. The main export product groups are agricultural products, aquatic products and textiles, accounting for nearly 50% of Vietnam's export turnover to this market. In these product groups, product diversity is not high. For example, with agricultural products, coffee, cashew nuts, pepper and rubber account for 80% of the export turnover of this product group. Due to the lack of diversity in products, although the market capacity of the Russian Federation is still quite large, Vietnamese businesses without a diverse product strategy will still face many difficulties in accessing the market.

2. Challenges posed to Vietnam's export goods

Firstly, the ability of Vietnamese enterprises to penetrate the Russian Federation market is still limited. With Vietnamese agricultural products exported to the Russian Federation, the Government has done a good job negotiating for the Russian Federation to reduce import taxes for Vietnamese exported goods. However, negotiations to gain recognition for quality management, food safety

management and animal and plant quarantine are still limited. Therefore, although many products have been reduced to 0% tax by the Russian Federation, Vietnamese agricultural products are still not allowed to be imported into the Russian market.

Secondly, the capacity of Vietnamese enterprises to participate in international trade is still limited. Despite many efforts, due to financial capacity, Vietnamese businesses have few conditions to participate in specialized fairs and exhibitions in the Russian Federation markets. Conducting surveys and building market access strategies requires financial investment while most Vietnamese businesses are small and medium enterprises. Not all Vietnamese businesses can proactively do it by fully understanding and grasping the regulations of importing countries, especially small and medium-sized enterprises.

Thirdly, difficulties due to competitive pressure. Some businesses exporting traditional Vietnamese products to the Russian Federation in fields such as agricultural products, fisheries, and garments always face great competition from businesses from other countries in the bloc. ASEAN such as Thailand, Malaysia, China and India. Vietnam's main competitor in the Russian Federation market with a clear advantage in price is China for consumer goods, textiles, and footwear; is Thailand for seafood, rice, fruit and India for agricultural products, especially pepper and rice. Currently, China occupies a large market share in the consumer goods industry in the Russian Federation, with fierce competition in selling prices.

Fourthly, Vietnam's export support activities have not been maximally effective. New Vietnamese goods are entering the direct distribution market in the Russian Federation. Trade promotion activities are generally not uniform and synchronized from production to marketing and market penetration in the Russian Federation. Although accessing the market to find new customers and introduce products through trade promotion activities such as fairs and exhibitions has been implemented, it is still limited in scale and form of implementation. . Funding for trade promotion is still low compared to the task of maintaining and developing markets and business needs; The proportion of Vietnam's total export turnover is lower than the average of many countries in the region.

Fifthly, objective difficulties in geography, culture, language, and politics. Language barriers, geographical distance, and many problems with immigration procedures for businesses also directly impact commodity prices and transportation, limiting Vietnam's exports to Russia. Difficulties in protection trends and high standard regulations in import markets such as quite strict technical regulations with the purpose of protecting human health, protecting the environment, and sustainable development; High protection policy for domestic agricultural production; new regulations on quarantine testing and strict inspection of food hygiene and safety of agricultural and aquatic products exported by Vietnam; Strict and complex requirements on packaging, markings, and language on packaging; Anti-dumping and anti-subsidy tools are used frequently.

Sixthly, the role of industry associations in supporting market understanding, promotion and connection between businesses of the two countries is currently very limited. Facing increasingly diverse and strict requirements for market requirements, consumer trends and business culture as well as non-tariff barriers, import and export procedures in the Russian market and other countries In the Asia-Europe economic union, industry associations need to be more proactive in improving operational efficiency to support businesses and investors of the two countries, especially participating in protecting the interests of the two countries. Enterprises that produce, trade and export to this market.

Seventhly, the recent international economic relations environment is not favorable for import and export activities, especially disruptions in the global supply chain affected by the Covid pandemic.

3. Some recommendations to promote the export of Vietnamese goods to the Russian Federation

For the enterprises

Firstly, promote trade and investment promotion activities in the Russian Federation.

Promoting trade and investment promotion programs in Russia aims to inform the business community of other countries about the opportunities and advantages of Vietnam's business and investment environment, thereby developing trade relations, attract foreign investment in key areas; take advantage of source technology and

modern technology to remove bottlenecks that may hinder some Vietnamese industries from taking advantage of the EAEU; At the same time, continue to strengthen Vietnam's position, role and image in the international arena.

To build a brand for their products, the prerequisite is that businesses must meet the requirements for product quality, epidemiological hygiene, and ensure sustainable development... Then promote this. through messages, slogans, product introductions, displays, cultural festivals, and advertisements posted on the media.

Secondly, increase the added value of products exported to the Russian market.

For many years, Vietnamese products exported to Russia have mainly been minimally processed products with low value and insignificant added value. Therefore, although the volume of exported goods is large, the value quota is not high, efficiency is low. When the Trade Agreement between Vietnam and EAEU takes effect, many manufacturing industries will have imported raw materials at cheaper prices along with attracting investment to improve production levels. Vietnamese enterprises should take advantage of this opportunity for deep processing, creating export products with higher added value. Enterprises need to actively receive modern technology transfer from abroad, and at the same time train workers to effectively operate modern equipment and machinery technology. Businesses need to apply international standards such as ISO 9000, ISO 14,000, HACCP, SA8000... to constantly improve product quality. Besides, each enterprise needs to have a dedicated fund for research and development. The value added to the product also needs to be creative and different from competitors to have its own identity, for example, making the product have many features and uses, that is, increasing the value of use. value increases and there is more added value. Thus, the product will have higher competitiveness.

Thirdly, improve production capacity and product competitiveness.

Enterprises need to review and adjust business strategies and structures in accordance with domestic and international market needs on the basis of researching and applying appropriate modern and advanced technology to production processes and improving the quality of their products. High quality raw materials, rationalization of production; Promote market research, pricing, distribution, trade promotion, people and public relations... At the same time, promote innovation and scientific and technological development in business operations. This is one of the solutions to improve productivity and efficiency, creating conditions for businesses to expand markets and improve product quality. Each type of business needs to have its own orientation, from financial potential to production technology.

Improve the competitiveness of businesses and export products on the basis of appropriate business strategies, innovate business methods, strengthen the potential of businesses and develop domestic and foreign links. Enterprises actively and proactively participate in the process of international division of labor, participate in production networks, regional and international distribution networks, and participate in the global value chain. It is necessary to accelerate the process of digital transformation and business on the digital technology platform of enterprises. Develop a variety of both traditional official export methods and modern export methods. In particular, it is necessary to promote the application of cross-border e-commerce and participate in world e-commerce platforms.

For the State

The Government continues to build and improve the legal system and trade policies to fully implement commitments in the FTA according to the set roadmap, improve the quality and effectiveness of implementing legal documents and Build a national standards system consistent with international standards according to commitments in the FTA to promote production activities that meet product quality requirements and improve competitiveness, creating brands. Vietnamese products will be reputable when exported to the EAEU and Russian markets in the near future.

Continue to reform and simplify administrative procedures and issue licenses related to import and export activities. Thoroughly apply the single-window mechanism and shorten customs clearance time, creating favorable conditions for businesses and import-export of goods. In the process of implementing and reviewing commitments in the agreement, Vietnam and the EAEU need to agree to negotiate and remove inadequacies to create favorable conditions for businesses from both sides

to exchange trade and penetrate the market. each other's markets more effectively, the parties can negotiate to expand the agreement's commitments on the basis of mutual benefit.

At the same time, the Government needs to have policies to support businesses participating in export activities. When exporting goods to Russia and EAEU countries, Vietnamese businesses often have to accept deferred payment. Therefore, businesses often encounter difficulties in lacking capital for export activities. To overcome this situation, it is necessary to provide export credit through the commercial banking system. Expanding the right to grant export credit to domestic exporting enterprises of commercial banks will create conditions for improving the financial capacity of these enterprises. At the same time, banks' policy of converting from import lending to export investment lending contributes to improving the capital utilization ratio. Regarding interest rate policy, the Government needs to have a flexible interest rate adjustment policy, helping export enterprises boldly borrow capital to develop export production and business, lower costs thanks to scale advantages, and improve competitiveness of Vietnamese products in the Russian and EAEU markets.

In order to reduce logistics and transportation costs due to the impact of the geographical distance between Vietnam - EAEU and Russia, Vietnam needs to continue investing in hard and soft infrastructure such as highway systems, seaports, synchronize airports and reform related administrative procedures by delivering online public services at levels 3 and 4. At the same time, Vietnam also needs to carry out synchronous planning and investment in logistics systems of economic regions. key economies, managing port costs and freight rates, ensuring reasonable costs, taking into account support for export businesses to reduce transportation-related costs to promote exports to this market.

The Ministry of Industry and Trade needs to continue negotiating with Russia and EAEU countries in removing defense mechanisms for some products that Vietnam has advantages in such as textiles and garments and wooden furniture in the near future to promote exports to Russian market. At the same time, the Ministry continues to issue guiding documents for businesses related to tariff reduction roadmaps and compliance with regulations on non-tariff barriers to take advantage of the agreement's incentives when exporting to the Russian market.

Implement well policies to encourage domestic and foreign scientists to transfer research results into practical production. To attract and encourage domestic and foreign scientists, we must create a transparent environment; scientists and highly qualified people must have more freedom in creativity and greater autonomy. The income factor is also important but not the most important. Being respected, recognized and having opportunities for advancement are also factors that must be considered to attract talent.

Focus on developing high-quality human resources in many fields, especially in the fields of engineering - technology, law, finance..., because Russia has high technical and technological levels, if qualified. Our own technology - technology is not high, but in the era of the 4.0 industrial revolution, it is very difficult to compete with Russia.

Innovate growth models based on depth and quality, restructure industries and businesses. Invest in developing synchronous, modern, highly connected infrastructure. Build regional and national logistics centers to participate in regional and international logistics networks. Investigate, classify, and evaluate the competitiveness of each product, industry, service, each business, and each locality. Developing the private enterprise sector has truly become one of the main driving forces of the national economy. Strongly develop economic links, accumulate investment resources for in-depth development of commodity production. Invest in developing national brands and the State supports businesses in registering for trademark protection in the international market. Encourage the formation of concentrated key export production areas, creating a large-scale source of high-quality export goods that meet international standards.

References:

Ministry of Industry and Trade (2022), Vietnam Import-Export Report in 2023, Industry and Trade Publishing House.

Tran Van Hoe, (2007), Import-export business operations, Publishing House. National Economics University, Hanoi.

Pham Nguyen Minh (2015), Vietnam trade development and the Eurasian Economic Union in the context of implementing commitments in the Vietnam - EAEU FTA, Journal of Economics and Management, No. 42 November /2015.

Mutrap (2011), Report on assessing the impact of rules of origin in Vietnam's free trade agreements.

FACTORS INFLUENCING NATIONAL COMPETITIVENESS: EVIDENCE FROM ASIAN COUNTRIES

MSc. Nguyen Thi Quynh Cham* - PhD. Nguyen Thi Thuy Quynh* - Tran An Khanh**

Abstract: ***The purpose of this article is to study factors influencing national competitiveness, based on data from 13 Asian countries during the period from 2008 to 2019, the finding showed that: Potential for technological diffusion, technology competitiveness and high-technology trade, both in exports and imports, in positively influencing national competitiveness. However, competitiveness in production capacity is not a significant advantage in enhancing national competitiveness. Moreover, if a country aims to develop high-technology industries, it will have greater potential to enhance its national competitiveness.***

• Keywords: *international trade; national competitiveness; GCI; innovation; technological development.*

Date of receipt: 28th August, 2023
Date of receipt revision: 10th September, 2023
Date of delivery revision: 01st September, 2023
Date of approval: 20th September, 2023

Tóm tắt: *Mục đích của bài viết này là nghiên cứu các yếu tố ảnh hưởng đến năng lực cạnh tranh quốc gia, dựa trên dữ liệu từ 13 quốc gia châu Á trong giai đoạn 2008-2019, kết quả cho thấy: Tiềm năng phổ biến công nghệ, năng lực cạnh tranh công nghệ và thương mại công nghệ cao, cả trong xuất khẩu và nhập khẩu, tác động tích cực đến năng lực cạnh tranh quốc gia. Tuy nhiên, năng lực cạnh tranh về năng lực sản xuất không phải là lợi thế đáng kể trong việc nâng cao năng lực cạnh tranh quốc gia. Hơn nữa, nếu một quốc gia đặt mục tiêu phát triển các ngành công nghệ cao thì quốc gia đó sẽ có tiềm năng lớn hơn để nâng cao năng lực cạnh tranh quốc gia.*

• Từ khóa: *thương mại quốc tế; năng lực cạnh tranh quốc gia; GCI; sự đổi mới; phát triển công nghệ.*

1. Introduction

In the context of increasing globalization and expanding free trade, both businesses and countries face growing competition. The World Economic Forum's 1997 report defined "national competitiveness" as the ability of a country's economy to achieve and sustain high levels of growth based on sustainable policies, relative institutional stability, and other economic characteristics. National competitiveness relies on the efficient utilization of human resources and capital resources within a country, as productivity determines sustainable living standards, reflected in wages, profitability rates from invested capital, and returns from natural resources.

According to the World Economic Forum (WEF), 12 main pillars are used in assessing the Global Competitiveness Index (GCI) 4.0, technology-related factors influence the methods of manufacturing and international trade. This is reflected in the index, which measures the adaptability and innovation capacity in technology. Research also indicates a widening disparity in competitive capabilities among countries.

A competitive advantage of a country will enhance its ability to attract investments, achieve sustainable economic growth, maintain social stability, and improve the living standards of its people. Analyzing the factors that influence competitiveness helps countries formulate policies to attract investors. Particularly, in the era of the Fourth Industrial Revolution, applying technological development, innovation, and creativity in trade will improve productivity, reduce costs, enhance product quality, boost competitiveness, and contribute to enhancing a country's overall competitiveness.

** Academy of Finance*
*** CQ59/22.03CLC - Academy of Finance*

Asia has been one of the fastest-growing regions in the world in recent years, and the competitiveness of countries in the region have shown significant growth. This assessment is based on the Global Competitiveness Index (GCI) analyzed by the World Economic Forum (WEF) in its annual Global Competitiveness Reports.

Overall, Asian countries have experienced significant economic competitiveness growth, with countries like Israel, South Korea, and Vietnam showing the strongest and most robust growth. Japan, Singapore, Malaysia, and China have also played important roles in the economic development and competitiveness of the Asian region.

During the period from 2008 to 2019, the global and regional economies faced various fluctuations. The global financial crisis initially impacted the world economy, leading to a decline in economic indicators and financial market instability. However, in the following years, countries experienced economic recovery and growth. Some countries achieved high levels of competitiveness through innovation, while others faced economic and political challenges that resulted in a decline in their GCI scores.

This research article explores the factors influencing the competitiveness of countries, aiming to provide empirical evidence on the factors that impact competitiveness, particularly the relationship between high-tech exports, imports and competitiveness.

2. Literature review and proposed model

2.1. Literature review

Defining competitiveness is a controversial issue. Aiginger (1998), Charrass (2017) highlighted one of the reasons is due to the scope of the concept. Competitiveness is primarily a concept used in microeconomics and becomes less effective when applied at the national level, as countries do not compete in the same way as individual firms. Unlike firms, countries lack a singular bottom line, such as profits, to gauge their performance.

According to Schwab (2018), competitiveness is defined as "*a set of institutions, policies, and factors that determine the level of productivity of a country*". In this context, national competitiveness refers to the national conditions that reflect the potential of a nation to achieve higher productivity, increase prosperity, achieve a high standard of living, and generate a high rate of employment. In this study, national competitiveness is defined as the ability of a nation to develop the economy, achieve higher productivity, prosperity, and GDP per capita.

The research conducted by Zera Zuryana Idris et al. (2021) called *"High-Technology Trade: Does it Enhance National Competitiveness?*" examined the empirical impact of engaging in high-technology trade, both in terms of exports and imports, on national competitiveness. The study analyzed a sample of 20 countries with significant volumes of high-technology exports during the period from 2007 to 2016, and it demonstrated that both high-technology exports and imports have positive effects on national competitiveness. Specifically, high-technology exports drive technological development and enhance national competitive capabilities. On the other hand, high-technology imports play a role as a mechanism for technology transfer and also positively influence national competitive capabilities. This indicates that a country's advantage lies in identifying and developing high-technology industries with potential to achieve higher levels of national competitiveness.

Laima Okunevičiūtė Neverauskienė, Irena Danilevičienė & Manuela Tvaronavičienė (2020) conducted an evaluation of the impact of various factors on national competitiveness and their influence on the sustainable development of a country. The study revealed that key factors such as wages, capital, investment, and unemployment rate significantly affect national competitiveness.

The model proposed by Fagerberg et al. (2007) assumes that a country's competitiveness dependa on its potential for technology diffusion, technology competitiveness, growth competitiveness, price competitiveness, and the ability to exploit high-technology. The study also indicates that engaging in high-technology trade can enhance national competitiveness.

National competitiveness is not only a driving force for economic advancement but is also considered from a technological perspective. In today's world, international trade and innovation are regarded as positive factors influencing national competitiveness, particularly in the realm of high-technology trade. Atkin, Khandelwal and Osman (2017) showed that when exporters are given larger market opportunities through exports, more quality control will be adopted by the exporting firms. Indirectly, this contributed to

enhanced product quality exported by a country and increase the position of the country to compete in the international market. Wu et al. (2017) showed the positive relationship between high-tech exports and a nation's capability to innovate.

However, there are still some studies that indicate high-technology exports do not have a significant impact on economic growth. (Erkananda and Parlinggoman, 2017; Wabiga and Nakijoba, 2018). Bao et al. (2012) found that high-tech exports do not lead to technology spillover to domestic sectors or other export sectors in China. This finding can be attributed to the fact that China's hightechnology exports depend significantly on processing trade and foreign direct investment. This dependency has limited the opportunity for technology learning. In this setting, high-tech exports may not contribute to increasing national competitiveness. Srholec (2007) highlighted that the bulk of high tech exports from developing countries are highly associated with their participation in the fragmented global production network, Xing (2014) argued that the high-tech exports from developing countries like China are based on assembled high-tech products and therefore are indifferent from other labour-intensive products in terms of technological intensity.

2.2. Proposed model

Based on the theory of national competitiveness and previous studies, the research team selected the following variables:

** National competitiveness - NC*

National competitiveness is measured by the Global Competitiveness Index (GCI) - a comprehensive measure assessing the productivity and efficiency of a country and its overall competitive advantages.

During the period of 2008-2017, GCI was evaluated on a scale of 1-7, based on 12 pillars: Institutions, Infrastructure, Macroeconomic stability, Health and primary education, Higher education and training, Goods market efficiency, Labor market efficiency, Financial market development, Technological readiness, Market size, Business dynamism, and Innovation capability. In the period of 2018-2019, WEF changed the assessment methodology, and the scale was modified to 0-100, along with 12 new pillars. To ensure data consistency, the research team converted the GCI scores from the 1-7 scale to the 0-100 scale.

** Potential for technological diffusion (PTD)*

According to Fagerberg et al. (2007), the potential for technological diffusion is measured as the distance in technological knowledge between country i and the most advanced countries in the sample. The potential for technological diffusion is calculated as follows:

$$PTD_i = \frac{TK_i}{TK^*}$$

TK_i is the technological knowledge of country i and TK* is the technological knowledge appropriated in the most advanced countries in the sample. PTD_i measures the distance in technological knowledge between country i and the technological frontier. However, Fagerberg et al assumed that it is challenging to find an approximation for the total level of technology appropriated in a country relative to the frontier (the most advanced country in the sample). Following Fagerberg et al. (2007), we use the log of the initial level of GDP per capita to calculate the potential for diffusion. According to Solow's (1956) theory of growth, it is predicted that poorer countries will grow at a faster rate than the developed countries based on the law of diminishing return. In this case, potential for technological diffusion has a negative impact on national competitiveness. However, this theory was contested by Abramovitz (1986) where he argued that higher-income countries are able to develop their infrastructures better than others in order to attract more investments. This will facilitate the diffusion of technology and contribute positively to enhance national competitiveness.

Hypothesis: Potential for technological diffusion (PTD) positively impact national competitiveness.

** Technology competitiveness (T):*

Technology competitiveness represents a country's ability to compete in the market for new goods and services based on technology. This indicator is evaluated through the Technological Readiness pillar. According to Fagerberg (1988) and Fagerberg et al. (2007), technological development has a positive impact on a nation's competitiveness. Advancements in technology enable countries to produce more complex products and penetrate larger export markets. Therefore, technological development is expected to enhance a country's position in competing in the international market.

The data for technology competitiveness is obtained from the World Economic Forum's Global Competitiveness Report for the years 2008-2017. However, due to some changes in the assessment methodology by the World Economic Forum, for the years 2018 and 2019, the research team used data from the pillar: ICT Adoption. Technological readiness measures the extent to which an economy applies existing technologies to improve productivity across industries. ICT Adoption is an index measuring the level of Information and Communication Technology (ICT) usage in society, the ability of individuals, organizations, and governments to use information and communication technologies, as well as the prevalence and use of technology services.

Hypothesis: Technology competitiveness of a nation is expected to have a positive impact on its national competitive capabilities.

** Capacity competitiveness (C):*

This indicator measures the capability of a country to exploit technology, which means the level of capability of that nation to utilize existing technologies or apprehend new technologies to improve productivity and production efficiency. This measures the ability of a country to innovate. According to Zera et al. (2021), high-tech exports enhance economic development and innovative capacity, enabling high-tech firms to access larger market opportunities. To compete in the international market, these companies need significant efforts in innovation. Therefore, higher competency leads to higher competitive capabilities.

Capacity competitiveness is measured by the score of a component indicator called "capacity for innovation" in the Innovation pillar - which evaluates a country's ability for innovative activities. In 2018 and 2019, due to changes in the assessment methodology by the World Economic Forum (WEF), the research team decided to use data from the pillar: "Innovation capability" - which is compiled based on factors such as R&D investments, the number of scientific research publications, the number of patents issued, etc.

*Hypothesis: Capacity competitiveness has a positive impact on national competitiveness***.**

** Demand competitiveness (W):*

Demand competitiveness refers to the ability to meet world demand which is represented as the amount of export, import and the total value of high-tech. According to Levchenko (2011), international trade forces countries to improve institutional quality after opening through 'race to the top'. Exporting high-tech products forces countries to improve their economic environment, such as infrastructure, intellectual property rights, human capital, etc. These are expected to contribute to the competitiveness of a country. Beside high-tech export, import also has the potential to contribute positively to national competitiveness. Imports help the developing countries to imitate technology and raise the country's productivity while creating new technologies (Coe et al, 1997)

The total value of high-tech export and import is derived by product line using SITC Rev. 4 codes and then summed up to get the final data, for each country in each year. The values are extracted from UN COMTRADE. The included industries are: Aerospace, Computers-office machines, Electronics-communication, Scientific instruments, Pharmacy, Electrical machinery Chemistry, Non-electrical machinery, Armament.

Hypothesis: Demand competitiveness has a positive impact on national competitiveness.

Based on theories and previous studies, the research team proposes the following model:

$$NC_{it} = \beta_1 + \beta_2 PTD_t + \beta_3 T_{it} + \beta_4 C_{it} + \beta_5 \ln(W_{it}) + U_{it}$$

Augmenting the above-mentioned model, we include high-tech variables, which are the value of exports, imports and trade to examine the impact of high-tech trade on national competitiveness:

$$NC_{it} = \beta_1 + \beta_2 PTD_t + \beta_3 T_{it} + \beta_4 C_{it} + \beta_5 \ln(XT_{it}) + U_{it} \quad (1)$$

$$NC_{it} = \beta_1 + \beta_2 PTD_t + \beta_3 T_{it} + \beta_4 C_{it} + \beta_5 \ln(MT_{it}) + U_{it} \quad (2)$$

$$NC_{it} = \beta_1 + \beta_2 PTD_t + \beta_3 T_{it} + \beta_4 C_{it} + \beta_5 \ln(TT_{it}) + U_{it} \quad (3)$$

In which:

XT: The value of high-tech exports;

MT: The value of high-tech imports;

TT: The total value of high-tech trade.

3. Empirical result from Asian countries

3.1. Data description

The study involves a sample of 13 Asian countries from 2008 to 2019. The study uses trade and economic statistics from sources such as World Bank, World Economic Forum, UN Comtrade… in order to examine the impact of high-tech trade on national competitiveness. Initially, the research

team chose 20 countries in Asia to collect data for our study. However, due to data limitations and exceptional features of some countries, the research team has selected the most suitable countries to proceed with this study.

3.2. Empirical results

The study employs the estimation method with panel data using Fixed Effects Model (FEM), Random Effects Model (REM), and Generalized Least Squares (GLS) to address regression problems. Additionally, the Generalized Method of Moments (GMM) is used to deal with endogeneity in the model.

** Descriptive statistics*

Table 1. Descriptive statistics

Variable	N	mean	sd	min	max	cv
NC	156	64.12788	9.546373	41.78003	84.8	0.1488646
PTD	156	4.016415	0.6018873	2.866178	4.991409	0.1498568
T	156	57.94518	17.80207	23.61383	92.8	0.3072226
C	156	54.71848	14.67685	25.42563	82.29981	0.2682248
lnXT	156	21.81761	5.447612	0	27.31812	0.2496888
lnMT	156	22.7882	5.048836	0	27.15684	0.2215548
lnTT	156	23.47428	4.695679	0	27.93387	0.2000351

From Table 1, we can observe that during the study period of 12 years across 13 countries, the average Global Competitiveness Index (GCI) score is 64.12788. The country with the lowest GCI score is Cambodia in 2009, with a score of 41.78003, while Singapore has the highest GCI score of 84.8 in 2019, making it the most competitive country in the world in that year. The average value of imports across the countries over the years is (US dollars). Among them, China has the highest export value, amounting to (US dollars) in 2018.

** Correlation matrix table*

Table 2: Correlation matrix

	NC	PTD	T	C	lnXT	lnMT	lnTT
NC	1.0000						
PTD	0.8613	1.0000					
T	0.8670	0.8691	1.0000				
C	0.7699	0.6930	0.7273	1.0000			
lnXT	0.3123	0.0452	0.2106	0.3534	1.0000		
lnMT	0.2502	0.0364	0.1793	0.3127	0.8516	1.0000	
lnTT	0.3168	0.1070	0.2326	0.3486	0.9187	0.9599	1.0000

Pearson correlation coefficient matrix indicates the correlation between the dependent variable and the independent variables, as well as the correlation between the independent variables themselves. The results in Table 2 show that the independent variables PTD, T, C, lnXT, lnMT, and lnTT have a positive correlation with the NC.

To test for multicollinearity in the research model, the variance inflation factor (VIF) of the independent variables was calculated (Table 3). The results indicate that the VIF values for all models are less than 10, suggesting that the level of multicollinearity is not severe.

** Model Estimation and Testing*

The research team conducted various tests to select the most appropriate model among FEM, REM, and Pooled OLS. Then, we utilized the Hausman test to choose between FEM and REM models. The Hausman test results indicate that the p-values for models (1), (2), and (3) are all lower than 5%, suggesting that the FEM model is the appropriate choice.

Furthermore, we examined heteroskedasticity for all three models. The estimation results showed that the p-values for this test were all lower than the significance level of 5%. This indicates that all three models have heteroskedasticity and autocorrelation.

** Addressing model problem*

To address the regression problem of heteroskedasticity and autocorrelation in FEM, the research team utilized the GLS method, the results are presented in Table 3. From table 3, it can be observed that all independent variables PTD, T, C, lnXT, lnMT, and lnTT have p-values lower than 0.05. This indicates that high-tech exports significantly influence national competitiveness and have a positive impact on them. Therefore, we can conclude that all three models are highly accurate.

After addressing the problem of heteroskedasticity, Model (1) shows that the p-values for the independent variables PTD, T, C, and lnXT are all lower than 0.05, indicating that these variables are statistically significant and have a remarkable impact on the model. Moreover, the positive correlation of these independent variables with the dependent variable NC aligns with the initial hypotheses.

Table 3: Estimation results

	OLS			FEM			GLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Potential for technology diffusion (PTD)	7.932***	7.1339***	7.0482***	13.06***	12.95***	13.00***	9.393***	8.115***	8.173***
	(1.1006)	(1.1226)	(1.0953)	(2.356)	(2.333)	(2.336)	(0.812)	(0.843)	(0.829)
Technology competitiveness (T)	0.151***	0.1691***	0.1680***	0.222***	0.223***	0.223***	0.148***	0.172***	0.168***
	(0.0374)	(0.0386)	(0.0381)	(0.0269)	(0.0270)	(0.0269)	(0.0288)	(0.0299)	(0.0299)

	OLS			FEM			GLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Capacity competitiveness (C)	0.1019***	0.125***	0.1226***	0.0692**	0.0716**	0.0708**	0.0780***	0.106***	0.102***
	(0.0326)	(0.0334)	(0.0329)	(0.0284)	(0.0293)	(0.0290)	(0.0253)	(0.0270)	(0.0269)
lnXT	0.3068***			-0.0222			0.345***		
	(0.06342)			(0.0615)			(0.0488)		
lnMT		0.2214***			-0.0229			0.224***	
		(0.06875)			(0.0496)			(0.0608)	
lnTT			0.2657***			-0.0234			0.283***
			(0.0729)			(0.0539)			(0.0655)
Constant	11.251***	13.7881***	13.137***	-4.534	-4.208	-4.298	6.149**	10.74***	9.390***
	(3.1409)	(3.297)	(3.2503)	(8.633)	(8.641)	(8.634)	(2.415)	(2.570)	(2.617)
Observations	156	156	156	156	156	156	156	156	156
R^2	0.8502	0.8381	0.8410						
Number of countries	13	13	13	13	13	13	13	13	13
VIF	3.41	3.3	3.25						

Potential for technology diffusion (PTD)

Potential for technology diffusion has a positive regression coefficient in all three models, indicating a positive relationship with national competitiveness. This result suggests that countries with a greater potential for technology diffusion tend to enhance their national competitiveness. This in line with the observations made by Abramovitz (1986), who stated that higher-income countries may develop better infrastructure to attract investments. This means that higher-income countries create favorable conditions for the technology diffusion process, which contributes positively to improving their national competitiveness.

Technology competitiveness (T)

Technology competitiveness exhibit a positive impact on national competitiveness. This result indicates that countries with higher technology competitiveness tend to enhance their national competitiveness. This finding aligns with the observations made by Fagerberg (1988) and Fagerberg et al. (2007), where technology competitiveness positively impacts national competitiveness.

** Generalized Method of Moments (GMM)*

Zera et al. (2021) argued that competitiveness should be taken as an ongoing and dynamic process rather than static. Similarly, Aiginger (1998), Dayasindhu (2002), Delgado et al. (2012) also stated that competitiveness should be perceived as dynamic in nature. This research utilizes the Two-Stage Least Squares (2SLS) regression method and employs the Durbin-Wu-Hausman test to examine endogeneity in the model. The results show that Model (1) does not suffer from endogeneity problems as all independent variables have estimated p-values from the Durbin-Wu-Hausman test greater than 0.05. Model (2) and Model (3) exhibit endogeneity due to the variable PTD, as the estimated p-values from the Durbin-Wu-Hausman test are less than 0.05.

Table 4: GMM estimation results of model 1

```
Dynamic panel-data estimation, two-step system GMM
------------------------------------------------------------------------------
Group variable: id                              Number of obs      =       104
Time variable : year                            Number of groups   =        13
Number of instruments = 12                      Obs per group: min =         8
Wald chi2(5)  = 117849.92                                      avg =      8.00
Prob > chi2   =    0.000                                       max =         8
------------------------------------------------------------------------------
          nc |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          nc |
         L1. |   .2529076    .131496     1.92   0.054    -.00482    .5106351
             |
         ptd |   3.575322   3.706049     0.96   0.335   -3.688401   10.83904
           c |  -.0945195   .0478415    -1.98   0.048    -.188287   -.000752
           t |   .2558136   .1705122     1.50   0.134   -.0783843    .5900114
        lnmt |   1.164238   .3926812     2.96   0.003    .3945972    1.933879
       _cons |  -3.188033   9.189166    -0.35   0.729   -21.19847    14.8224
------------------------------------------------------------------------------
Warning: Uncorrected two-step standard errors are unreliable.
```

Table 5: GMM estimation results of model 2

```
Dynamic panel-data estimation, two-step system GMM
------------------------------------------------------------------------------
Group variable: id                              Number of obs      =       104
Time variable : year                            Number of groups   =        13
Number of instruments = 12                      Obs per group: min =         8
Wald chi2(5)  = 139657.62                                      avg =      8.00
Prob > chi2   =    0.000                                       max =         8
------------------------------------------------------------------------------
          nc |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          nc |
         L1. |   .2627192   .1296166     2.03   0.043    .0086753    .5167631
             |
         ptd |   3.762538   3.626981     1.04   0.300   -3.346214   10.87129
           c |  -.0931096   .0515237    -1.81   0.071   -.1940943    .0078751
           t |   .2511565   .1675066     1.50   0.134   -.0771503    .5794634
        lntt |   1.007334   .3500096     2.88   0.004    .321328    1.693341
       _cons |  -1.157944   9.501021    -0.12   0.903   -19.7796    17.46372
------------------------------------------------------------------------------
Warning: Uncorrected two-step standard errors are unreliable.
```

To deal with endogeneity, the research team utilized the Generalized Method of Moments (GMM) approach. The results show that the AR (1) has a serial correlation and is statistically significant at the 5% level; all the serial correlation indices for AR (2) are not statistically significant (P-value > 0.5). The Hansen test result is also greater than 0.25 (P-value = 0.335). Number of instruments are 12, which is smaller than the number of groups (13), therefore, GMM model meets the necessary requirements for estimation.

** Analysis of GMM results:*

The GMM estimation results for the two models show that the capacity competitiveness (C) and demand competitiveness (W) - represented by high-tech imports and the total value of high-tech trade - have an impact on national competitiveness.

Capacity competitiveness:

The coefficient of regression for Capacity competitiveness (C) in the two models is -0.0945195 and -0.0931096 respectively, indicating a negative relationship with national competitiveness. This result suggests that the capacity competitiveness does not have a significant impact on national competitiveness. This finding aligns with the assertions made by Srholec (2007) and Xing (2014), who argued that some developing countries only participate in certain stages of the high-tech product manufacturing process rather than organizing the entire production, which does not lead to an increase in national competitiveness.

High-tech imports and high-tech trade

The regression coefficient for high-tech imports (lnMT) is 1.164238, and for high-tech trade (lnTT) is 1.007334, indicating a positive relationship with national competitiveness. This result shows that the value of high-tech exports and the total value of high-tech trade have a positive impact on national competitiveness. This finding is in line with the observations made by Levchenko (2011), who argued that trade in high-tech products forces countries to improve their economic environment, such as infrastructure, intellectual property rights, human resources, etc., thereby enhancing their Global Competitiveness Index (GCI).

4. Conclusions and recommendations

4.1. Conclusions

The high-tech trade is increasingly popular during the era of Fourth Industrial Revolution. The expansion of high-tech trade is closely associated with advancements in technology. Theories have predicted that technology and innovation will enhance national competitiveness. This study aims to examine the impact of high-tech trade, exports, and imports on national competitiveness by using a dataset comprising 13 countries in the period from 2008 to 2019. The study has shown a positive relationship between high-tech trade and national competitiveness, and both high-tech exports and imports contribute positively to a higher level of national competitiveness.

4.2. Recommendations

The findings of the study show that high-tech trade has the potential to enhance national competitiveness, high-tech exports along with the enhancement of technological capability will also increase national competitiveness. Therefore, the research team proposes two sets of solutions:

Measures to enhance national competitive capabilities: Promote domestic economic development, invest in education and training, create a conducive business environment, enact supportive policies.

Measures to enhance technology capabilities: Encourage competition in technology field, invest in Research and Development, strengthen support for technology transfer.

References:

Aiginger, K. 1998. A framework for evaluating the dynamic competitiveness of countries. Structural Change and Economic Dynamics 9(2): pp.159-188

Arellano, M. và Bond, S. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. The Review of Economic Studies 58(2): pp.277.

Atkin, D., Khandelwal, A. K., và Osman, A. 2017. Exporting and firm performance: Evidence from a randomized experiment. The Quarterly Journal of Economics 132(2): pp. 551-615.

Bao, Q., Sun, P., & Su, L. 2012. Do High-technology Exports Cause More Technology Spillover in China?. China & World Economy 20(2): pp. 1-22.

Belitz, H., và Mölders, F. 2016. International knowledge spillovers through high-tech imports and R&D of foreign-owned firms. The Journal of International Trade & Economic Development 25(4): pp. 590-613.

Charrass, A. 2017. New Criticism on the Competitiveness Concept: A Critical Review of the Concept at the Macroeconomic Level. International Journal of Economics and Finance 9(1): pp. 190-193.

Dayasindhu, N. 2002. Embeddedness, knowledge transfer, industry clusters and global competitiveness: a case study of the Indian software industry. Technovation 22(9): pp.551-560.

Coe, D. T., Helpman, E., & Hoffmaister, A. W. 1997. Northsouth R & D spillovers. The Economic Journal 107(440): pp. 134-149.

Delgado, M., Ketels, C., Porter, M. E., & Stern, S. 2012. The determinants of national competitiveness. National Bureau of Economic Research Working Paper Series No. w18249.

Ekananda, M., & Parlinggoman, D. J. 2017. The role of hightech exports and of foreign direct investments (FDI) on economic growth. European Research Studies Journal 20(4A): pp. 194-212.

Fagerberg, J. 1988. International competitiveness. The Economic Journal 98(391): pp. 355-374.

Fagerberg, J., Srholec, M., & Knell, M. 2007. The competitiveness of nations: Why some countries prosper while others fall behind. World Development 35(10): pp. 1595-1620.

Falvey, R., Foster, N., & Greenaway, D. 2009. Trade, imitative ability and intellectual property rights. Review of World Economics 145(3): pp. 373-404

Levchenko, A. A. 2012. International trade and institutional change. The Journal of Law, Economics, & Organization 29(5): pp.1145-1181

Porter, M. E. 1990. The Competitive Advantage of Nations. Harvard Business Review 68(2): pp.73-93.

Schwab, K. 2018. The global competitiveness report 2018. World Economic Forum

Wabiga, P., & Nakijoba, S. 2018. High Technology Exports, Gross Capital Formation and Economic Growth in Uganda: A Vector Auto Regressive Approach. International Journal of Business and Economics Research 7(6): pp.191-202.

Wu, J., Ma, Z., & Zhuo, S. 2017. Enhancing national innovative capacity: The impact of high-tech international trade and inward foreign direct investment. International Business Review 26(3): pp.502-514.

Xing, Y. 2014. China's high-tech exports: The myth and reality. Asian Economic Papers 13(1): pp.109-123.

Zera, I., Normaz, I., Saifuzzaman, I., & Hanny, H. 2021. High-Technology Trade: Does it Enhance National Competitiveness?. Jurnal Ekonomi Malaysia 55(3).

FACTORS AFFECTING THE COMPETITIVENESS OF INDUSTRIAL CLUSTERS IN LAOS

MA. Sonepaseuth Dalavong*

Abstract: ***The paper examines the factors influencing the competitiveness of industrial clusters in Laos. Through the collection of data via questionnaires from 160 enterprises located within industrial clusters in Laos, the research findings reveal that The infrastructure, Quality of labor resources, The business inspiration, Knowledge widespread, Connect and collaborate, Technology and innovation all significantly impact the competitiveness of industrial clusters in Laos.***

• Keywords: *competitiveness, factors affecting the competitiveness, industrial clusters, Laos.*

Date of receipt: 22th October, 2023
Date of delivery revision: 23th October, 2023
Date of receipt revision: 20th November, 2023
Date of approval: 30th November, 2023

Tóm tắt: *Nghiên cứu này đánh giá các yếu tố ảnh hưởng đến sự cạnh tranh của các cụm công nghiệp tại Lào. Thông qua việc thu thập dữ liệu bằng bảng hỏi từ 160 doanh nghiệp đặt tại các cụm công nghiệp tại Lào, kết quả nghiên cứu cho thấy cơ sở hạ tầng, chất lượng nguồn lao động, sự truyền cảm hứng trong kinh doanh, việc phổ biến kiến thức, sự kết nối và hợp tác cũng như công nghệ và sáng tạo đều ảnh hưởng đáng kể đến sự cạnh tranh của các cụm công nghiệp tại Lào.*

• Từ khóa: *sự cạnh tranh, nhân tố ảnh hưởng đến sự cạnh tranh, cụm công nghiệp, Lào.*

1. Introduction

Countries and regions are undergoing significant transformations in this phase of economic development due to the emergence and growth of innovation, economic competitiveness, and the pursuit of novel forms, methods, and strategies for socioeconomic advancement (Lu et al., 2018). The global community acknowledges the industrial cluster model as one of the most promising approaches for addressing the challenges brought about by the information age and the globalization of business. The establishment of industrial clusters is often seen as a prerequisite for a nation or region to compete on a global scale. Leading industrialized nations, as well as those formulating plans for industrial growth, have recognized that the industrial cluster strategy has evolved into a valuable tool for local economic policy in recent years (Li, 2019). When assessing the sustainability of the national economy, particular emphasis is placed on the development and expansion of a competitive national economy.

The feasibility of the topic will be determined by the ongoing discussion surrounding cluster categorization. Despite the relatively large number of research clusters, management theory has not yet produced a single science-based management model with such an objective. Before delving into a new subject, it is crucial to find methods for precisely describing and categorizing criteria and indicators for evaluation. Clustering proves to be an effective strategy for implementing industrial policy, as demonstrated by the experiences of certain nations (Mindlin et al., 2016). Ever since the inception of handcraft manufacturing, the financial consolidation of interconnected businesses in a specific region has been acknowledged as a cluster phenomenon. Economists are increasingly recognizing that areas where clusters form will emerge as leaders in economic development (Palčič, 2022). These areas, along with their leaders, define the competitiveness of national economies. The gradual adaptation of the Lao economy to competitive financial conditions and the allocation of resources for a strategy that has become widely adopted worldwide are essential. Furthermore, it is necessary to ascertain beforehand whether the subject is suitable: Analyzing factors that affect the competitiveness of industrial clusters in Laos.

2. Literature review

Industrial cluster

Madsen et al. (2003) define industrial clusters as groups of companies in a region that establish

* *PhD, student, Foreign Trade University; email: sonepaseuth1@gmail.com*

a production system with the capacity for both horizontal and vertical expansion. The primary inquiry in the theoretical component is whether companies within industrial clusters are more productive than standalone companies outside the cluster. Babkin et al. (2021) note that the process of accumulating and centralizing production is linked to the development of the industrial system in general and industrial firms in particular. In the industry, production is accumulated and centralized both within the region and within individual businesses. Visser and Atzema (2008) state that the following fundamental ideas encapsulate the function of industrial clusters: fostering an environment conducive to investment for companies and associated associations. Industrial clusters benefit from concentration, synchronous infrastructure, connection, and component interaction, thus contributing to the maintenance of technological and socioeconomic infrastructure. These benefits translate into advancements in technology and production for business growth (Cunningham et al., 2023).

Current status of industrial cluster development in Laos

Special Economic Zones (SEZs) were established by the Lao PDR to introduce fresh opportunities and stimulate rapid economic growth. In line with economic globalization and regional integration, SEZs facilitate the formation of growing industrial clusters, promote innovation, and boost consumption. SEZs provide vibrant ecosystems that help both foreigners and locals transform new ideas into profitable ventures and enhance competitiveness. Collaborations, concepts, and inventions have led to significant investments, with some making their mark on the global stage.

Factors affecting industrial cluster competitiveness

Hsu et al. (2013) examined industrial clusters and company competitiveness through empirical research, focusing on special economic zones. They conducted a questionnaire survey and subsequently analyzed the collected data through regression, aiming to investigate corporate cluster interaction, corporate performance impact, and the strategic resources of industrial clusters within special economic zones. The empirical evidence highlights the pivotal role of strategic resources held by clusters in shaping group dynamics and enhancing the competitive edge of enterprises. Additionally, studies reveal that a firm's competitiveness and performance can be positively influenced by the connections and resources within industrial clusters.

The assessment of industrial cluster competitiveness has gained significant importance as these clusters increasingly drive regional economic growth and contribute substantially to modern industrialization. In a comprehensive assessment by Liu et al. (2014), domestic and international research on the formal mechanism and content of industrial cluster competitiveness is discussed. They propose a model for evaluating and nurturing industrial cluster competitiveness, concluding by outlining potential areas for future research in this field.

Hu and Shieh (2017) emphasize that despite a lag in industrialization compared to research levels, the domestic agricultural biotechnology research stands at a high and extensive standard. Their research analyzes agricultural biotechnology parks aiming to rapidly develop industrial clusters and advance agricultural technology. Findings underscore the significance of Level 2 assessment standards, focusing on technology and knowledge resources, public infrastructure, governance, human resources, financial resources, and supporting industries. The study recommends prompt establishment of agricultural technology industrial clusters, expediting technology development, and expanding high-value product exports to compete with more developed farming nations.

In their study, Zheng and Hu (2010) investigate the growth plan of the Chinese shipbuilding industry and its global competitiveness. They analyze the shift of the shipbuilding sector from Western Europe to Japan, Korea, and finally to China. The study constructs an analytical model to evaluate the essential elements influencing competitiveness and assess the industrial cluster competitiveness of China's shipbuilding industry, proposing future industry initiatives based on their findings.

Komarkova et al. (2014) investigate factors affecting firm competitiveness during the development of industrial clusters, focusing on internal and external environment variables. Their findings emphasize the significant impact of a firm's innovation efforts and flexibility in responding to customers on competitiveness over different time periods. During the 2009 financial crisis, innovation was deemed critical for financially well-managed organizations.

Bhawsar and Chattopadhyay (2018) introduce a quantitative method for assessing industry cluster competitiveness using the Analytical Hierarchy Process (AHP) approach. They demonstrate this method in four industrial clusters within the Indian automobile sector, providing a valuable tool for monitoring industry cluster development and guiding

policymakers. Their research represents a pioneering effort in assessing industrial cluster competitiveness by amalgamating secondary data with cluster players' perspectives.

3. Research methodology

To conduct this evaluation, the researcher administered a comprehensive questionnaire based on the Likert scale, ranging from 1 to 5, indicating responses from 'Strongly Disagree' to 'Strongly Agree.' The aim of this study is to analyze and assess the factors influencing the competitiveness of industrial clusters in Laos. After reviewing relevant studies and thoroughly assessing all aspects of the current situation of industrial clusters in Laos, the author developed a research model based on the works of Bhawsar and Chattopadhyay (2018), Hsu et al. (2013), Jednak et al. (2018), Hill and Brennan (2000), Komarkova et al. (2014), and Raines (2023). The proposed research model includes industrial cluster competitiveness as the dependent variable, with independent variables comprising Infrastructure, Quality of labor resources, Business inspiration, Knowledge dissemination, Collaboration, and Technology and innovation (see Table 1).

This study aims to assess the correlation between Infrastructure, Quality of labor resources, Business inspiration, Knowledge dissemination, Collaboration, and Technology and innovation on the factors influencing the competitiveness of industrial clusters in Laos. The research scope is limited to businesses operating in Laos, with a sample of 160 enterprises situated within industrial clusters. The survey questionnaire was distributed to businesses via email (Gmail) and business hotlines. Evaluating these businesses operating within industrial clusters in Laos allows for a comprehensive comparison of competitive advantages against independently operating entities. The data collection period spanned from August to October 2023.

Employing a quantitative approach, the author designed a questionnaire to investigate the variables influencing Laotian enterprises' capacity to conduct scientific research. A total of 160 survey samples were collected from Laotian companies. The research methodology is quantitative, and after gathering all the data, the researcher analyzed it using SPSS software to examine and assess the model's output. Subsequently, the research model underwent testing to assess its effectiveness. Through econometric model testing, this paper explores the significance of factors influencing the competitiveness of industrial clusters in Laos for scientific research.

Table 1. Variables Measurement

Factors	Contents	Coding	References
Competitiveness of industrial clusters	The competitiveness of industrial clusters plays an important role in socio-economic development	IC1	Bhawsar and Chattopadhyay (2018) Hsu et al. (2013)
	Enterprises in industrial clusters need to ensure competitiveness from imported goods	IC2	
	The government needs to promote the competitiveness of industrial clusters in Laos	IC3	
The infrastructure	The Lao government needs to increase investment in infrastructure and modernize roads	I1	Bhawsar and Chattopadhyay (2018) Jednak et al. (2018)
	The Lao government needs to strengthen planning to build industrial clusters associated with residential areas and logistics infrastructure	I2	
	Quality of services available at dry ports/railways	I3	
Quality of labor resources	Labor sources available locally	QL1	Hill and Brennan (2000) Hsu et al. (2013)
	Quality of labor management relations	QL2	
	Availability of skilled manpower locally	QL3	
The business inspiration	The cluster's ability to attract new businesses	E1	Raines (2023) Komarkova et al. (2014)
	Easily start a new business	E2	
	Easily get capital to start a new business/project	E3	
Knowledge widespread	Level of information exchange	KS1	Hill and Brennan (2000) Hsu et al. (2013)
	New technology emerges from the cluster	KS2	
	The role of clusters in influencing business-related learning	KS3	
Connect and collaborate	Support received from cluster/ industry associations	NC1	Bhawsar and Chattopadhyay (2018) Jednak et al. (2018)
	Trust between actors in the cluster	NC2	
	Participate in joint projects	NC3	
Technology and innovation	Royalties, licenses and know-how costs	TI1	Raines (2023) Komarkova et al (2014)
	Percentage of enterprises importing production materials	TI2	
	Expenses for importing means of production	TI3	

4. Empirical results

Cronbach's Alpha testing

Cronbach's alpha is a metric utilized to evaluate the internal consistency or reliability of a scale or test item. In other words, it measures the extent to which an indicator accurately represents a concept, and one way to assess the strength of this consistency is by examining its Cronbach's alpha. When a factor undergoes Cronbach's Alpha analysis, it should be removed from the group if the group's Cronbach's Alpha coefficient is less than 0.6, and none of the variables within the group has a Cronbach's Alpha exceeding 0.6.

Table 2. Cronbach's alpha of the variable

	Cronbach's Alpha	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
IC1	0.933	6.8	2.848	0.879	0.889
IC2		6.93	2.902	0.866	0.899
IC3		6.89	3.075	0.842	0.918
I1	0.783	7.17	1.778	0.608	0.761
I2		7.17	2.465	0.655	0.691
I3		7.19	2.306	0.652	0.68
QL1	0.819	6.8	3.023	0.678	0.745
QL2		6.95	2.91	0.679	0.744
QL3		6.8	3.026	0.66	0.764
E1	0.848	6.98	2.774	0.712	0.792
E2		7.12	2.83	0.708	0.795
E3		6.89	2.9	0.728	0.776
KS1	0.082	7.06	2.416	0.036	0.069
KS2		6.93	2.527	0.016	0.119
KS3		7.04	2.379	0.071	-0.023
NC1	0.784	7.18	2.349	0.629	0.701
NC2		6.96	2.529	0.608	0.725
NC3		7.11	2.12	0.638	0.694
TI1	0.765	6.99	2.528	0.507	0.778
TI2		7.11	2.184	0.629	0.647
TI3		7.04	2.03	0.661	0.607

As demonstrated in Table 2 above, the majority of the variables have Cronbach's alpha values greater than 0.6. The only exception is the KS variable, which has a Cronbach's alpha value below 0.6. Consequently, the research model excludes the KS variable.

Exploratory factor analysis

Exploratory factor analysis is one of the techniques used to condense and streamline data (EFA). It aids in reducing the extensive array of interconnected variables in a scientific research article to a more focused set of relevant variables.

Table 3. KMO and Bartlett test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.809
Bartlett's Test of Sphericity	Approx. Chi-Square	991.262
	df	105
	Sig.	0.000

The model's suitability has been tested, and the KMO coefficient, which equals 0.09, is greater than 0.6 (Table 3). This indicates that the model fits the sample data well and has a high KMO coefficient, suggesting that it will be valuable for translating the analysis's findings into practical applications. Bartlett's test of sphericity (SigF), which assesses the hypothesis regarding the correlation between observed variables, yields a result of 0.000, significantly lower than the 5% significance level. This result indicates strong correlations among the model's variables. In addition, when Eigenvalues exceed 1, the total variance explained by the model is 72.671%, which exceeds the 50% threshold, leading to the acceptance of the model. The extracted variables account for 72.671% of the observed variables.

Correlation analysis

Table 4 presents the results of Pearson correlation. This table reveals that the variables have correlations ranging from 0.2 to 0.6. Thus, it can be confirmed that the model does not suffer from multicollinearity.

Table 4. Pearson correlation analysis

		TI	IC	I	QL	E	NC
TI	Pearson Correlation	1	.467**	.307**	.292**	.332**	.312**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000
	N	160	160	160	160	160	160
IC	Pearson Correlation	.467**	1	.534**	.459**	.612**	.600**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
	N	160	161	161	161	161	161
I	Pearson Correlation	.307**	.534**	1	.398**	.453**	.380**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000
	N	160	161	161	161	161	161
QL	Pearson Correlation	.292**	.459**	.398**	1	.312**	.352**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
	N	160	161	161	161	161	161
E	Pearson Correlation	.332**	.612**	.453**	.312**	1	.488**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000
	N	160	161	161	161	161	161
NC	Pearson Correlation	.312**	.600**	.380**	.352**	.488**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	160	161	161	161	161	161

Linear regression analysis

Finally, the results of regression models are shown in Table 5 as follows. The adjusted R-squared carries a slightly different meaning from the R-squared. It is a more precise indication of model goodness of fit, particularly when additional independent variables are added to the model (Karch, 2019). The independent variables account for 57.3% of the influence on the dependent variable, as indicated by the adjusted R-squared value of 0.573.

Table 5. Regression coefficient

	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.836	0.303		-2.761	0.006
TI	0.221	0.068	0.187	3.273	0.001
I	0.22	0.074	0.184	2.971	0.003
QL	0.146	0.06	0.143	2.452	0.015
E	0.296	0.066	0.285	4.496	0.000
NC	0.331	0.073	0.279	4.521	0.000
Adjusted R Square	0.573				

The regression model is as follows:

IC = -0.836 + 0.221*TI + 0.220*I + 0.146*QL + 0.296*E + 0.331*NC

The regression coefficient of "Technology and innovation" is 0.221, indicating a statistically

significant positive influence on the "Competitiveness of industrial clusters". When "Technology and innovation" increase by 1 unit, "Industrial cluster competitiveness" also increases by 0.221 units, and vice versa.

The regression coefficient of "Infrastructure" is 0.220, demonstrating a statistically significant positive influence on the "Competitiveness of industrial clusters". When "Infrastructure" increases by 1 unit, "Industrial cluster competitiveness" increases by 0.220 units, and vice versa.

The regression coefficient of "Quality of labor resources" is 0.146, suggesting a statistically significant positive influence on the "Competitiveness of industrial clusters". When "Quality of labor resources" increases by 1 unit, "Industrial cluster competitiveness" increases by 0.146 units, and vice versa.

The regression coefficient of "Entrepreneurship" is 0.296, indicating a statistically significant positive influence on the "Competitiveness of industrial clusters". When "Entrepreneurial spirit" increases by 1 unit, "Industrial cluster competitiveness" increases by 0.296 units, and vice versa.

The regression coefficient of "Connection and collaboration" is 0.331, showing a statistically significant positive influence on "Industrial cluster competitiveness". When "Connection and collaboration" increases by 1 unit, "Industrial cluster competitiveness" increases by 0.331 units, and vice versa.

5. Conclusion

The report assesses the relative competitiveness of industry clusters in Laos using six metrics. This study aims to evaluate the factors affecting the competitiveness of industrial clusters, including infrastructure, quality of labor resources, business inspiration, knowledge dissemination, connectivity and collaboration, and technology and innovation. Among these factors, only widespread knowledge does not significantly impact the competitiveness of industrial clusters in Laos. This may be attributed to the practical aspects of the Laotian economy, where various businesses in different industries operate within the same industrial cluster, often without strong connections.

However, it is essential to acknowledge that each cluster possesses unique characteristics, personality, and integration with the geographical area it represents. Since a cluster is the sum of its parts and cluster competitiveness is an interconnected concept, each stakeholder-particularly industry and governmental entities at different levels-should offer tailored solutions to address variations in cluster competitiveness. Nevertheless, implementing these rules may be challenging due to the distinct characteristics of each cluster. Nonetheless, the report attempts to propose legislative measures to mitigate the competitive disadvantages of these clusters.

In summary, this study introduces a framework for operationalizing the broad and intricate concept of cluster competitiveness. It provides a theoretically supported empirical examination of competition dynamics within local industry clusters. While not an exhaustive investigation of cluster competitiveness, the study identifies relevant metrics and creates a comprehensive index for assessing cluster competitiveness performance. The approach presented here can be applied to evaluate the competitiveness of industry clusters globally or in other emerging countries. However, the list of indicators is illustrative and can be adapted to specific situations. This methodology may prove to be a valuable tool when formulating policies to support city-based industry clusters.

References:

Babkin, A., Tashenova, L., Krasnyuk, L., & Babkin, I. (2020, November). The structure of an innovative-active industrial cluster. In Proceedings of the International Scientific Conference-Digital Transformation on Manufacturing, Infrastructure and Service (pp. 1-8).

Bhawsar, P., & Chattopadhyay, U. (2018). Evaluation of industry cluster competitiveness: a quantitative approach. Benchmarking: An International Journal, 25(7), 2318-2343.

Cunningham, S. D., Cutler, T. A., Ryan, M. D., Hearn, G. N., & Keane, M. A. (2003). Research and innovation systems in the production of digital content and applications. Vol. III. https://eprints. qut. edu. au/2467.

Hill, E. W., & Brennan, J. F. (2000). A methodology for identifying the drivers of industrial clusters: The foundation of regional competitive advantage. Economic development quarterly, 14(1), 65-96.

Hsu, M. S., Lai, Y. L., & Lin, F. J. (2013). Effects of industry clusters on company competitiveness: Special economic zones in Taiwan. Review of Pacific Basin Financial Markets and Policies, 16(03), 1350017.

Hu, R., & Shieh, C. J. (2017, July). A Study on the Factors in the Industrial Cluster of Agricultural Biotechnology Parks. In 2017 International Conference on Organizational Innovation (ICOI 2017) (pp. 280-285). Atlantis Press.

Jednak, S., Kragulj, D., & Parežanin, M. (2018). Knowledge and industry clusters as drivers of economic development and competitiveness. Anali ekonomskog fakulteta u Subotici, (39), 3-17.

Komarkova, L., Pirozek, P., & Pudil, P. (2014). The factors and other characteristics influencing competitiveness of enterprises in countries in the post-transition phase of the economy. Engineering Economics, 25(5), 513-521.

Li, X. (2019). Research on tourism industrial cluster and information platform based on Internet of things technology. International Journal of Distributed Sensor Networks, 15(7), 1550147719858840.

Liu, S., Liu, K., Wu, X., & Zhu, X. (2014). The theoretical study on the evaluation of industrial cluster competitiveness. WIT Transactions on Information and Communication Technologies, 61, 1407-1414.

Lu, R., Reve, T., Huang, J., Jian, Z., & Chen, M. (2018). A literature review of cluster theory: are relations among clusters important?. Journal of Economic Surveys, 32(4), 1201-1220.

Madsen, E. S., Smith, V., & Dilling-Hansen, M. (2003). Industrial clusters, firm location and productivity. Some Empirical Evidence for Danish Firms, 17.

Mindlin, Y. B., Zhukov, B. M., Prokhorova, V. V., Shutilov, F. V., & Belova, E. O. (2016). Main stages of the formation of an economic cluster. International Journal of Economics and Financial Issues, 6(1), 261-265..

Palčič, I. (2013). Industrial clusters development and organisation model. Anali PAZU, 3(1), 26-33.

Raines, P. (2002, May). The challenge of evaluating cluster behaviour in economic development policy. In International RSA Conference: Evaluation and EU regional policy: New questions and challenges. Glasgow, UK: European Policies Research Centre, University of Strathclyde.

Visser, E. J., & Atzema, O. (2008). With or without clusters: Facilitating innovation through a differentiated and combined network approach. European Planning Studies, 16(9), 1169-1188.

Zheng, J. N., & HU, H. (2010). Analytical Model of the Industrial Cluster Competitiveness for Chinese Shipbuilding Industry. In Proceedings of International Conference on Management Science and Engineering (MSE 2010), Wuhan, China (Vol. 2, pp. 215-218).

CURRENT SITUATION OF TOURISM SERVICE DEVELOPMENT IN VIENTIANE, LAO PEOPLE'S DEMOCRATIC REPUBLIC

MA. Khammixiong Xaikhuenhiatoua*

Abstract: ***In the current context of globalization and international economic integration, the Vientiane Capital Government has devised numerous solutions to develop the capital's commodity economy. These strategies aim to mobilize all available resources for swift and sustainable development, striving to enhance the material and spiritual well-being of the populace. This concerted effort creates a vital foundation for Vientiane to transition into a fundamentally industrialized and modernized capital, geared towards the advancement of green industry. In line with these policies, the Capital has enacted several directives to foster economic development, with a key emphasis on prioritizing the growth of tourism services. Consequently, tourism services in the capital, Vientiane, have yielded positive outcomes.***

• Keywords: *industrialization, modernization, growth.*

Date of receipt: 07th September, 2023
Date of delivery revision: 08th September, 2023
Date of receipt revision: 31th October, 2023
Date of approval: 01th November, 2023

Tóm tắt: *Trong bối cảnh toàn cầu hóa và hội nhập kinh tế quốc tế hiện nay, Chính quyền Thủ đô Viêng Chăn đã đề ra nhiều giải pháp nhằm phát triển kinh tế hàng hóa Thủ đô. Các chiến lược này nhằm huy động mọi nguồn lực sẵn có để phát triển nhanh và bền vững, phấn đấu nâng cao đời sống vật chất và tinh thần của người dân. Nỗ lực phối hợp này tạo nền tảng quan trọng để Viêng Chăn chuyển đổi thành thủ đô công nghiệp hóa và hiện đại hóa cơ bản, hướng tới sự phát triển của ngành công nghiệp xanh. Để thực hiện các chính sách này, Thủ đô đã ban hành một số chỉ thị nhằm thúc đẩy phát triển kinh tế, trong đó nhấn mạnh vào việc ưu tiên tăng trưởng các dịch vụ du lịch. Nhờ đó, dịch vụ du lịch ở thủ đô Viêng Chăn đã mang lại những kết quả tích cực.*

• Từ khóa: *công nghiệp hóa, hiện đại hóa, tăng trưởng.*

1. Overview of tourism in Vientiane, Lao People's Democratic Republic

In terms of geographical location and natural tourism resources, Vientiane Capital spans approximately 170 km along its borders, situated to the south of Thailand, to the east of Tha Pha Bat district in Bo Li Kham Xay province, and to the north of Vientiane province. It covers a natural area of 3,920 km2 (1.7% of the country's total area) and is recognized as one of the five provinces in the Central Key Economic Region. The capital serves as the convergence point of nature, economy, politics, culture, and society from both the North and South regions. Surrounding the outskirts of Vientiane are significant tourist areas, including Phu Kou Khoai National Conservation Forest, Black Xa Van tourist spot, and Van Vientiane district. Notably, Van Vientiane is a charming mountain town encircled by limestone mountains and the shallow Nam Song River, creating a pleasant, cool climate. It is considered an ideal destination for tourists due to the availability of numerous hotels and restaurants.

Regarding cultural tourism resources, the new Vientiane Capital boasts a plethora of renowned and diverse historical and cultural relics. Among these are the array of temples hosting hundreds of distinctive pagodas such as Trang Luong Pagoda, Xi Muong Pagoda, the Arc de Triomphe, and the Buddha Statue Garden. The capital upholds the tradition of celebrating various festivals every month throughout the year, including Bun Pi May New Year (Lao New Year), the firecracker festival during ascension, and boat racing festivals. Each festival features folk games, tossing games, ferris wheels, and other cultural activities. The preservation and promotion of valuable cultural heritages are evident in a diverse range of forms and rich content that suit the needs of the city's diverse tribes and districts.

** PhD student, Ho Chi Minh National Academy of Politics; email: kmixong52@gmail.com*

Consequently, the cultural lifestyle of the capital's residents showcases a profound Buddhist cultural influence evident in architecture, art, painting, sculpture, writing, literature, poetry, attire, cuisine, beliefs, and festivals.

Regarding the number of visitors and the tourist market, through statistics on the number of tourists to Vientiane capital in the period of 2016 – 2022, it can be seen that the number of visitors grew steadily in the period before the COVID-19 epidemic. The number of international visitors accounts for a much larger proportion than domestic ones. (Table 1)

Table 1. The situation of tourists to Vientiane in the period of 2016-2022

	Guest International	Rate (%)	Guest Hinterland	Rate (%)	Sum Visitors	Total visitor growth rate (%)
2016	1.498.232	80,4	365.234	19,6	1.863.466	7,2
2017	1.503.231	75,4	399.172	24,6	1.992.403	6,9
2018	1.609.613	79,8	408.561	20,2	2.018.174	8
2019	1.724.753	92,3	144.232	17,7	1.868.985	-13
2020	510.254	98	10.504	2	520.758	- 73.1
2021	0	0	4.698	100	4.698	-99.7
2022	603.924	95.3	29.802	4.7	633.726	- 66 compared to 2019

Source: Department of Information, Culture and Tourism of Vientiane capital, tourism statistics 2016-2022

Regardless of the Covid-19 pandemic, the total number of visitors (international and domestic) handled by travel agencies has shown an increase. In 2016, the operations catered to 1,498,232 visitors, which rose to 1,528,504 tourists in 2017 and reached 1,531,226 visitors in 2019. However, in 2020, due to the outbreak of the Covid-19 epidemic, the number of visitors dropped sharply to 51,324, and in 2022, the tourism industry began its recovery with travel agencies servicing 62,425 tourists. Notably, international travel activities underwent significant changes.

According to statistics from the Ministry of Information, Culture, and Tourism, the Covid-19 pandemic had a substantial impact on workers in the tourism industry. During the pandemic, tourism enterprises reduced their workforce by 75-85%. In 2021, only 24% of employees continued working full time compared to 2019. Approximately 38% of employees either quit or terminated their labor contracts, while about 29% took temporary leave, and around 10% remained employed. Moreover, 26% of tourism industry employees switched to different professions, and 33% intended to change careers after the epidemic, with 71.73% being women and 28.27% men. Those who lost their jobs or changed careers had 5-10 years of occupational seniority accounting for 43.66%, and over 10 years of experience accounted for 23.56%. Approximately 51.31% of employees had college/university degrees, with 90% of workers with postgraduate degrees switching to other professions. Furthermore, 85.1% of travel office employees and tour guides changed careers, while 70.3% of vocational guides/guides, many of whom were proficient in 2-3 foreign languages, switched professions. Workers experienced measures such as salary cuts (mainly accommodations and meals) and temporary absenteeism due to international and domestic travel limitations.

By 2022, with the abatement of the Covid-19 epidemic, travel agencies revitalized, and workers in the tourism industry, particularly in the travel service sector, returned to their former roles.

Regarding revenue from tourism, examining the table above shows a steady growth in total revenue from tourism in Vientiane capital during the period from 2016 to 2018. It held a significant position in the capital's GDP scale. Revenue in 2016 amounted to 184,345 thousand USD, increasing sharply to 201,976 thousand USD in 2017 and further to 224,021 thousand USD in 2018.

Table 2. Total tourism revenue of Vientiane in the period 2015-2022

Year	Revenue (Thousand USD)	Absolute increase	Growth (%)
2016	184.345	12.899	7,5
2017	201.976	17.631	9,6
2018	224.021	22.045	10,9
2019	195.076	-28.945	-14,8
2020	82.347	89.729	-57,8
2021	-	-	-
2022	112.505		-42.32% compared to 2019

Source: Vientiane Department of Tourism Management

After the Covid 19 epidemic, 2022 began to have more tourists to Vientiane capital in particular compared to 2020 and 2021, but if compared to 2019, tourists in 2022 are still low and revenue from tourists is similarly low, revenue from tourists in 2022 is 112,505 thousand USD only equal to 57.68% of 2019. This shows onions Tourists' spending has not changed compared to the period before the outbreak of the COVID-19 epidemic.

2. Development of basic tourism services in Vientiane Capital

Firstly, tourist travel services in Vientiane capital

Travel and tourism establishments in Vientiane

The activities of tour operators in Vientiane during the period of 2017 to 2019 displayed increased dynamism, experience, and efficiency compared to the previous period. In 2017, there were only 246 companies and guidance centers concurrently engaged in certain travel business activities. However, by 2022, throughout the entire capital of Vientiane, there will be 334 units and branches operating in this field an increase of 88 units compared to the number in 2017. Among these, 4 units are branches of international travel enterprises, while 330 units are domestic travel entities.

Table 3. Number of travel agencies in Vientiane capital in 2017-2022

Criteria	2017	2018	2019	2020	2021	2022
Travel enterprises	238	292	317	327	327	330
Branches of travel enterprises	8	8	5	4	4	4
Total	**246**	**300**	**322**	**331**	**331**	**334**

Source: Department of Information, Culture and Tourism of Vientiane capital, tourism statistics 2017-2022.

International travel agencies, apart from concentrating on exploiting traditional markets in neighboring countries like Vietnam and Thailand, have recently shifted their focus to tap into the domestic market. This shift has resulted in a continuous increase in the number of international visitors from abroad, indicating an improvement in the capacity of international travel agencies within the province and their ability to attract tourists.

However, travel services predominantly comprise traditional tours visiting natural resorts, historical relics, revolutionary sites, and similar attractions. There are also some newer offerings being introduced, such as tours to the Laos-China metro tunnels and yachting experiences in Vang Vieng.

For efficient operation, the capital of travel agencies in Vientiane includes their own business capital as well as additional mobilized capital, as required. The total domestic capital amounts to LAK 754,797,877,858, while foreign capital stands at LAK 589,662,762,000. In the foreseeable future, travel agencies in Vientiane need to direct their capital towards travel business activities to develop this sector into the most profitable venture, given its potential. This capital mainly comprises the agencies' own funds, with a few contributions coming from employees, investments from customers, and other shareholders.

Secondly, accommodation services in Vientiane capital

Accommodation services in Vientiane Capital have seen considerable development. The number of rooms in 2022 reached 18,869, which on average constitutes 28% of the total number of rooms nationwide. Moreover, the number of rooms has been steadily increasing each year from 2017 to 2022, with an average growth rate of 7.46%, rising from 13,030 rooms to 18,896 rooms.

The range of accommodation establishments in Vientiane capital is quite diverse, offering various options for tourists. There is a presence of resorts, hotels, motels, tourist villas, and more. Particularly within the hotel sector, there are establishments of all classes meeting international standards, and this number is increasing. In 2023, out of a total of 680 accommodation establishments, there are 273 hotels, accounting for 40% of the total. While 1-5 star hotels make up only 90 of these establishments, amounting to 32.9% of the total hotels, the number of rooms they offer constitutes 59.5% of the overall available hotel rooms in the area. Among these, the 5-star hotels, such as La Seine, provide rich and high-quality services, appealing to a significant majority of international tourists visiting Vientiane Capital.

Table 4. Number of accommodation units in Vientiane in 2017-2022

Criteria	2017	2018	2019	2020	2021	2022
Hotel	143	157	187	226	226	273
Motels	311	321	334	356	356	398
Resort	5	5	6	6	6	9
Total	**459**	**483**	**527**	**588**	**588**	**680**

Source: Department of Information, Culture and Tourism of Vientiane capital, tourism statistics 2017-2022.

Accommodation establishments in Vientiane Capital involve participation from various sectors including public, private, individual, and joint ventures with foreign countries, indicating an active accommodation service market in the capital.

With such active participation, accommodation services in Vientiane Capital display a distinct seasonal nature. During the tourist season and major festivals such as water sacrifices and the Nut Luong tower ceremony, the demand for rooms in Vientiane Capital increases, often surpassing the available supply. Foreign visitors to Vientiane Capital primarily

arrive during the rainy season (from May 8 to the following February), while domestic visitors usually visit during the dry season (from 6 to 9 months every year). Particularly for international visitors, they tend to concentrate in high-end accommodation areas such as 3-5 star hotels, whereas domestic guests often prefer budget accommodation services (hotels under 3 stars). Consequently, during the domestic guest season, there is an oversupply of high-end accommodation services. Conversely, during the international visitor season, budget accommodation services face a similar oversupply situation. This presents a significant challenge for accommodation service businesses in Vientiane Capital.

Investment capital in the accommodation service industry in Vientiane.

Capital sources of accommodation establishments in Vientiane: Including state capital, private capital, foreign capital or foreign enterprises invested, and other mobilized capital when necessary. The main purpose of this capital is to upgrade the quality and diversify products and services.

Table 5. Investment capital for the development of accommodation facilities in 2022 (Crew)

	Vientiane Capital	Nationwide	Score
Government investment	102.583.867.817	1.161.127.707.071	8,83%
Private	3.682.382.532.060	42.013.535.066.634	8,76%
Foreign	350.382.000.000	2.978.289.483.748	11,76%
Total	4.135.348.399.877	46.152.952.257.453	8,96%

Source: Department of Information, Culture and Tourism of Vientiane capital, tourism statistics 2022.

This capital is partly the capital of the enterprises themselves and a few are mobilized from employees, calling for investment from customers and other shareholders.

Third, tourist transportation services in Vientiane capital

Vientiane capital currently boasts all four types of transport, including road, air, rail, and river (although the river transport system is not extensively developed). Corresponding to this transport network, various types of vehicles from all economic sectors, mainly private, are utilized to cater to the diverse needs of tourists.

In addition to the aforementioned modern transportation modes, Vientiane Capital offers several types of public transport services to meet travel needs, such as bicycle rental services, motorbike taxi services, motorbikes, and tricycles. Particularly, the tricycle service stands out as the most distinctive within the inner city. International visitors to Vientiane often regard tricycles as a rare mode of transportation worldwide. Presently, there are over 800 tricycles organized into large unions, namely the Vientiane City Tricycle Union and the Faculty Market Bus Station.

Fourth, restaurant services and catering establishments

In Vientiane, as of 2022, there are 273 hotel departments and 234 culinary restaurants, along with numerous small eateries operating without business licenses scattered throughout the districts and cities of Vientiane. Presently, large-scale hotels and motels in Vientiane Capital are equipped with dining rooms serving the needs of eating and drinking for both hotel guests and visitors from outside. These dining spaces offer a diverse range of European and Asian dishes, along with regional Laos cuisine, particularly featuring typical dishes of Vientiane Capital.

Moreover, the external system of restaurants, eateries, bars, cafes, etc., outside the hotel premises is diverse and abundant, with active business participation and flexible organization, meeting the varied requirements of different types of tourists. With over 1,300 dishes, still preserving 700 traditional dishes, the food service industry in Vientiane Capital is known not only for its culinary quality but also for its highly rated service quality among tourists. An outstanding advantage of this service is its affordability, offering meals at relatively low prices.

Fifth, the management of State agencies for the development of tourism services in Vientiane capital

About tourism business management: It is essential to comply with Regulation No. 1150 of the Government Office on the organization and operation of tourism businesses. The management ensures that tourism activities are carried out in accordance with the provisions of the law of Lao PDR.

Regarding environmental management at tourism service establishments: Efforts have been made to implement and achieve positive results. Units in the tourism and service industry have applied various scientific and technological solutions, effectively enhancing the quality of landscape, environment, and national heritage preservation. Specifically:

- Compliance with the law on environmental protection has been well implemented by all levels,

branches, and units engaged in tourism and service business activities in the city.

- Environmental protection aspects are consistently considered and given specific attention during the appraisal and approval process of strategies, master plans, and plans.

- Efforts in propagating, disseminating, and raising awareness about environmental protection have been intensified and diversified in forms, especially through mass media agencies such as newspapers, radio, and television stations. These agencies have published numerous columns, reports, and articles focusing on environmental protection in the city.

- Conducting training sessions and disseminating legal documents on environmental protection, biodiversity, landscape protection, and cultural heritage for various entities at district, commune, and tourism and service business unit levels within the city.

- Coordination among mass organizations, political bodies, and society in the province in environmental protection communication is carried out based on joint resolutions, financial support, propaganda materials, and rapporteurs for organizations and mass associations.

On the conservation and development of tourism resources:

In Vientiane, historical and cultural relics are popular tourist destinations. However, these attractions often suffer from age-related deterioration in terms of facilities and visiting area aesthetics. Therefore, the Lao Tourism Management Board has planned to seek investment and enhancement for key historical sites, gradually implementing comprehensive improvements in the future.

Table 6. Historical and cultural relics to be invested and embellished in the period of 2016 - 2022 (Thousand USD)

Name of monument	Investment capital	Execution time
Patuxay Park	5.020	2022 - 2023
Nut Luong Cultural Heritage	12.000	2018 - 2019
Wat Sisaket ruins	890	2018
Xieng Khuang Buddha Garden	1.200	2016 - 2018

Source: Vientiane Tourism Management Department.

Looking at the data table above, it is evident that Tuong Luong's cultural heritage is a site that has received significant investment capital. This location is quite renowned and popular among tourists visiting Vientiane. Additionally, there has been notable interest and investment in the renovation and embellishment of cultural heritages like Luang Phra-bang and Xieng Khuang Buddha Garden from 2016 to 2018. Specifically, Wat Sisaket is part of the most recent embellishment investment project initiated in 2018.

About infrastructure development:

The socio-economic infrastructure system of the capital has received considerable investment and development, significantly impacting tourism activities in the area. Resorts, hotels, restaurants, entertainment areas, and more are gradually being constructed in a more synchronized manner. These developments create conditions to foster tourism growth, contributing to reshaping the region's appearance. Investments have been directed strategically, attracting various funding sources that yield specific socio-economic effects while also addressing environmental protection concerns. Laos is currently prioritizing major infrastructure projects, such as the Laos-China railway, seen as part of the railway network connecting Kunming, Yunnan province of China to Singapore. Infrastructure at tourist service locations is being carefully addressed and repaired according to the plan.

Despite achieving such positive results, the development of tourism services in Vientiane Capital still has some limitations as follows:

Firstly, destination leadership and management activities have not received adequate attention; they have just begun implementation, and few are operating with stable processes. The tourism development planning lacks realism, resulting in imbalanced investment between accommodation facilities and tourism infrastructure. Individuals and organizations are focusing on investing in the construction of restaurants, hotels, and motels in a spontaneous manner to capitalize on the growing number of tourists. However, this has adversely affected service quality, leading to poor efficiency and impacting the landscape of the tourism environment. Forecasts and strategies are not rooted in reality; they are primarily built on the exploitation of the capital's abundant tourism resources without a foundation in market analysis, competitors, and comprehensive development strategies.

Secondly, the reality indicates that tourism in Vientiane Capital can cause environmental damage and ecosystem degradation, and harm cultural and historical sites. Issues such as garbage and damaged roads are still prevalent.

Thirdly, travel business activities remain limited in terms of scale, capital, and competitiveness. Most businesses focus on exploiting the Thai and Cambodian markets and pay insufficient attention to domestic travel. Marketing teams lack sensitivity and are inactive in seeking markets. They develop stereotypical tourism programs without attention to changes or improvements in the quality of tourist routes. Staff also have limited proficiency in foreign languages.

Fourthly, accommodation services need more investment in quality to meet international standards for restaurant and hotel services.

Fifthly, transportation services require more modern investment. The number of taxis, public buses, and rental bicycles does not meet demand, and some transportation equipment lacks modernization capacity. Schedules and prices of some vehicles lack clarity and are not as promised. Additionally, service staff have weak communication abilities in foreign languages, among other issues.

Sixthly, the competitive landscape, including tactics such as price reduction and employing guides without international tour guide licenses, leads to reduced product quality and dissatisfaction among tourists.

The causes of these difficulties and limitations are due to:

Firstly, the weakness of tourism activities partly stems from the unprofessional and non-competitive operational environment of enterprises, resulting in ineffective utilization of potentials, advantages, service quality, products, human resources, and pricing strategies. To safeguard the rights and interests of business establishments, tourists, and the local community, clubs, travel chapters, and hotel chapters have convened to discuss and establish the Vientiane Capital Tourism Association.

Secondly, public awareness regarding tourism development planning is inadequate, leading to challenges in organizing, implementing, and managing the master plan.

Thirdly, the variety and quality of tourism offerings are inconsistent, lacking competitiveness, and failing to fully capitalize on Vientiane's available potential. There's a dearth of distinctive, expansive, and competitive tourism products in the region, both domestically and internationally, primarily relying on historical pagodas and relics. Services associated with traditional tourism activities, such as "Meditation at Temples," or ecotourism focused solely on visiting gardens and forests without additional services, limit customers' choices.

Fourthly, the entertainment services sector is deficient and underdeveloped, failing to extend guests' stays or increase their spending.

Fifthly, the social infrastructure system lacks synchronization, and investment capital for tourism infrastructure development has numerous shortcomings. There is still a need for better promotion and marketing of local tourism products to meet international market requirements.

Conclusion

Certainly, the growth rate of revenue from tourists, tourism revenue, and the industry's contribution to the economic structure of the Capital is remarkably high. However, the current state of tourism development in Vientiane, Laos, still reveals numerous limitations. Although a considerable number of tourists visit Vientiane Capital every year, the revenue from these tourists remains relatively small due to several reasons: the lack of a systematic plan for tourism service development, the absence of reasonable policies to attract tourists, limited richness and diversity in tourism products and services, ineffective embellishment and exploitation of tourism resources, insufficient tourism infrastructure to meet tourists' needs, and a slow growth rate that does not match the existing potential.

Therefore, in the foreseeable future, Vientiane Capital needs to identify appropriate solutions to overcome these limitations. Doing so will assist in propelling the capital's tourism services to develop in line with regional and global standards.

References:

Ministry of Transport (2023), Air Passenger Transport Statistics Report 2016-2023, Vientiane.

Lao Ministry of Information, Culture and Tourism (2021), Laos Tourism Recovery Plan from the Covid-19 Pandemic Outbreak for the Years 2021-2025, Vientiane.

Department of Statistics - Department of Planning and Investment of Vientiane Capital (2021), Socio-economic statistical information in 2020 of Vientiane capital.

Lao National Assembly (2022), Lao National Assembly's resolution on approving the government's report on the green tourism development plan and opening up the country associated with dealing with the outbreak of the Covid 19 pandemic, Vientiane.

Sengmani PHETHSAVONG (2012), "Some Negative Impact Issues from Tourism in Luang Pha Bang Province" Journal of Political-Administrative Theory, (09), pp.28-32.

Si Ham Phay Number La Thi (2013), "Some issues to be concerned with in the development of participatory tourism", Journal of Political-Administrative Theory, (06), pp.1-7.

Vientiane Capital Department of Transport (2022), Road Transport Statistics Report 2017-2023, Vientiane.

Department of Information, Culture and Tourism of Vientiane Capital (2022), Vientiane Tourism Statistics Report 2017-2022, Vientiane.

Thavipheth OULA (2010), Training Manual on Tourism and Hotel Statistics, Lao National Administration of Tourism, Vientiane.

Department of Tourism Development - Ministry of Information, Culture and Tourism of Laos (2021), Lao PDR Tourism Statistics Report 2021, Vientiane.