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INTERNATIONAL CONFERENCE ON FINANCE, ACCOUNTING AND AUDITING
ACCOUNTING, AUDITING AND FINANCE IN THE DIGITAL AGE

ICFAA 2018



NATIONAL ECONOMICS UNIVERSITY PUBLISHING HOUSE

Hanoi, 2018



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Welcome Notes

Dear Friends and Colleagues,

We extend a warm welcome to all of the speakers and participant of The 1st International Conference on Finance, Accounting and Auditing (ICFAA 2018) under the theme “**Accounting, Auditing and Finance in the Digital Age**”. It provides a unique opportunity for leaders, educators, experts and scholars from all over the world to convene and share novel ideas on crucial issues and trends in the field of Accounting, Auditing and Finance. The qualified papers will be considered for publishing in the Journal of Economics & Development in the special coming issues.

In order to make this conference happen, we have received great contribution from many scholars, reviewers and authors. I would like to take this opportunity to thank **Assoc. Prof. Dr. Wang Jiwei**, Programme Director for Master of Professional Accounting and Master of Science in Accounting (Data and Analytics) at the Singapore Management University (SMU) for your generous support to this conference. Besides, I would like to express my sincere appreciation to our great partners: Cardiff Metropolitan University (the United Kingdom) and the Institute of Chartered Accountants in England and Wales (ICAEW, the United Kingdom). In addition, I would like to say thanks to the track chairs, reviewers for their detailed comments and valuable suggestions; and also say thanks to the speakers and authors around the world for their contributions and interest in our event.

I believe that all delegates will benefit substantially from the conference through the presentations of expert speakers and exchanges of ideas with one another. I wish you all have a wonderful time at the ICFAA 2018.

Thank you very much!

November 23rd, 2018

Prof. Dr. Tran Tho Dat

President of National Economics University



Keynote Speakers

Mr. Mark Billington

FCA, Regional Director, ICAEW South East Asia



Mark has been the Regional Director, South East Asia since 2009. He leads all ICAEW activities across ASEAN and is focused on building out the brand across all markets in the region. After qualifying as an ICAEW Chartered Accountant in 1990, Mark worked in a variety of industry verticals in the Telecoms sector for multi-national, national and start-up companies.

From 2003-2007 Mark was the CEO of O2 (Asia Pacific & Middle East) based in Singapore where he was responsible for the creation of a premium brand in Asia as well as dealing with the supply chain of O2 into Greater China valued at over US\$500m. Prior to this Mark was the COO and SVP for O2 (Netherlands) and oversaw one of the largest outsourcing telecoms deals in Europe during that period valued at €1bn. Before joining O2 Mark held a variety of roles in British Telecom plc including responsibility for strategic investments in France valued at over £4bn.

Mark has over twenty years of experience in evaluating and managing large, complex deals and organizations, and is a frequent speaker and commentator in the region. He currently sits on the Singapore Accountancy Commission's Productivity Advisory Committee having previously sat on the Research Centre and Development Fund Committee.

Assoc. Prof. Dr. Wang Jiwei

Programme Director for Master of Professional Accounting and Master of Science in Accounting (Data and Analytics) at the Singapore Management University (SMU)



Dr. Wang Jiwei is Associate Professor of Accounting (Practice) at the Singapore Management University (SMU). He is also the Programme Director for Master of Professional Accounting and Master of Science in Accounting (Data and Analytics) at SMU. Dr Wang has about 20 years' industry and academia experience in corporate reporting, financial analytics and business valuation. Dr Wang has been doing applied accounting and finance research on international accounting standards, corporate governance and capital market regulations. He published research papers in prestigious international journals such as China Economic Review, Journal of Banking and Finance, and Journal of Business Ethics. He is currently the Judging Panel member of the Singapore Best Annual Report Award. His research has been profiled in the Financial Times, the Straits Times and other local and international media.



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PART I: FINANCIAL ACCOUNTING



**International Conference on Finance, Accounting and Auditing (ICFAA 2018)
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Artificial Intelligence in Accounting and Auditing: Some Solutions for Vietnam

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Abstract

The rapid development of artificial intelligence in the fourth industrial revolution has challenged the whole society, especially in accounting and auditing fields. Accountants and auditors are responsible for preparing and examining the financial records of companies. With the trend of developing machine, there is software that has automated many accounting procedures such as recording, posting, analyzing, preparing report, tax and audit process. This paper introduces the present situation of the application of artificial intelligence in the field of accounting and audit services. After that, it provides some suggestions for accounting and auditing fields in the context of Vietnam.

Keywords: *Artificial intelligence, Accounting, Auditing*

1. Introduction

The fourth industrial revolution is occurring which is enabling businesses to operate in significantly different ways; enabling technologies include artificial intelligence, internetworked physical devices, cyber-physical systems, nanotechnology, and biotechnology. In which, the concept of artificial intelligence (AI) is directly related to accounting and auditing fields. It is not a new concept, it can be traced back from 1936, when Alan Turing first suggested the idea of the Turing Machine which was the basis for theories about computers. With the development of computers and program in the mid-20th century, artificial intelligence is officially supported. Until now, robots or machines have not quite

taken over yet; however AI is presenting all over the fields, from personal digital assistants like Siri in iPhones, Google assistant to report writing to IBM Watson which is a question-answering computer system capable of answering questions . In other words, artificial intelligence is a computer system that can transform human wisdom into productive forces by means of technology (Razi and Madani, 2013) Through the application of artificial intelligence, the user can break the traditional information transmission process due to the transmission speed, cost and quality of a series of bottlenecks between the problems.

Recent progress in AI has been based on techniques such as machine learning and deep learning, whereby algorithms learn how to do things, such as classify objects or predict values, through statistical analysis of large amounts of data, rather than through explicit programming. Therefore, AI can transform and disrupt all the sectors of the economy from technology to finance, communications, energy, healthcare or manufacturing, etc. Professional accountants and accounting practices, procedures, and processes will need to adapt, especially education and training of professional accountants (Amin and Mohamed, 2016)

2. AI in Accounting

The role of accountants is to apply their knowledge about accounting and finance to help business and stakeholders make better decisions. It means they need to capture, prepare, check and communicate information to analysis and make decisions. With technology improved, accountants can provide better and cheaper data to support decision-making; generate new insights from the analysis of data and saving time for other tasks such as strategy development, relationship building, etc. Up until now, there are still limited use of AI in real-world accounting. The first application is using machine learning to code accounting entries and improve on the accuracy of rules-based approaches through accounting softwares, enabling greater automation of processes (McCabe, 2014). Secondly, accountant can detect quickly accounting fraud and some machine learning models can predict better fraudulent activities. Also, accountants can use machine learning-based predictive models to forecast revenues. As can be seen, accountants are encountering machine learning without realising it. In the future, AI can be applied better such as: in managerial accounting, big data will vastly improve effective management control systems and budgeting processes. In financial accounting big data will bring forth relevant accounting information, thereby enhancing transparency and stakeholder decision making. Besides, there is a concept of blockchain. Currently, business and consumers use a trusted party to make transactions like a bank. (McCabe, 2014). However, blockchain is used as a digital ledger worked by a network authorized computers. It helps customers and business connect directly. As a digital ledger, blockchain use cryptography to keep exchanges secure and show transactions that everyone on the network can see.

3. AI in Auditing

Along with accounting session, artificial intelligence also apply to audit industry to improving the quality and efficiency of the audit. The development of data analytic system

enable the auditors to adjust better by transforming the traditional, sample based audit approach to centralized and data driven approaches (McCabe, 2014). For example: 100% data is tested by automated analytical algorithms instead of sample based testing. The artificial intelligence system automatically based on the auditor's prior requirements and the relevant knowledge stored in the system database. It divides several steps of reasoning and judgment, and examines the accounting data and other relevant information of the audited entity. It will automatically find out the existence of all kinds of errors, fraud, abnormal data and changes and other business related suspicious circumstances, presented to the audit staff by generating a list or audit opinion draft form. Artificial intelligence system enables auditors to quickly calculate and make decisions on audit projects, maximize the production benefits of audit services and reduce audit risk. The other development is the present of cloud based software platforms. It helps data to be stored and shared in the cloud, which also requires the cyber security capability in the audits. In the future, artificial intelligence will improve significantly in audit industry. For example: IBM Watson computer system are able to read, listen, learn and process billions of documents per minute. It means, this system can work with all the accounting standards, Generally Accepted Accounting Principles (US GAAP) or International financial Reporting Standards (IFRS), etc and generate the reports. This technology is still not developed, however there is clearly change upcoming.

4. Challenge of Vietnam accounting and auditing market in the fourth industrial revolution

According to experts in the field of accounting and auditing, the Industrial Revolution 4.0 is accompanied by the vigorous development of information technology and artificial intelligence, so auditor audiences also become more complicated. This requires the audit company and the auditors to renew and upgrade themselves to meet new requirements in the performance of their duties. In Vietnam, the State Audit mainly audits on papers, however, the Industrial Revolution 4.0 will make the paper documents are no longer available. Auditors receive more information digitally nowadays, through PDF's for instance, which facilitates their working methods. By using digital working methods and not paper files, they gain advantages such as flexibility and efficiency. They no longer have to carry multiple binders with them, only the computer and possibly scanners and extra computer screens. This allows a freedom to be able to work outside of the office without having to make sure they have all of the binders with them, which makes it easier for the auditors. The good news is that in the Law on Accounting 2015 of the National Assembly and the Government's Decree No. 174/2016 / ND-CP dated 30/12/2016 detailing a number of articles of the Law on Accounting has related provisions about Accounting documents stored on electronic media (electronic documents, electronic invoices ...). This is also the basic requirement for accounting and auditing during the Industrial Revolution 4.0.

However, risk of information, data loss through the Internet connection is also an important issue that management agencies and businesses need to pay attention. Information and audit results may be leaked from emails sending to the audited entities or outside organizations and individuals exchanged via the shared network. Hackers can take advantage

of informal, unofficial auditing results to carry out destructive or pervasive purposes, which can adversely affect badly the image of audit company. At the same time, the quality of IT infrastructure across the accounting and auditing industry generally does not meet the requirements, especially on network security.

Beside the tools changed, working methods also are being changed into a digital method of work. More digital communication on for instance email rather than actual meetings can affect the relationship between the auditor and the client. As a result, it can be perceived that the relationship becomes even more important and relevant to maintain than before due to the paperless working methods

5. Suggestion and conclusion

The Industrial Revolution 4.0 requires government to better prepare their IT infrastructure to keep up with the technology. Accountants and auditors must also improve their IT skills to meet the requirements of the jobs. In the field of auditing, auditing activities in general and the State Audit of Vietnam in particular perform the function of checking, assessing and certifying the reliability of economic and financial information processed by accountants. As a result, changes in procedures, procedures for handling and analyzing information as well as the presenting information in the financial report in the context of the Industrial Revolution 4.0 also require the State Audit to innovate the audit process as well as the use of audit methods.

Secondly, effective and appropriate methods of auditing should be studied and applied in the context of the impact of the Industrial Revolution 4.0. Specifically, methods of collecting, evaluating audit evidence, technical analysis methods in the context of accounting profession using electronic voucher, blockchain technology, cloud computing should be developed.

Thirdly, business ensure safety in the management of network security. The Industrial Revolution 4.0 has pushed up the level of information sharing, thus creating a huge need for cybersecurity. The accounting and auditing authorities should pay special attention to building a data center; upgrade high and multi layer security system, ensure the expansion of the scope of activities is stable and safe.

The competition for high quality human resources in the accounting and auditing sector will be more drastic because at that time the demand for human resources is not only about comprehensive knowledge but also the level of using technology at a very high level. Auditing companies will have difficulties retaining the key employees who have been trained, experienced, especially those who have international certificates, well meet the requirements of large organizations and groups inside and outside due to competition from other countries.

Requirements from the integration and the Industrial Revolution 4.0 require that the programs, content and methods of training bachelor's degree in accounting and auditing at the universities must have an innovation. Training institutions should study and analyze the

characteristics of this revolution to propose and recommend innovations in all aspects. It is necessary to continue to improve the quality of the curriculum with the knowledge that is associated with the development trend of the Industrial Revolution 4.0.

Universities need to apply virtual accounting and audit model to simulate and practice skills for students. When software, electronic vouchers, electronic signatures, calculations have been programmed and automated, the traditional accounting and auditing teaching methods according will be abandoned.

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Transparency and Disclosure Practice in Accounting Reports of State-owned Enterprises: A Case Study of Vietnamese Irrigation and Drainage Management Companies

*Hoang Thi Mai Lan^a, Vu Thi Nam^a
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Submission day: 30/10/2018

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Abstract

The study examines the transparency and disclosure level of accounting report in Vietnamese irrigation and drainage management companies (VIDMCs). The data was collected from accounting reports of VIDMCs posted on their website or other portal for the year 2015-2017. The result of this study provides evidence that although the disclosure practices in VIDMCs are gradually being improved, the level of disclosure is low. Overall, we found that companies do not generally disclose more than is legally required. This reduces the explanatory power of the disclosure data. We expect the situation to improve in future due to a number of factors such as changes to the legal and regulatory environment requiring mandatory compliance with reporting and reporting standards. Usefulness of research is input for VIDMCs to improve transparency and disclosure to enhance quality of accounting reports.

Keywords: *Accounting reports, Disclosure, Irrigation and drainage management companies, State-owned enterprises, Transparency.*

JEL codes: *M41*

1. Introduction

Water is of immense importance to all aspects of life, society and our natural environment. The accelerated increase in global population over the last century coupled with intense economic development is causing unprecedented pressure on this precious commodity.

In Vietnam, the management, operation and exploitation of medium and large irrigation systems, provision of irrigation and drainage services for agricultural production and other livelihoods are performed by VIDMCs. Most of the VIDMCs are state-owned enterprises and the state holds 100% of equity. Thus, these enterprises have two main characteristics, namely, state owned enterprises and public service delivery. They use public resources and may have been given delegated powers and responsibilities that also demand broad accountability to the public and their elected representatives. Broader accountability to the public and their elected representatives is expected from all public sector entities as a function of the democratic process. Public accountability is the overriding characteristic of public sector entities and providing information to demonstrate such accountability is the primary objective of public sector reporting. Public accountability requires a public sector entity to justify the raising and management of public resources and how the resources are used. Public accountability is based on the premise that the public has the “right to know” (PSAB’s 2011). Accounting reporting plays a major role in fulfilling a VIDMCs’ duty to be publicly accountable. The financial statements should therefore ensure transparency and provide the information needed to assess whether they have adequate financial management.

Ensuring a high quality of transparency and accountability is the very basis of any sound corporate governance regime. Disclosure is the very basis for ensuring that SOEs operate efficiently, transparently and on equal footing with private companies. Information disclosure including both financial and non-financial data is essential for the government, so it can be an effective owner; the Parliament to evaluate the performance of the state as an owner; the media to raise awareness on SOE efficiency; and taxpayers and the general public to have a comprehensive picture of SOE performance. The disclosure of information by SOEs aims to ensure the transparency to its citizens about the objectives, operations and performance of SOEs.

The present study has attempted to investigate the level of disclosure in VIDMCs’ accounting reports. The study is divided in two parts. The first part specifies theoretical Framework and Methods about measuring transparency. The second part represents the empirical study based on the analytical investigation of the extent of disclosure practice within the accounting reports of VIDMCs. In the end of the paper it can be found the concluding remarks and directions for further research. This paper identifies several opportunities for further research once additional data becomes available.

2. Literature Review/Theoretical Framework and Methods

This part presents an assessment of literature review on what has been covered by other researchers and analysts on transparency and disclosure practice in accounting reports. The areas covered underpin both the theoretical and empirical aspects of the study.

2.1. Theoretical Framework

Transparency and disclosure

Tara Vishwanath (2001) defined transparency describes the increased flow of timely and reliable economic, social, and political information about investors' use of loans; the creditworthiness of borrowers; government's provision of public services, such as education, public health, and infrastructure; monetary and fiscal policy; and the activities of international institutions. A lack of transparency may exist if access to information is denied, if the information given is irrelevant to the issue at hand, or if the information is misrepresented, inaccurate, or untimely. According to Florin A. (1999), transparency is always closely connected to accountability, so transparency can be defined as the release of information by institutions that are relevant to evaluating those institutions. Thus, disclosure has been identified as one of the most fundamental elements contributing to transparency. Availability of information is essential to minimize the information asymmetry between insiders and outsiders (Healy, P., 2001) and to allow citizens to assess SOE performance. Companies use different ways to disclose information such as annual reports, conference, analyst presentations, interim reports, prospectuses, press releases, websites... Information disclosure can be divided into two categories: mandatory and voluntary. Mandatory disclosure is information revealed in the fulfilment of disclosure requirements of statute in the form of laws and professional standards. Voluntary disclosure is any information that goes beyond compulsory disclosure. Voluntary disclosure refers to the discretionary release of financial and non-financial information which companies are not obliged to disclose by a standard-setting accounting body.

Measuring Disclosure

Disclosure is often viewed as crucial to enterprise' accountability, but its measurement remains elusive. Disclosure is measured in the prior research by following various approaches this section, Omaima Hassan (2010) and Davide Scaltrito (2015) presented measures of disclosure provided in prior studies classified into two approaches including objective vehicles and subjective vehicles.

The first approach is the use of objective vehicles which are based on the direct study of the original information source as content analysis and the use of a disclosure index. One way of measuring information disclosed is to count the number of disclosures made by entities, as the number of words or sentences included in the annual report for example Marston and Shrivs (1991), Hackston & Milne (1996); Entwistle (1999); Williams (1999); Hussainey, Schleicher and Walker (2003); Aljifri and Hussainey (2007). However, this method is limited to higher number of sentences disclosed do not necessarily imply a higher information quality. One way of measuring information disclosed is to count the number of conference calls, which study the frequency with which certain information is disclosed and analysis of the impact positive and negative news has on the level of disclosure. The case studies that apply this approach are Brown, Hillegeist, and Lo (2004) Verrecchia (2004). Brown, Hillegeist, and Lo used proxy disclosure of the number of conference calls made by each company to measure the level of voluntary disclosure, while Verrecchia analyses the number of documents released by the companies in the three previous months before and after a public share offer.

The second approach use questionnaire and interview means to send to financial analysts, investors and other users information about the disclosure practices of the entities. All the vehicles are used directly without relying on the analysis of the original source of the information studies. Some of the typical examples of this approach are including scores elaborated by the CIFAR (The Center for International Financial Analysis and Research) and by Standard & Poor's. CIFAR measure the comprehensiveness of corporate annual reports. The CIFAR index has been used in different studies as a measure of the level of disclosure such as La Porta et al. (1998), Rajan and Zingales (1998), Hope (2002), Bushman, et al. (2004). The Bushman, et al. (2004) measure of disclosures related specifically to financial reporting (voluntary and mandatory), disseminating information through the media and internet, and gaining confidential information and sending it through financial analysts, institutional investors and individuals within the company. Standard and Poor's Institute have performed comprehensive research works for evaluating information provision quality and transparency of the companies with cooperation of academics in different countries. The examples applied the Standard and Poor's index are Botosan (1997) and Tarun Khanna, et al (2004).

Disclosure index

Disclosure indexes are extensive lists of selected items which may be disclosed in corporate annual reports (Marston and Shrieves, 1991). A disclosure index is a research instrument to measure the extent of information reported in a particular disclosure vehicle(s) by a particular entity(s) according to a list of selected items of information (Omaira Hassan, 2010). A disclosure index is a measure representing the level of information provided by the company, which can be considered voluntary and/or mandatory, calculated on the basis of specific elements observed based on one or more specific sources of information (Davide Scaltrito, 2015).

Besides the CIFAR and Standard & Poor's index used in many studies, self-constructed disclosure measures are created by many researchers and the use of these disclosure indexes has become increasingly widespread (Francisco Bravo Urquaza, 2009).

The three different indices used are quality Index, Scope Index and Quantity Index (Francisco Bravo Urquaza, 2009). The quantitative index is used to measure the amount of information disclosed by the companies, only counting the number of sentence units that contain forward-looking information. Scope index is a self-constructed index and it is the ratio of the number of forward-looking information items disclosed by the company to the total number of forward-looking information items that may be disclosed. The list of items chosen is based on the guidance offered by professional bodies and the classification scheme suggested by Robb, Single and Zarzeski (2001), Francisco Bravo Urquaza, (2009). The quality index is claimed to capture both quantity and quality of forward-looking information disclosed by companies. Beretta, et al (2004) believes that the quality of disclosure depends on the quantity of information disclosed and the richness of its content. These researchers assert that disclosure quantity as a component of disclosure quality, yet an assessment on disclosure quality cannot be based purely on this association.

For the purpose of creating a disclosure score, researchers may consider different elements of disclosure. They give the same importance to the items considered by applying an unweighted index, or attribute greater importance to certain aspects rather than others by a weighted index.

Institutional Framework: Transparency and Disclosure regulations in the Vietnamese SOEs

This section discusses the transparency and disclosure in the Vietnamese SOEs through study the regulations and the decisions related to the disclosure and transparency.

The OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2015) outline good practice standards for disclosure and transparency by both state-owned enterprises and the state as an owner. The text of Chapter VI on disclosure and transparency is reproduced below.

State-owned enterprises should observe high standards of transparency and be subject to the same high quality accounting, disclosure, compliance and auditing standards as listed companies.

A. SOEs should report material financial and non-financial information on the enterprise in line with high quality internationally recognised standards of corporate disclosure, and including areas of significant concern for the state as an owner and the general public.

This includes in particular SOE activities that are carried out in the public interest. With due regard to enterprise capacity and size, examples of such information include:

1. A clear statement to the public of enterprise objectives and their fulfilment (for fully-owned SOEs this would include any mandate elaborated by the state ownership entity);

2. Enterprise financial and operating results, including where relevant the costs and funding arrangements pertaining to public policy objectives;

3. The governance, ownership and voting structure of the enterprise, including the content of any corporate governance code or policy and implementation processes;

4. The remuneration of board members and key executives;

5. Board member qualifications, selection process, including board diversity policies, roles on other company boards and whether they are considered as independent by the SOE board;

6. Any material foreseeable risk factors and measures taken to manage such risks;

7. Any financial assistance, including guarantees, received from the state and commitments made on behalf of the SOE, including contractual commitments and liabilities arising from public-private partnerships;

8. Any material transactions with the state and other related entities;

9. Any relevant issues relating to employees and other stakeholders.

B. SOEs' annual financial statements should be subject to an independent external

audit based on high-quality standards. Specific state control procedures do not substitute for an independent external audit.

C. The ownership entity should develop consistent reporting on SOEs and publish annually an aggregate report on SOEs. Good practice calls for the use of web-based communications to facilitate access by the general public.

The disclosure requirements placed on SOEs in Vietnam are set out in Decree 81/2015/ND-CP dated 18 September 2015, where by the disclosure of information to SOEs must be conducted simultaneously through the following information disclosure media: written reports, portals or websites, publications and mass media they are different according to the law. SOEs are also required to publish six-month and annual audited financial statements on their websites, prior to sending them to the responsible line ministry and the Ministry of Planning and Investment.

SOEs are also required to periodically disclose the following information: annual and bi-annual financial reports; five-year business strategies; annual plans for business activities; annual management reports; annual salary reports and annual income reports.

- The development strategy of the enterprise;
- The enterprise's five-year production, business and development plan;
- The annual production and business plan and development investment of the enterprise;
- An annual report on the results of implementation of the annual production and business plan and the latest three (3) years up to the reporting year;
- A report on results of performance of public-utility tasks and other social responsibilities (if any);
- Annual reports on the reorganization and renewal of enterprises;
- Report on the current state of corporate governance and organization;
- Six (06) months financial statement and annual financial report of the enterprise;
- Report on the salary and bonus regime of the enterprise.

Moreover, the enterprise must report to the representative office of the state owner and publicly disclose abnormal information upon the occurrence of one of the events specified in Clause 1, Article 109 of the Law on Enterprises dated 26 November 2014:

- The company's bank account is frozen or unfrozen;
- Part of or all of the business operation is suspended; the Certificate of Business registration, license for establishment, license for establishment and operation, or any license related to the company's business is revoked;
- The Certificate of Business registration, license for establishment, license for establishment and operation, or any license/certificate related to the company's operation is adjusted;
- Replacement of managers, including members of the Board of members, the company's President, Director/General Director or Deputy Director/Deputy General Director, Chief Controller, Controllers, Chief accountant, Head of Finance and Accounting Department;

- There is a decision on disciplinary action, prosecution, a court's sentence of decision against one of the enterprise's manager;
- The inspecting body or tax authority concludes that the enterprise commits violations of law;
- There is a decision to change the independent audit organization or the financial audit is refused;
- There is a decision on establishment, dissolution, amalgamation, merger, conversion of subsidiaries; decision on investment, capital decrease, or withdrawal capital in other companies.

2.2. Review related studies

Previous studies on information disclosure practice are extensive, covering a wide range of issues and using a variety of disclosure measuring methods. This part focuses to review empirical aspects of the study which about identifying the extent of information disclosure.

Tarun Khanna Krishna, Palepu and Suraj Srinivasan (2003) have conducted the study "Disclosure Practices of Foreign Companies Interacting with U.S. Markets?". In their study they analyse the disclosure practices of companies as a function of their interaction with the U.S. markets for a group of 794 firms from 24 countries in Asia-Pacific and Europe and uses the Transparency and Disclosure scores developed recently by Standard & Poor's. The results are broadly consistent with the hypothesis that cross-border economic interactions are associated with similarities in disclosure and governance practices.

Snjezana Pivac, Tina Vuko & Marko Cular (2017) studied on "Analysis of annual report disclosure quality for listed companies in transition countries". High quality annual reports can contribute significantly to a company's success. The purpose of this study is to analyse and compare the level of annual report disclosure quality for listed companies in selected European transition countries by using a constructed disclosure quality index. The results suggest that Slovenian companies have the greatest level of disclosure quality and that there are significant differences in disclosure quality of annual reports between the observed countries.

Saeed Askary, Beverley Jackling, (2005) measure the financial disclosure diversity in Asian countries with a view to developing a classification of their similarities and differences in respect to their compliance with International Accounting Standards (IASs). The data are collected from Annual reports of 126 public companies listed on the countries' stock exchanges, supplemented with other relevant information about financial disclosure practices in each country. Results show the relative degree of conformity with IASs for each of the countries included in this study.

Mohammed Hossain (2008) conducted an empirical investigation of the extent of both mandatory and voluntary disclosure by listed banking companies in India. The results show that size, profitability, board composition, and market discipline variables are

significant, and other variables such as age, complexity of business and asset-in-place are insignificant in explaining the level of disclosure. Moreover, findings also indicate that Indian banks are very compliant with the rules regarding mandatory disclosure but they are far behind in disclosing voluntary items.

Vo Thi Thuy Trang and Nguyen Cong Phuong (2015) examine levels of the disclosure in the annual reports of the listed companies listed on HOSE in 2013 by applying disclosure indexes to measure the amount disclosure information in the annual report of these companies. The results indicate that the levels of the voluntary disclosure in the annual report by the listed companies is low at 23,9%.

Dr. Deepa Mangala and Isha (2015) analysed the disclosure practices in annual reports of Indian firms by using the appropriate disclosure indices using items from annual reports. The data have been analysed by descriptive statistics. The results reveal a significant variation in the disclosure score across various disclosure items, companies and industries. It was also found that corporate governance information has been highly disclosed by the firms, whereas, forward looking information has been least disclosed by the sample companies.

2.3. Research Methods

Data and sample selection

In this part of our study to exemplify the disclosure level of VIDMCs. The population investigated in the present paper consists of all VIDMCs. Our sample consists of all companies listed from statistics of the Directorate of Water Resources. We collect data from the accounting reports these companies during the period 2015-2017. We choose this period because Decree 81/2015/ND-CP takes effect on November 5, 2015. Information for the extraction and analysis of information content for the purposes of the study is from different channels such as companies' website, business.gov.vn and other portal.

Measurement method to assess the disclosure quantity

As indicated by the OECD (2017) on Vietnamese SOEs: "In practice, SOEs' do not consistently comply with the state's disclosure requirements. According to research undertaken by the Central Institute of Economic Management (CIEM), only 130 out of the 432 SOEs examined disclose information in accordance with Decree 81 (mentioned above). There are currently no penalties in cases of non-compliance". Hence, in the context of Vietnam, we will evaluate the practice of transparency and disclosure of accounting reports for VIDMCs by using the scope index. Base Decree 81/2015/ND-CP and OECD (2015), We propose the following categories of forward-looking information: The enterprise's five-year production, business and development plan (1); The annual production and business plan and development investment of the enterprise (2); An annual report on the results of implementation of the annual production and business plan and the latest three (3) years up to the reporting year (3); A report on results of performance of public-utility tasks and other social responsibilities (if any) (4); Annual reports on the reorganization and renewal of enterprises (5); Report on the current state of corporate governance and organization (6); Six

(06) months financial statement and annual financial report of the enterprise (7); Report on the salary and bonus regime of the enterprise (8) and Abnormal information (9).

We used an unweighted index, if the required item is disclosed, it is scored as 1 and if it is not disclosed, it is scored as 0. Then, the collected data were analysed descriptive statistics by using excel software.

Table 1. Score index

No	Information item	No disclosure	Disclosure	Note
1	Has the company publicly disclosed the development strategy of the enterprise?	0	1	If the reports were published last year, they shall be deemed to have been published in the following year.
2	Has the company publicly disclosed the enterprise's five-year production, business and development plan?	0	1	
3	Has the company publicly disclosed the annual production and business plan and development investment of the enterprise?	0	1	
4	Has the company publicly disclosed An annual report on the results of implementation of the annual production and business plan and the latest three years up to the reporting year?	0	1	
5	Has the company publicly disclosed a report on results of performance of public-utility tasks and other social responsibilities (if any)?	0	1	
6	Has the company publicly disclosed Annual reports on the reorganization and renewal of enterprises?	0	1	
7	Has the company publicly disclosed the Report on the current state of corporate governance and organization?	0	1	
8	Has the company publicly disclosed which Board member qualifications, selection process, including board diversity policies, roles on other			

No	Information item	No disclosure	Disclosure	Note
	company boards and whether they are considered as independent by the SOE board?			
9	Has the company publicly disclosed annual financial report of the enterprise?	0	1	
10	Has the company publicly disclosed Six months financial statement?	0	1	
11	Have annual financial statements been audited by an independent external audit?	0	1	
12	Has the company publicly disclosed any material foreseeable risk factors and measures taken to manage such risks?	0	1	
13	Has the company publicly disclosed any financial assistance, including guarantees, received from the state and commitments made on behalf of the SOE, including contractual commitments and liabilities arising from public-private partnerships?	0	1	
14	Has the company publicly disclosed any material transactions with the state and other related entities?	0	1	
15	Has the company publicly disclosed Report on the salary and bonus regime of the enterprise?	0	1	
16	Has the company publicly disclosed the remuneration of board members and key executives?	0	1	
17	Has the company publicly disclosed Abnormal information?	0	1	

Source: Author

Company Disclosure:

The level of company disclosure is measured by the ratio between the score of the company and its maximum possible score for not to penalize it for non-disclosing items when they are not relevant to its activities.

$$CDi = \frac{\sum_{j=1}^{17} SCji}{Mi} \quad (1)$$

With:

CDi: Total index for company "i";

Mi: Maximum number of items of which disclosure is possible for company "i";

SCji: Score of item "j" of company "i", SCji= "1" if item j is disclosed and = "0" otherwise

Item Disclosure

The level of item disclosure has been calculated by dividing total number of companies disclosing such item by total number of companies under the study for all the years.

$$IDj = \frac{\sum_{i=1}^{87} SCji}{T} \quad (2)$$

With:

IDj: Total index for item "j"

SCji: Score of item "j" of company "i", Scji = "1" if item j is disclosed and = "0" otherwise

T: Total number of companies under the study for all the years

3. Results and Discussion

3.1. Company Disclosure

Table 2 contains the descriptive statistics for the values of the indices.

Table 2. Descriptive Statistics: Company Disclosure

Year	Mean	Median	Standard Deviation	Minimum	Maximum
2015	0.2293	0.1176	0.2496	0.0000	0.7647
2016	0.4285	0.5294	0.3147	0.0000	0.8824
2017	0.4501	0.5294	0.3024	0.0000	0.8824

Source: Author

According to the statistics of the Directorate of Water Resources, Vietnam has all 88 VIDMCs, one of which is Nam Song Thuong Irrigation Company established in 2018, so the company is not in the survey. The results of the survey show that there are 72 companies which publish information mainly on the business.gov.vn, several companies simultaneously disclose on their website, the remaining companies do not disclose annual reports, so the median differ from the mean.

The analysis shows that the level of information disclosure has improved over the years. However, the level of disclosure is not high and there is a large dispersion. The above table depicts that the Mean is 0.450, Median is 0.5294 and Standard Deviation is 0.3024 in 2017. Furthermore, the highest level of disclosure score is 0.8824 while the least level of disclosure score with average disclosure score is 0.0000.

3.2. Item Disclosure

Table 3 represent the level of disclosure of various items over the period of study by the selected companies.

Table 3. Item Disclosure Score of VIDMCs

Item/Year	2015	2016	2017
The development strategy of the enterprise.	0.0115	0.2184	0.1954
The enterprise's five-year production, business and development plan.	0.0690	0.4598	0.4598
The annual production and business plan and development investment of the enterprise.	0.1379	0.4713	0.5517
An annual report on the results of implementation of the annual production and business plan and the latest three (3) years up to the reporting year.	0.2759	0.4943	0.3908
A report on results of performance of public-utility tasks and other social responsibilities (if any).	0.3563	0.4598	0.4483
Annual reports on the reorganization and renewal of enterprises.	0.2759	0.4598	0.5057
The Report on the current state of corporate governance and organization.	0.2874	0.5057	0.4023
Board member qualifications, selection process, including board diversity policies, roles on other company boards and whether they are considered as independent by the SOE board.	0.2874	0.5057	0.3793
Six months financial statement.	0.0690	0.3563	0.3333
Annual financial report of the enterprise.	0.3793	0.5632	0.6667
Annual financial statements have been audited by an independent external audit.	0.3793	0.5632	0.6782
Material foreseeable risk factors and measures taken to manage such risks.	0.1724	0.1954	0.2069
Financial assistance, including guarantees, received from the state and commitments made on behalf of the SOE, including contractual commitments and liabilities arising from public-private partnerships.	0.2759	0.3908	0.5172

Item/Year	2015	2016	2017
Material transactions with the state and other related entities.	0.3448	0.5287	0.6437
Report on the salary and bonus regime of the enterprise.	0.2759	0.5632	0.6667
The remuneration of board members and key executives.	0.2759	0.5747	0.6667
Abnormal information.	0.0000	0.0805	0.0460

Source: Author

The results show that the level of disclosure of items increased over the years, so VIDMCs increasingly comply with the regulations of the state. However, the level of disclosure of these items is not high, the highest disclosure level is only 0.6782 (Annual financial statements audited by an independent external audit, 2017). In 2017, nearly 70% of companies disclosed Annual financial report, Report on the salary and bonus of the enterprise and the remuneration of board members, which are followed by the annual production and business plan and development investment of the enterprise, Annual reports on the reorganization and renewal of enterprises and financial assistance. Whereas, the development strategy of the enterprise, Material foreseeable risk factors and measures taken to manage such risks and abnormal information have been least disclosed by the sample companies. Furthermore, the score of remaining items (The enterprise's five-year production, business and development plan, an annual report on the results of implementation of the annual production and business plan and the latest three years, the Report on the current state of corporate governance and organization, Board member qualifications, selection process, Six months financial statement) is between 0.3 and 0.5.

4. Conclusions and Policy Implications

The main purpose of the article has been to analyse the level of VIDMCs' compliance on the disclosure of accounting reports in accordance with state regulations. Although the level disclosure by VIDMCs improved during the study period, the current level is not high and there are major differences between the companies. The most important information that VIDMCs have least provided in the annual reports consists of: The development strategy of the enterprise, material foreseeable risk factors and measures taken to manage such risks and abnormal information. Also, non-financial information (such as the salary and bonus regime of the enterprise, Financial assistance, including guarantees, received from the state and commitments made on behalf of the SOE, material transactions with the state and other related entities) is only disclosed in general, the content of the report is not quantified.

The low level of disclosure by VIDMCs has been explained by some following reasons. Firstly, the legal regulations of the state are not strong enough for VIDMCs disclosure adequately and qualitatively. Secondly, managers as well as accountants in VIDMCs lack aware of the importance of publishing accounting reports. Finally, residents who use public goods do not care about accounting reports which are as tools to assess performance of VIDMCs.

Bases on the research result, we have some suggestions should be made to policy regulators and managers:

- The sanctions stated in the law must be applied on the violating companies that are not committed to disclosure

- Holding workshops and conferences to raise awareness about the importance and role of VIDMCs and the importance of accounting disclosure in guiding and raising accounting awareness which support making the rational decision.

- Drawing the attention of citizens to the importance of disclosed information in VIDMCs to monitor which VIDMCs manage and use public resources.

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**Proposed Guidelines on Accounting for Government Grant to Compliance
with International Accounting Standards**

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Abstract:

This article mentioned all the international accounting standards, in order to orient the contents should be added, modified in the accounting standards which was issued and issue new accounting standards to meet with international accounting standards and in accordance with the conditions of Vietnam, including accounting standards on government grants and gives out information of government grants and at the same time, do the analyze the current regulations of Vietnam accounting system of government grants so that this article can provide recommendations for the guidance, specific additional accounting of subsidies government to meet the international accounting standards.

Keywords: *Accounting, International accounting standards, Government grant*

1. Introduction

Vietnam's enterprises always have supports from the Government of Vietnam through different forms during their operating process. Annually, with national objectives related programs, the Government has spent billions subsidizing enterprises in a variety of areas in order to untangle challenges for business activities, promote exports, enhance job security; or give supports to the market, raising demands... The Government's forms of subsidizing can be grant relating to assets, earnings, loans, interests, grant relating to taxes like tax exemption or reduction, or tax breaks, grant relating to losses covering like covering

losses within taxed interests, enabling enterprises to establish funds for the development of science and technology that can be counted into fees before calculating taxes relating to the enterprise's revenue etc... These forms of subsidizing can be conducted either directly or indirectly for enterprises through activities for common purposes. In fact, there is currently no document that properly instructs how to perform accounting on government's grants and show information about Government's grants; accounts recording and showing information about grants from the Government are usually just recorded in enterprises where the Government is one stockholder and mainly recorded under the subsidizing form through assets. Given the circumstances, most of the subsidizing forms of Government have not been recorded and announced by accountants in enterprises, or even when such records exist, they do not show the actual deal. This fact came from the inadequacy in the principles themselves for the current regime for enterprises accounting, which has not established accounting principles with scientific standards to suit international accounting standards, lack in content, not able to reflect exchanges happening from actual activities of enterprises when receiving grants from the Government. The consequence is the Government's inability to control and manage the grants that they have subsidized for enterprises, hence not being able to maintain strictness in performing law principles regarding the budget, finances and accounting. From the above reasons, delivering content that needs instructing about accounting grants from the Government and showing information about Government's grants to suit international accounting standards in enterprises is absolutely necessary.

2. Research Overview

The book *Améliorations des IFRS - Completing standards for International Financial Statements published in 5/2008* by Sebastien Arcand claimed that the scope of governmental authorities include: The Government, public authorities, similar national organizations. Government's grants are the way governmental authorities provide a special financial advantage for a unit or an organizational form with certain conditions. Grants from the Government of this kind do not include indirect advantages earned when adhering to mutual conditions in financial activities like infrastructure in construction areas, taxes in the conditions of commerce and competition... Grants relating to assets are the ones with the main condition being the unit subsidized had to buy and build fixed assets. Extra conditions could be added to limit the type of assets or the period that assets are bought or built.

According to *Robert S.Kaplan, Anthony A.Atkinson, Advanced financial Accounting, third Edition, Prentice Hall International, Inc*: When accounting government's grants, there are two points to consider: Firstly, when the government delivers the grant, and secondly when using such grants in activities according to pre-determined objectives. Accounting the grants of government needs to show the difference between the receiving period and the period prior and after receiving the grant.

The situation in which loans have smaller interests than interests in the market is also treated as governmental grants. These loans also need being accounted appropriately with IFRS 9 - The financial tool. The benefits earned are the difference between preferential

interest rates and market interests multiplying with the original loans. Accounting units need to research conditions and responsibilities needed to be complied especially fees attached to benefits from governmental grants. When governmental grants are accounted, all assets, potential loans are dealt with according to IAS 37 – Provision, paying debts and potential assets.

Apart from that, governmental grants need to be accounted into results organizedly through periods that match with the accounting of fees relating to grants.

According to the authors *John Blake, Pilar Soldevila & Philip Wraith (2003)*, “*The dimensions of, and factors giving rise to, variations in national management accounting approaches*”, *European Business Review*, Vol. 15, Iss. 3: Governmental grants are not accounted when there’s no proper insurance that the unit has sufficient conditions attached to that grant. Only receiving an grant is not enough to conclude that conditions to be subsidized are sufficient. The way of receiving the grant does not affect the accounting method to be applied. The act of accounting grants does not differentiate receiving actual cash or reduction in liabilities and budget contribution. A loan would become grants if there were assurance that the unit completed conditions regarding the ability to be exempted from re-paying the loan.

In accordance with the research on Instructions to perform English standards “Issues for first-time adopters of FRS 102”, which could be accessed through www.inform.pwc.com.

FRS 102 are the standards for financial statements on governmental grants applied for the UK and Ireland. In this research, PWC carried out detailed instructions when applying FRS 102 standards to account for governmental grants in reality. This research focuses on answering concerns that enterprises usually face when applying these standards, which leads to them being too focused on solving deals arising from the fact that they received governmental grants, hence the low ability to generalize the problem, while what matters to readers is to solve the problem based on scientific principles.

In accordance with the research on theoretical as well as practical problems when applying the international standards IAS 20 in Romani by co-authors Mates Dorel, Mot Ioana và Aura Domil in the article “Conceptual Approaches concerning government grants (Romania case study)” published on the journal Agriculture Management. 2013, Vol. 15 Issue 3, p 29-34.

In this research, the authors went deeply in to analyzing basic components of standards, including: concepts, scope, categories, utilizing methods to account governmental grants... and authors provided specific situations to instruct how to apply principles of the above standards in practice. Besides, the authors also mentioned principles from regulations built by the EU that affect the accounting process of governmental grants. In general, the group of authors concluded that IAS 20 have solved all problems related to the accounting process of governmental grants and loans.

In Vietnam, regarding researches on governmental grants in enterprises, there are currently probably too few research projects of accountants that have been organizedly done on this matter.

In accordance with the reseach by Associate Professor. Doctor Doan Van Anh in the article “Science and Technology developing funds – problems in accounting and proposal for completion” published on the Accounting and Auditing Journal (vol 6/105), 2012.

In this research, the author concentrated on problems in principles for accounting records on establishing enterprises funds for the development of Science and Technology to be recorded as enterprise expenses, in which the rate to establish is approximately 10% of revenue, which are calculated as a subtraction in revenue after taxes. Based on the analyses on problems of current principles, on the opinion and rules for completion, the author proposed accounting records about the establishment of the enterprise’s Science and Technology Developing fund, the parts of fund set up by the supports of the government need to be noted as a reduction in the amount submitted to the government on TK 333 (3334 in particular) “Enterprise Revenue ”, the parts of fund built by the revenue after tax of enterprises have to be counted as a deduction in revenue left for enterprises on TK 421 “Non-distributed Revenue”.

As can be generalized from the aforementioned research projects, they have not properly solved the problems arised from within the deals, not fulfilling all forms and methods of subsidizing from the government to enterprises, as well as not offering specific principles in accounting records of governmental grants to match international accounting standards.

Focusing on the gaps within the above research projects, the author of this research will carry out contents that needed instructing about the accounting process and presentation of governmental grants to match international accounting standards (IAS 20)

3. Objectivities and Methodologies

The objectivities of this article is to study all international accounting standards in order to guide the content that needs to be supplemented and revised in the accounting issued standards and to promulgate new accounting standards that accordance with international accounting standards & Vietnamese conditions. In case that, There are accounting standards for government subsidies and information on government subsidies. Then we propose specific guidelines and supplements on the accounting of government subsidies in line with international accounting standards.

In order to complete this research, the author has applied some research methods such as statistics; data synthesis and types of literature synthesis for comparison, analysis government subsidies.

Specifically, the research methods that used in this article are including that: data & information collection method; secondary data collection method; The topic of analysing the status of the Vietnamese accounting system for the government subsidies. In addition, the author also studied the science topics, many scientific papers, speeches, doctoral

dissertations, Master's thesis on accounting for government subsidies. Primary data collection method: The author conducts depth interviews. After obtaining information orientation, the data needs surveying and collecting, The author interviews some financial officers from important agencies such as the Ministry of Finance, Vietnam Association of Accountants and Auditors and university lecturers on accounting for government subsidies.

Secondly, the method of synthesising and processing information Secondary information and data are arranged according to each research content and divided into 3 groups: overview of the researching and literatures of related management agencies, the statu of the Vietnamese accounting system for government subsidies; Provide guidelines on accounting for government subsidies and present information on current government subsidies. Information analysis: All primary data that collected from depth interviews will be analyzed by comparative analysis and expert method.

4. Principles of Vietnam's accounting system regarding the accounting of Governmental grants in reality

In the trend of international economy integration, Vietnam has various encouraging and supportive policies for enterprises to develop towards the government's specific objectives, including:

- Land Lease Expense reduction or exemption in a certain period of time;
- Enterprise Revenue Taxes reduction or exemption in the field of Production Business or in the area of preferential investment;
- Loans with preferential interest rates;
- Interest Rates Support after investment;
- Price Subsidies for activities related to social welfare like bus business;
- Cash sponsoring for investing activities;
- Estate sponsoring.

In reality, in prior years, there have arisen grants or supports from the government, typically in recent years when Intel Corporation (of the USA) invested in the establishment of Intel Products Vietnam LLC, the government of Vietnam has subsidized three amounts: Cash supports and spnsoring for the investment project, tax exemption and leasing land with no costs in 50 years.

The situation in which Intel Corporation is exempted from land leasing expense in 50 years equals the fact that Intel is subsidized annually by the Government an amount equivalent to the land leasing expense other enterprises have to spend in the industry zone.

Preferential Tax Rate of 10% in 15 years. 4 year of Tax exemption, 50% tax reduction in the following 9 years for enterprises that conduct research on the development of science and technology, application of high-tech in the list of highly technological products are preferred for investment and development according to the regulations of High Technology

Law, creating high technology, creating enterprises with high technology, risky investment for the development of high technology in the list of high technology is preferredly developed according to the law regulations on high technology, investing on the establishment-trades of facilities that create high technology or create high technology enterprises; investing on the development of Water Plant, Power Plant, Water Supply System; Bridges, roads, railways, airports, seaports, river ports, airports, train stations and other especially important infrastructure according to decisions made by the Prime Minister, producing software products (investment projects to produce softwares in the list of software products and adhere to software producing process according to law regulations), producing composit materials, light-weight constructing materials, rare and precious materials; production of renewable energy, clean energy, energy from waste destruction, biotechnology development

However, until now, Vietnam has not published accounting standards on governmental grants and presented information on governmental grants in accordance with international accounting standards (IAS 20) that are published in 1983 and supplemented in 2008 by IASB and IFAC.

The current regime of enterprise accounting (Circular No. /TT-BTC) has not instructed how to account governmental grants and present financial statements with information on governmental grants. Circular No.200/TT-BTC regulated governmental grants recently mentioned the following problems:

- Principles relating to activities of receiving the capital provided by the government are recorded directly as owner's equity according to the value on records of capital transferring. Specifically, No. 67 regulated Account 411 – Owner's investment capital reflects owner's equity including non-refundable grants, other receivables are allowed by authorities to record as an addition in owner's equity.

- No. 79 regulated account 511 – Revenue from sales and providing services. There are principles relating to “Revenue from price supports” on account 5114 under the circumstance when enterprises conducted the mission to provide products, goods and services according to the demand by the government. This financial benefit is recorded by the enterprise as an amount payable to the government on account 3339 “Fees, fares and other amounts payable”. These principles of the accounting regime only mentioned about solutions to handle deals regarding assets supports and supports through the price of products, goods, services sold to enterprises. These principles have not solved entirely all problems arised from within the deals, not fulfilled all forms and methods of subsidizing from the Government to enterprises.

- No. 93 regulated the account 711 – Other amounts of revenue reflects revenue from presents, gifts in cash or tangible forms from individuals or organizations to enterprises;

However, the above regulations are still simple, not differentiating between grants and supports, not including requirements about conditions to record grants, gradually distributing

grants, not having mentioned the capital or revenue method in recording grants and not consisting of presenting requirements about grants and supports from the Government.

5. Some proposals for guidelines of the accounting process of governmental grants and presenting information about current governmental supports

Therefore, in the upcoming time, the Ministry of Finance needs to conduct research and publish accounting standards and instruct how to account governmental grants and present information about governmental grants in such a way that matches IAS 20. These principles are the basis for enterprises to uniformly conduct accounting methods as well as sufficiently present information about governmental grants and supports. From there, financial statements readers have enough information about the influence of governmental grants on the financial condition and financial outcomes of enterprises. The primary content that need instructing includes:

5.1 Requiring research to publish accounting standards on governmental grants and present information about governmental grants

5.1.1 Scope of this accounting standards application:

This standard regulated the identification of accounting methods and presentation on governmental grants. This standard does not apply to:

- The special arisings in the accounting process of governmental grants on financial statements when there are changes in pricing or in supplementary information about relating actions.

- Governmental grants for enterprises under different forms to identify revenue with tax or to limit the basis to calculate taxes for enterprises' revenue. An example for such benefits is the amount of time for tax exemption, tax reduction when investing and the reduction in taxes for enterprises' revenue

- Enterprises whose owners are the government;

- Governmental grants regulated in agricultural accounting standards.

5.1.2 Terminologies used in this accounting standard need to be differentiated:

- *The government Chính phủ* is governmental authorities and equivalent authorities regardless of being local, national or international.

- *Government grants*: is the act of government delivering power to enterprises with the condition that in the past or future enterprises must comply with certain conditions from the government in their business activities. These grants do not include governmental grants without specific value and exchanges with the government that are not different from normal exchanges of the enterprise.

- *Grants relate to assets*: are the grants from the government that enterprises having sufficient conditions to receive the grant must purchase or invest in building fixed assets and using them for their own financial. Conditions to receive the grant are the limits on types of assets, specific location and certain usage time of assets that was bought or invested to build.

- *Grant related to income*: are governmental grants that are not assets related ones.
- *Forgivable loans*: are the loans in which lenders can forgive the loan in certain circumstances with prior agreement.

The case when enterprises receive governmental grants has important meanings so it has to be recorded and presented in financial statements for 2 reasons: (i) Grants when being transferred need to be accounted appropriately; (ii) Benefits that enterprises earn from the reporting period of the supports need to be clearly identified and presented. This assists the comparison between the financial statement and prior accounting periods, or between different enterprises for being subsidized or not.

5.1.3 Governmental Grants

Firstly, a grant from the government, including those grants not related to cash but are identified with a reasonable value, will be recorded when the enterprise properly ensure that:

- The enterprise has sufficiently complied to all required conditions to receive the grant and
- Will definitely receive the grant.

A governmental grant will not be recorded until there is a certain insurance that the enterprise has sufficiently complied to all attached conditions and received the grant. Receiving a grant is not the proof to conclude that all conditions attached have been achieved.

Grants in different forms have to be accounted with the same method, regardless of whether they are in cash or as a reduction of liabilities to the government.

A loan can be forgiven by the government and be considered a governmental grant when there is reasonable insurance that the enterprise will obtain conditions needed for the loan to be forgiven.

Benefits from a governmental loan with lower interest rate than market ones is considered a governmental grant. This loan is recorded and identified according to accounting standards of Financial tools: Recording and Identifying. Benefits from the loan with lower interest rates than market ones are counted based on the difference between the value recorded for the loan which was identified according to accounting standards on financial tools: Recording and identifying the actual amount received. The benefits are accounted in accordance with this accounting standard. Enterprises need to consider conditions and responsibilities that need to be obtained when identifying expenses to benefit from the loan.

When a governmental grant is recorded, all assets and related potential loans have to be conducted according to the principles of accounting standards about provisions, assets and potential loans.

Secondly, Governmental grants are recorded in the financial outcomes report organizedly during accounting periods that enterprises record expenses related to the amount of grant received.

There are two approaches for accounting Governmental grants in accordance with IAS 20 for enterprises to choose from, which are:

- Capital approach, by which the grant is recorded in the Balance Sheet. The theoretical basis for this approach is: (i) Governmental grants are financial tools that do not need to be refunded so they should be recorded in Balance sheets rather than Business reports to balance with related expenses; (ii) Recording governmental grants in business reports is not appropriate because they are not revenue generated by enterprises themselves so they should be shown as a supporting amount from the government for enterprises.

- Income approach, by which grants are recorded in one or multiple business reports. The theoretical basis for this approach: (i) Governmental grants are not received by stockholders, so they should not be recorded as capital but should be reflected into business reports of the right period; (ii) enterprises could only receive governmental grants when they have insured that all attached conditions have been met, so these grants need to be recorded in business reports during the accounting period with the arising of relating expenses to compensate for these expenses; (iii) When revenue and taxes are expenses, the recording of grants is a part of the fiscal policy, which makes it appropriate.

An example to differentiate these 2 approaches is: The enterprise is subsidized to develop the investment plan in fixed assets, according to the capital approach, the grant is recorded with the original price of fixed assets and according to the income approach, the grant is recorded in periodical revenue appropriate to the depreciative time of fixed assets that were invested to build as a condition of the grant.

Considering the condition of Vietnam, the author proposes that the income approach should be applied.

Thirdly, governmental grants need to be recorded logically in accounting periods to report business outcomes to compensate for related expenses that arose in accordance with appropriate principles. For example, when subsidizing for investment and construction projects, the grant is recorded in periods suitable with the depreciative time of fixed assets that were invested to build as a condition of the grant. The recording of governmental grants right at the receiving moment is not in accordance with accrual accounting principles, except for when enterprises have no basis for the distribution of grants in multiple periods rather than recording them in the receiving period of the grants.

In most cases, the recording periods of expenses related to governmental grants are usually specific. Therefore, grants are recorded in suitable revenue to related expenses that arise in the same period (like the loan with preferential interest rates). Similarly, grants related to fixed assets with a depreciation amount will have to be recorded equivalent to the depreciation amount recorded on business reports.

Grants related to fixed assets that are not calculated with depreciation might be involved in conducting some liabilities and are recorded in business reports in the periods where expenses arise to perform those responsibilities. For example: Enterprises that are given the right to use the land under the condition of having to construct a building onto that land, so the recording of the grant is conducted during the period relating to the construction of the building.

In some cases, grants are a part of the financial or fiscal supporting package, with many conditions attached. In these cases, it is crucial to carefully examine the identification of conditions that make expenses arise to determine periods to record grants. It would be suitable if a grant can be distributed one part according to one approach and one part after another approach.

A governmental grant is an amount receivable when the compensation for expenses or losses arise or for the purpose of supplying direct financial supporting amount for enterprises without the arising of related expenses in the future will be recorded in the period that it was noted as an amount receivable.

In some cases, a governmental grant with an aim to supply enterprises with a direct financial supporting amount rather than encouraging the conduct of specific expenses. These grants are meant for certain enterprises, the case of which has to be recorded in the revenue of the period that enterprises have obtained sufficient conditions to receive grants and be presented clearly for the influence of grants to be rightfully understood.

A governmental grant could be an amount receivable of enterprises to compensate for expenses or losses that arose in prior periods. These grants are recorded in revenue in the period when the grant is noted as an amount receivable.

Forthly, the governmental grant is not in cash

A governmental grant could be the exchange of assets rather than in cash like the authority to use land or other resources for an enterprise to use. In these cases, such assets are identified with reasonable value and grants as well as assets are accounted according to the rational value. In some cases, enterprises record the grant according to the nominal value.

5.1.4 Presenting the grants related to assets

Governmental grants that are related to assets, including assets not in cash which are identified with rational values, according to IAS 20, will be presented on balance sheets: (i) like a delayed revenue or (ii) deducted from the value of assets.

The case when grants are recorded as delayed amount of revenue and distributed logically throughout the time the assets have beneficial usage. For example, enterprises are funded by the government for the construction project, account payable 3387/ account 5114.

5.1.5 Presenting grants about revenue

Grants related to revenue, according to IAS 20, enterprises present on business reports into a separate revenue objective about grants, price supports or in the target “Other revenue” or are deducted to related expenses.

5.1.6 Returning Governmental grants

The returning of a governmental grant is accounted as a change in accounting estimates. Returning a grant related to revenue is initially recorded as a deduction in delayed revenue that was recorded before but at the returning time the grant was not fully distributed. If the amount of grant payable is larger than the undistributed delayed revenue or there is no undistributed delayed revenue, the paid amount of grant is recorded immediately in business reports. The returning of the grant related to an asset is recorded by recording depreciatively the undistributed delayed revenue with an equal amount to the amount payable. Compound depreciation supposed to be recorded in business reports until the day when grants are discontinued has to be recorded right in business reports.

5.1.7 When presenting financial statements, enterprises must present:

- The accounting policy applied for governmental grants, including the presenting approach applied in business reports
- The nature, the scope of governmental grants recorded in business reports and other supporting types from the government from which enterprises benefit directly.
- Conditions obtained and unreachd during the period to receive governmental assistance grants and other amounts related to governmental supports that have been recorded.

5.2 The need to conduct research on guidelines for accounting to reflect accounting principles and approaches applied to governmental grants

5.2.1 Common principles

- Governmental grants are governmental supports in the form of delivering resources for enterprises under the condition that enterprises have to conform to several conditions by the government which relate to enterprises' business activities.
- Governmental grants will not be recorded until there is certain insurance that:
 - + The enterprise has conformed to all conditions to earn the grant;
 - + Will definitely earn the grant.
- Grants will be recorded as revenue from governmental grants logically throughout the subsidizing time in a suitable way to expenses that these grants compensate for. Enterprises are not allowed to record grants directly as owner's equity.

5.2.2 Methods to account governmental grants

- Grants to establish long-term assets (like subsidizing for construction or shopping projects), including grants not in cash, will be recorded and presented on the balance sheet like a revenue that has not been conducted. When enterprises receive the grant in cash, accountants will note down:

Account 111, 112 Payable
Having account 3387

The grant will be distributed into periodical subsidized revenue in a way that is appropriate to the depreciation time of fixed assets that are built or bought like a condition of the grant, when distributing, write:

Account 3387 Payable

Having account 5114

On the basis for the above way of recording is that governmental grants to establish long-term assets have to be recorded in revenue that is not formed of enterprises and distributed gradually into revenue in accounting periods appropriate with business production expenses that these grants compensate for.

- The case when the government subsidized with cash to compensate for expenses like interest rates supports after investment that enterprises have spent during the period will be recorded immediately in the revenue in the period that expenses arise, accountants will note:

Account 112 Payable

Having account 5114

If the disbursement is performed in the following period because time is needed to finish administrative procedures for the disbursing amount and enterprises ensure all conditions to obtain the disbursement, the grant is recorded as a receivable, accountants will note:

Account 1388 Payable

Having account 5114

When the enterprise earns the governmental grant, accountants will note:

Account 112 Payable

Having account 1388

- In the case when enterprises are subsidized under the form of a land lease reduction or exemption in a certain amount of time, enterprises have to identify the reasonable value of the amount of land lease fees that was reduced or exempted, and record the supports according to the identified value of the amount subsidized.

Recording the reduced land rental fees:

Account 242 Payable

Having account 3387

Periodically enterprises have to distribute the amount of land rental fees reduced or exempted into expenses and distribute the value of the governmental grant into revenue to determine business outcomes of each period:

+ When distributing land rental fees, noting down:

Accounts 627, 642 Payable

Having account 242

+ At the same time, distributing the governmental grant:

Account 3387 Payable

Having account 5114

The basis for this guideline is when enterprises use the land, they have to pay rental fees. If this amount of rental is reduced or exempted, enterprises have earned revenue from having reduced, exempted land rental fees, so the reduced or exempted amount need to be recorded periodically in business reports to reflect the amount of revenue generated by having reduced or exempted rental fees. At the same time, enterprises' expenses need to be reflected sufficiently to be able to compare with other enterprises in the same field but are not receiving the preferential of land rental fees reduction or exemption.

Above are several proposals of guidelines on how to account governmental grants and present information about governmental grants; these ideas of proposals are personal opinions aiming to solve the problem more scientifically and reasonably, appropriate with the nature of subjects and principles of recording and presenting information on financial statements.

6. Conclusion

The above are some guiding proposals for accounting for government subsidies and present information on current government subsidies.

Hopefully, in the near future the Ministry of Finance needs to conduct research and publish accounting standards and instruct how to account governmental grants and present information about governmental grants in such a way that matches IAS 20. These principles are the basis for enterprises to uniformly conduct accounting methods as well as sufficiently present information about governmental grants and supports. From there, financial statements readers have enough information about the influence of governmental grants on the financial condition and financial outcomes of enterprises

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The Role of Inventory Management Accounting with Corporate Governance in Digital Age

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Abstract

For all businesses, inventory plays a very important role in the process of production and business. Consequently, inventory control is essential to make sure that it is enough. If the inventory level is too high, the price will increase, which makes it difficult to compete with our competitors in the market. Conversely, if the inventory level is low, it will reduce sales, causing stagnation in production. In order to manage inventory well, there must be an effective combination between the functional sections in the enterprise, in which general accounting and accounting management in particular are efficient management tools for the managers. By using qualitative research methodology and making a survey in 2017, the article reflects the role of inventory management accounting with administrative functions and positions in enterprises.

Keywords: *Corporate governance, Inventory, Inventory accounting management.*

1. Introduction

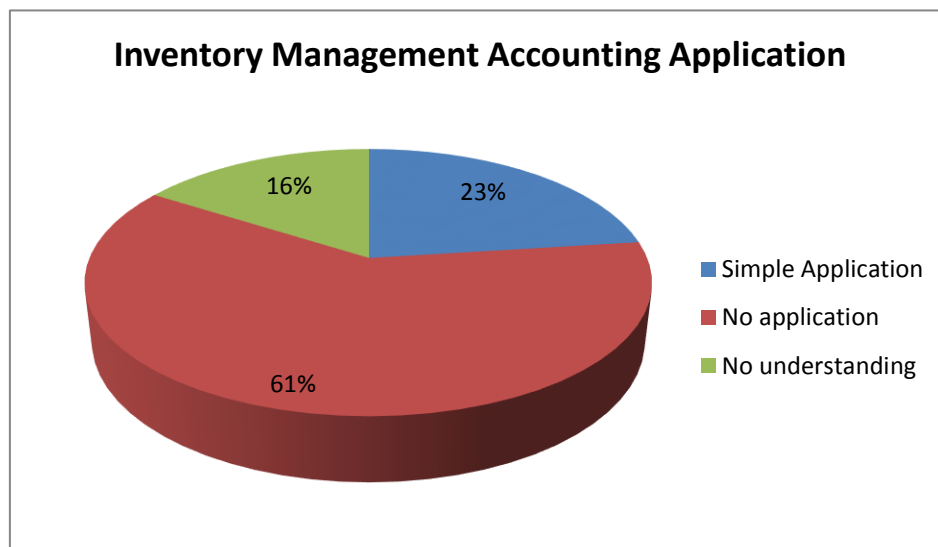
Inventory Management Accounting (IMA) is a part of management accounting, providing necessary, specific, timely information, suitable for inventory management accounting activities in the enterprise. Inventory Management Accounting not only provides historical information, but also provides directional information to help managers easily analyze, evaluate and make appropriate decisions

Inventory Management Accounting always exists in every organization, but the effect of providing information to different audiences will vary, depending on the construction and operation of the accounting system. Businesses in developed countries around the world have

developed a modern inventory management accounting system that provides useful information to internal managers to assist them in planning, implementation of the plan and the inspection and assessment of the performance of inventory plans. In order to bring out the best business plan, firstly, enterprises need to know the rules of the market, in addition, they also need to know how to promote and make the most of their available resources in order to find out some logical management solutions that fit their organizational structure. Therefore, the organization of inventory management accounting has always been the top concern of many corporates and is applied to their management activities, because management accounting plays an important role in providing useful, flexible, fast and effective information to serve the management process.

However, until now, in Vietnam, accounting system including management accounting, there are still many shortcomings in comparison with many countries. The author makes a quick survey about the application of inventory management accounting in some manufacturing companies in Vietnam in 2017 such as: paper, beverage, pottery enterprises... According to the preliminary survey of the author, managers in these enterprises all understand and apply inventory management accounting at a simple level of about 23%; up to 61% of enterprises surveyed said they knew but did not apply, the rest did not know.

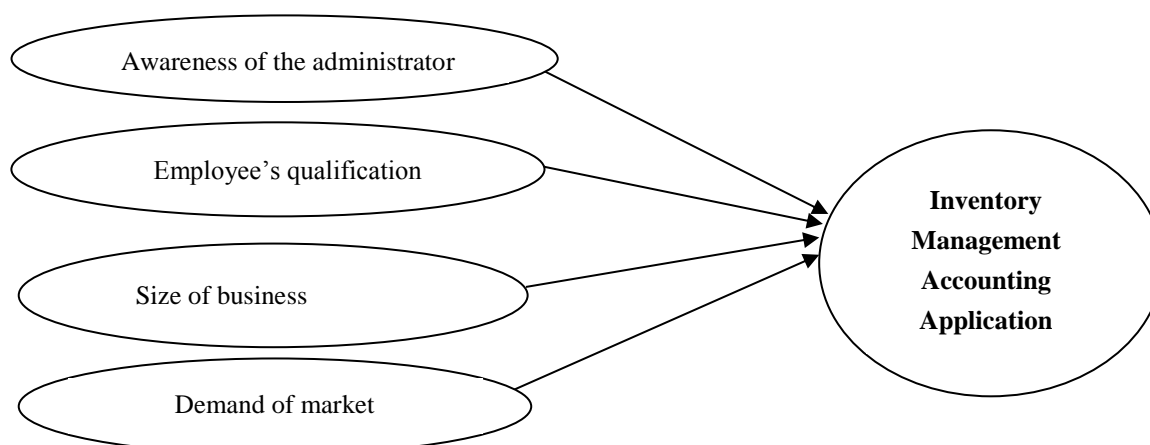
Fig 1: The percentage of applying inventory management accounting in VietNameese manufacturing enterprises



Source: Author's survey

Based on author's survey, the perception and process of organizing management accounting in the conditions and environment of Vietnamese enterprises, especially in inventory management accounting, still have many difficulties and unavoidable limitations due to some main reasons such as: The enterprises have applied management accounting but the model applied is not scientific and reasonable, the administrators have not paid much attention to the application of management accounting in business, employees' qualification does not meet the requirement from the manager, the demand of the market, the size of business... The factors that affect IMA can be exposed as follows:

Fig 2: Factors affect inventory management accounting application in enterprise



Source: Zwelihle Wiseman Nzuza (2016)

2. Literature review

In the present days, as Vietnam has increasingly integrated into international and regional economies, accounting in general and management accounting in particular is a very important factor to create strength for businesses. The role of inventory management accounting for enterprises is expressed in different aspects, specifically:

2.1. IN TERMS OF ADMINISTRATIVE FUNCTION

- *For planning function:* Planning is the important task of corporate governance, it involves building a path to common goals and specific goals of the company. Businesses often formulate strategic plans and operational plans. Inventory Management Accounting plays an important role in preparation of these two types of plans. Strategic plans often have a long-term vision and set long-term financial goals. IMA provides current and predictable financial information with high accuracy whereas the operational plan is usually related to daily tasks. IMA information on each type of goods, department, each type of product at specific times will be very useful for this planning. Through information provided by IMA, managers will have the idea for allocating appropriate budgets for production, preserving, sales, and investment activities to ensure safety and delivery of the whole organization. In order to achieve those goals, the accounting management system will review the historical data for future inventory cost forecasts. IMA can anticipate some possible challenges to the operations of the business, helping the manager to get prepared and get ready for dealing with potential inventory-related risks.

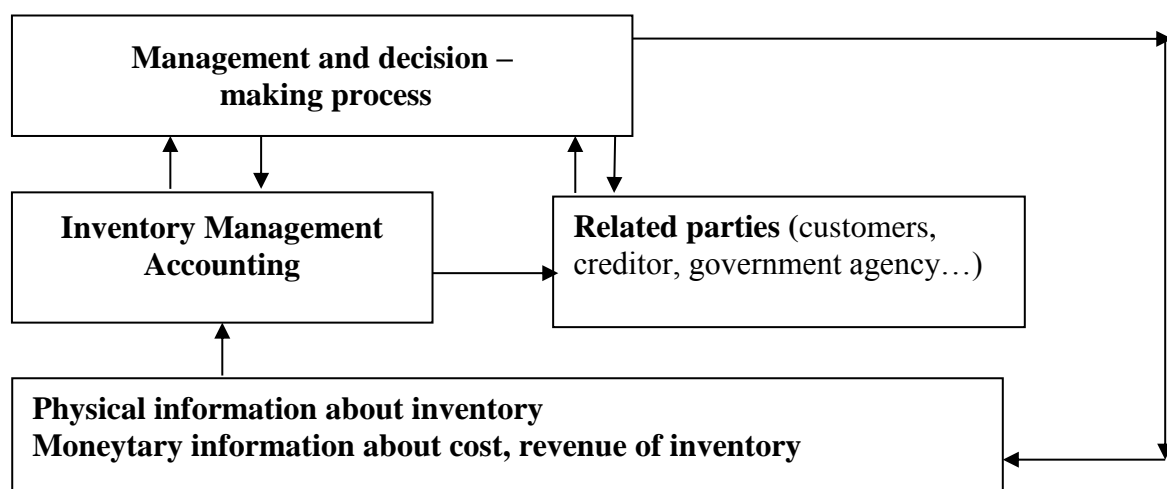
- *For organizing function:* Administrators should always base on the proposed plan. At the same time, to give direction, business managements also need to have updated information about all activities of the unit on the aspects, locations and objects involved. In the process of implementation, accounting management is always monitored and managed in terms of quantity and value to provide timely information to managers to manage inventory, contribute to avoid losses, minimize costs and capture the market chances to plan

for possible inventory devaluation, reflect the true value of each commodity. In addition, the presentation of information in the inventory reports covers the financial and non-financial aspects of the company at different times as required by the management, making the the implementation of the plan become easier for directors.

- *For control and evaluation function:* Control is the identification and rewarding activities that brings about targeted results as well as the detection and correction of errors. When controlling and evaluating, enterprises need to define measurement conditions and criteria. Measurement helps to compare plans with results. Inventory Management Accounting plays an important role in measuring and evaluating the results of the unit. Measurement tools related to inventory such as inventory revenue, inventory ratio, etc. can help to provide information on financial capacity, financial responsiveness and opportunity cost, retained earnings and costs related to increasing external financial sources. IMA will indicate which department, when, which issues have delayed or breach the plan so that the executives will take appropriate action. At the same time, from the use of financial and non-financial measures, IMA will help managers identify and evaluate the performance of their work, other current issues that are critical to the planning for the next period.

- *For decision-making functions:* IMA information is a key factor in making corporate governance decisions related to the inventory of executives. The decision-making process of the manager is the selection from a variety of business plans, each of which is considered to include a lot of accounting information. To obtain information for decision making, IMA uses appropriate analytical methods, selects the necessary information and synthesizes them, presents them in a straightforward sequence. This information can be expressed in various forms such as mathematical models, graphs, comparison tables.... so that the administrator can handle quickly and timely. Through inventory reports such as optimal order quantity report, inventory status report according to production schedule ... they will help to provide, analyze and prove the decisions of the administrator.

Fig 3: The role of inventory management accounting for decision –making in business



Source: Mayanja MK and Vander Poll HM (2011)

2.2. IN TERMS OF ADMINISTRATIVE POSITIONS

- *For senior executives (CEOs, boards of directors):* These people need accounting information to assess the business situation, set goals and plans to achieve the proposed target. They need to work closely with the accounting department to obtain appropriate and comprehensive reports for specific areas that need to be consulted. Mayanja MK and Vander Poll HM (2011) argued that Management Accounting staff should report to the board about in-depth analysis of key issues in the internal and external business environment based on deep knowledge of asset management activities. In order to help businesses research and implement large financial policies, IMA will synthesize, analyze information on each type of inventory, identify financing sources that can be mobilized at maximum level, cost to pay such as ordering costs, storage costs, storage costs.... Through this, the Board of Directors and CEOs will make appropriate decisions and directions to increase the value of the company's assets.

- *For middle-level managers, management of functional departments:* Due to their assigned positions, these people need detailed, timely and regular information to assess their business situation and implement strategic plans. On the other hand, daily information is also essential to make daily decisions that achieve the company's overall and specific goals. Managers of different levels, with different functions and tasks, will need different information at different times. The information provided by the IMA meets all that necessary requirements. However, businesses in general and business managers in particular, need to determine the true capacity of their IMA staff to make specific requirements. Ehrhardt and Brigham (2009) argued that management accounting contributes to preserving the ethics of business as well as corporate executives. Management accounting in general and IMA in particular, through their work can detect fraud related to enterprises' inventory and report the actual value, from which to effect to the tasks of executives but also ensure transparency and otherwise create reliability for investors.

3. Results and discussion

Based on the author's survey, most of Vietnamese enterprises are small and medium size. They are limited scale and weak financial potential. Therefore, they have not paid much attention for information technology and invested in management accounting. In addition, IMA in Vietnamese enterprises are not really popular, creating a major obstacle to promote the development of management accounting in the area. Many enterprises have not created the link about inventory management accounting between departments, so the efficiency of providing information to managers is very low.

Therefore, in order to put IMA into operation, it is popularly applied in state management agencies and the majority of enterprises in VietNam, we need to develop a plan to accelerate the development of IMA in the coming years. Some specific solutions are:

- Ministry of Finance should coordinate with specialized agencies to promote propaganda, dissemination and public awareness about the benefits of management

accounting, intensifying training and developing management accounting human resources for state employees, enterprises, start-up youth and students.

- Vietnamese enterprises need to develop their IMA implementation in line with the requirements and actual conditions of financial resources, human resources as well as their business goals in the future. IMA application requires careful and appropriate effort for this. Specifically:

+ Enterprises must determine that IMA development strategy is aimed to long term investment rather than short-term investment. Therefore, based on the characteristics of the business activities, managers need to determine the purpose and target participating in IMA. For example: increase the understanding of market and activities of enterprises, promote the brand, reduce costs, increase revenue

+ Enterprises need assess the impact as well as determine factors that influence the application of IMA such as competitors, customers, demand of market. In addition, management accounting is different from financial accounting, before conducting IMA application, enterprises need to review the internal and external relationships that affect IMA plans to identify bad situations that may occur during the business process.

- In the enterprise, the human factor always plays the leading role and is the successful factor of enterprises. Therefore, to keep up with the continuous development of commune progress. Assembly, especially the progress of science and technology, businesses need to strengthen the work training and fostering to raise the professional level for organizations and individuals who participate in network management activities as well as fully exploit the applicants of management accounting. Therefore, it is necessary to train computer experts and to disseminate knowledge about IMA for the management department. Besides, those enterprises need to send staff to attend training courses on advanced management accounting, administration network...

4. Conclusion

Management Accounting is an area of economic science, creating a useful channel for information management, which plays an important role in supporting corporate governance. The information provided by IMA is a reliable, transparent and timely information system about the responsibility of the executives in administrating and managing the assets of the business. On the other hand, inventory management accounting information facilitates better management functions and aligns business activities with the external environment. It is through the exchange of information that the business, especially the new manager, understands the needs of customers, suppliers' capabilities and other issues that arise in the organization.

Therefore, businesses in general and Vietnamese enterprises in particular should consider this type of accounting and therefore have specific measures to develop, organize and maintain an effective inventory management accounting system.

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Corporate Internet Reporting Practices: An Exploratory Study of Listed Companies in Vietnam Securities Market

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Abstract

The main objective of this study is to examine the level to which Vietnamese listed companies are engaged in corporate reporting via internet. This objective is obtained through the use of survey analysis on the websites of 200 companies listed on Hochiminh securities exchange (HSX) and Hanoi securities exchange (HNX) as in 2016. The analysis relied on the use of a checklist containing 52 items covering corporate internet reporting practices. The mean score of all items of the Internet Reporting Index (IRI) was 39.67. The mean scores for the content and presentation format items were 32.24 and 47.10 respectively. The results also point out the significant differences between HSX and HNX companies in terms of corporate internet reporting practices. These findings clearly suggest that in Vietnam, internet reporting is an emerging issue and there is ample room for improvements in order to utilize the full potential of the internet and other information technologies in the context of the fourth industrial revolution.

Keywords: *Corporate internet reporting, Listed companies, Securities, Vietnam*

JEL Classification: *M410; M480*

1. Introduction

Corporate reporting practices witnessed significant shifts toward the use of corporate websites to disseminate information. These shifts made researchers to anticipate a gradual disappearance of the traditional paper-based reporting (Marston, 2003; Gallhofer, et. al.

2006). Corporate Internet Reporting (CIR) is defined as the disclosure of corporate annual report related items on corporate websites (Ashbaugh et al., 1999; Jones and Xiao, 2003). It is worth noting that the use of the internet and other information technologies improves information dissemination, resulting on equal, timely and cost-efficient access to relevant information by investors (OECD, 2004). Because CIR is merely unregulated and voluntary, firms are free to determine contents and presentation of corporate information. Therefore, the level of CIR varies among countries as well as among firms (Ashbaugh et al., 1999). Many studies investigate the use of internet in disclosing information on the corporate website (Trites, 1999; Craven and Marston, 1999; Deller et al., 1999). The relevant studies focus mostly in developed capital markets, while little research has been done on internet disclosure by companies in emerging capital markets. This paper examines corporate internet reporting by Vietnamese listed companies, which has rarely been done before. In order to evaluate company websites a checklist of criteria has been developed. The criteria were used to construct an Internet Reporting Index (IRI), which was used to assess the company websites. The aim of this study is twofold. First, it examines corporate reporting via the internet in the context of an emerging market. Second, this study presents a tool that can be used to measure the level of reporting information on the internet. The main contribution of this study is to describe how corporate reporting practices have evolved in an emerging country.

The rest of the paper is organized as followed. Section 2 provides some background information of reporting practices in Vietnam. Section 3 presents a very brief review of the relevant literature. The research method is then described in Section 4. Section 5 presents the discussions while the last section (Section 6) provides a summary of the main findings and some concluding remarks.

2. Overview of Reporting Practices in Vietnam

The Vietnamese corporate disclosure environment has changed dramatically during the past decade. Vietnamese accounting standards have been harmonizing with the International Financial Reporting Standards (IFRS), and the regulatory agencies of the Vietnamese government have gradually established a comprehensive regulatory framework for corporate information disclosures in the Vietnamese securities market. The economic reform launched in Vietnam since 1986 has led to some significant changes to Vietnamese society. In an effort to industrialize and modernize the country, maintain stable economic growth, and restructure the economy to enhance its efficiency and competition, Vietnam had needed huge capital of investment. Therefore, building securities market in Vietnam had become an urgent demand to mobilize mid-term and long-term capital within and outside the country into economic investment through debt and capital securities. In addition, the privatization of state-owned enterprises along with the establishment and development of securities market would create a more open and healthier business environment. On July 10, 1998, the Prime Minister signed Decree No. 48/1998/ND-CP on stock and securities market and a decision to set up two securities trading centers at Hanoi

and Ho Chi Minh Cities. On July 20, 2000, the Ho Chi Minh Securities Trading Center was officially put into operation and executed the first trading session on July 28, 2000 with two types of listing stocks. In August 2007, it was renamed as HSX. Hanoi Securities Trading Center was established in 2005, and later renamed as HNX in 2009. At the end of 2017, there are 344 companies listed in HSX, and 384 companies listed in HNX with the total capitalization of about 965,000 billion VND, which is equivalent to 31% GDP.

With regard to information disclosure regulations, Securities Law ref. 70/QH11 dated June 29, 2006 promulgated by the National Assembly of Vietnam has provided an important legal corridor for the development of Vietnam Securities Market. From the very first days of application, Securities Law has approved the aims, objectives, and principles of securities market operation that are justice, public, and transparent, to protect the rights and interests of investors. For nearly two decades of formation and development, Vietnam Securities Markets have strongly qualitatively and quantitatively developed and have become one of the effective capital channels of the economy. After three-year-implementation, besides many positive aspects of the Securities Law which have been proved to partly contribute to the development of the market, there were some shortcomings which needed the adjustments for making it suitable to the rapid changing of the securities market; among those shortcomings is information disclosure. To remedy that shortcoming, on November 24, 2010, the National Assembly of Vietnam enacted the Securities Law 62/2010/QH12 altering and supplementing the Securities Law 70/QH11, which has more fully met the market development requirements and supplemented the regulations on information disclosure.

Acknowledging the increasingly important roles of transparent information disclosure of public companies in such a young securities market of Vietnam in protecting the rights and interests of shareholders, investors, and stakeholders, in 2010, the Ministry of Finance (MoF) promulgated Circular No. 09/2010/TT-BTC dated January 15, 2010 guiding information disclosure in Vietnam Securities, which replaced Circular No. 38/2007/TT-BTC previously promulgated. However, the information disclosure regulations regulated by Circular No. 09/2010/TT-BTC did not cover all the contents of the Securities Law 62/2010/QH12, such as expanding the subjects of information disclosure, classifying the information disclosure of public companies based on the capital size and publicity of the company (instead of classifying into the listed and non-listed public companies). That is the reason why Circular No. 52/2012/TT-BTC dated April 5, 2012 and Circular 155/2015/TT-BTC dated October 6, 2015 were subsequently promulgated and they supplemented the detailed regulations on information disclosure of public companies and aimed at building a public and transparent securities market to better protect the rights and interests of investors. The MoF and the State Securities Commission of Vietnam (SSC) are the two main government regulatory agencies managing and regulating the stock market.

3. Theoretical Background and Previous Studies Related to Internet Reporting

3.1. Theoretical Background

Agency Theory

Agency theory explains the relationship between principals as shareholders and agents, such as company's executives. Jensen and Meckling (1976) defined an agency relationship as a contract under which one or more persons engage another person to perform some services on their behalf which involves delegating some decision-making authority to the agent. They assumed that if both parties to the relationship are utility maximizers, there is a good reason to believe that the agent will not always act in the best interests of the principal. A separation of ownership and control of a company results in agency problems due to conflicts of interests between the contract parties. The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities of the agent. Jensen and Meckling (1976) defined agency costs as the sum of: (1) the monitoring expenditures by the principal (to limit the aberrant activities of the agent); (2) the bonding expenditures by the agent (to guarantee that no action will be taken by the agent to harm the principal's interests); and (3) the residual loss (the cost relating to the reduction in welfare experienced by the principal as a result of the divergence between the agent's decisions and those decisions would maximize the welfare of the principal).

In the context of the company, a major issue is the information asymmetry between managers and shareholders. In this agency relationship, insiders (managers) have an information advantage. Owners, therefore, face moral dilemmas because they cannot accurately evaluate and determine the value of decisions made. The agent, therefore, takes advantage of the lack of observability of his actions to engage in activities to enhance his personal goals (Barako, 2007). On the other hand, shareholders who are outsiders have to bear the risk of losing their money due to a lack of information (Lokman, 2011).

An important aspect of agency theory is the need to control the behavior of managers through monitoring mechanisms such as corporate governance and disclosure. In this regard, CIR can enhance the monitoring role of accounting by providing investors with easier, faster and more cost-effective access to accounting data on corporate performance. As a result, CIR enables shareholders to mitigate agency problems and at the same time reduce agency costs associated with any decrease of company value as well as monitoring and bonding costs (Lokman, 2011).

Signalling Theory

According to the signalling theory, one could expect that only high quality firms use the internet as a medium to publish accounting information. Or at least it can be expected that high quality firms would provide more "content" or more "features" on their websites. Disclosure reduces the information asymmetry towards potential investors, which alleviates the adverse selection problem. Low quality firms might prefer restricting access accounting data to the more determined users. Craven and Marston (1999) assert that the very use of the internet might itself be a signal of high quality. It implies that the firm is modern and up to date with the latest technology rather than old and conservative.

3.2. Previous Studies Related to Internet Reporting

Corporate internet reporting has received widespread acceptance all over the world because it provides certain distinctive advantages. Corporate disclosure provided on the website includes financial statements, notes to the financial statements, financial highlights, auditors report, corporate governance information, corporate social responsibility reporting, human resource information, ownership structure and so on. Recent studies document the practice of such reporting among companies in numerous countries (e. g., Trites, 1999, US and Canada; Craven and Marston, 1999 UK; Deller et al., 1999 US, UK, and Germany). This practice is expected to grow to the extent that corporate financial reporting in near future will move entirely from the current primarily print-based mode to using the internet as a primary information dissemination channel (Lymer et al., 1999; Bagshaw, 2000).

There are numerous advantages when firms engage in corporate reporting via internet. For example, firms can use this tool of communication to grasp more potential users. Uploading annual report related items information online achieves equal access to all users and reduces the information asymmetry (Gallhofer et. al., 2006), and it provides the opportunity for companies to enhance global links and increase user population (Lymer et al., 1999; Gallhofer et. al. 2006). In addition, the internet permits interactive information distribution in a way not possible via the printed format, and it provides instant access to accounting information from either static pages or real time corporate databases (Lymer et al., 1999; Gallhofer et. al. 2006). This real-time reporting helps to part-remove the ‘timeliness’ problem which is inherent in the periodic timeframes of traditional print media (FASB, 2000). Furthermore, the internet increases the amount of corporate disclosure by facilitating virtually unlimited storage capacity that encourages the provision of press releases and additional information services (Craven & Marston, 1999; Deller et al., 1999). In this vein, Ettredge et. al. (2002) argue that one of the greatest advantages of internet reporting is the opportunity to download files for further analysis. While Xiao et al. (2002) argued that, instead of the one-way provider-dominated reporting process, the internet provides the opportunity for interactive communication through various communication types, one-way, two-way, or multi-way. This feature facilitates interaction between company and interested parties, thereby enhancing transparency and information availability.

However, recognizing the potentials and advantages of the internet for corporate reporting does not imply that it is flawless. Concerns regarding the credibility and integrity of publishing share price sensitive information on the company’s website without proper monitoring system have been raised by many scholars (Debereceny & Gray, 1999; Hodge, 2001; Gowthorpe, 2004). The issue regarding linking audited financial statements to unaudited websites has been viewed as the main disadvantage of using the internet in corporate disclosures (FASB, 2000). Moreover, another flaw of using the internet in business disclosures is the possibility of publishing false and/or misleading information. In this regard the FASB (2000: 23) noted that: “...the internet generates more opportunity for rumors and disinformation to be circulated...”. Nevertheless, the importance of using the internet to expand the audience of corporate disclosure cannot be ignored. Companies

are increasingly using their websites for financial reporting purposes as a mean of increasing disclosures and transparency.

4. Research Design and Methodology

Population and Sample Collection. To the end of 2017, there were 344 companies listed on HSX and 384 companies listed on HNX. However, due to the time and capability limit, this study will be conducted on the sample of 250 industrial and manufacturing listed companies (150 on HNX and the remaining 100 on HSX). The data will be collected from the 2016 annual reports of those companies publicly available on the company's websites, on the websites of HSX and HNX for analysis. Banks, financial, securities, and insurance companies (as they report under different or specific regulations), companies which are newly listed (after the financial year of December 31, 2016), and companies in other sectors other than industrial and manufacturing are excluded from the sample. The final list of companies in the sample includes 200 companies.

Internet Reporting Index. To identify what types of information disclosed on a company's website, an Internet Reporting Index (IRI) of 52 items (Annex A) was developed. With the help of literature review and website survey, these 52 items of IRI were categorized into six major themes (1) Corporate and Strategic Information; (2) Accounting and Financial Information; (3) Forward Looking Information; (4) Corporate Social Responsibility (CSR) and Human Resource Information; (5) Material Process-ability Format; and (6) Technological Development and Users Supports. The first four items were associated with disclosure content and rest two with presentation format.

Measuring IRI. In this study, the un-weighted disclosure approach will be used to measure IRI, because it is documented less subjective and judgmental. A company is given the value of 1 for a disclosed item, otherwise 0. IRI for each company is calculated as follows:

$$IRI_j = \frac{\sum_{t=1} X_{ij}}{n_i} \times 100$$

where:

IRI_j = Internet disclosure index for j^{th} company;

n_i = Internet disclosure item applicable to j^{th} company ($n \leq 52$ items);

X_{ij} = 1 if the item i of company j is disclosed, otherwise 0.

For analysis, the overall IRI was divided into two components, namely IRI content and IRI presentation.

5. Results and Discussions

Table 1 shows the descriptive statistics of total disclosures. The mean IRI score is 39.67 with standard deviation of 14.106. The disclosure ranges from 16.00 (minimum) to 83.00 (maximum) meaning that there is huge discrepancy in the disclosure of corporate

website. The mean score and standard deviation of content score and presentation score are also shown in the table.

Table 1. Descriptive statistics of IRI obtained by Vietnamese firms

	Total IRI score	IRI content	IRI presentation
Total variables	52	42	10
Mean	39.67	32.24	47.10
Standard deviation	14.106	18.008	12.900
Minimum	16.0	2.0	20.0
Maximum	83.0	81.0	90.0
Valid N (listwise)	200	200	200

Source: SPSS 20.0

Table 2 showed the frequency distribution of IRI components' score and total score by studied companies. For content reporting, most of the companies (73.5%) fall within the range of 0.00 to 40.00 score. Highest 88 companies (44.0%) fall under the range of 21 to 40 scores, which shows poor concentration by the firms on their Internet reporting. For presentation, the situation looks better with 54.5% of companies obtained 41 scores or more. For overall reporting score, most of the companies (59.5%) are in the class of 0.00 to 40.00, indicating low level of internet reporting by Vietnamese listed firms.

Table 2. Frequency distribution of IRI components and IRI overall

IRI Class	IRI content			IRI presentation			IRI overall		
	Frequency	Percent	Cumulative percent	Frequency	Percent	Cumulative percent	Frequency	Percent	Cumulative percent
0 - 20	59	29.5	29.5	3	1.5	1.5	15	7.5	7.5
21 - 40	88	44.0	73.5	88	44.0	45.5	104	52	59.5
41 - 60	36	18.0	91.5	93	46.5	92.0	67	33.5	93.0
61 - 80	16	8.0	99.5	15	7.5	99.5	13	6.5	99.5
81 - 100	1	0.5	100	1	0.5	100	1	0.5	100

Source: SPSS 20.0

Table 3 shows theme-wise reporting by the companies. It is found that at the time of reporting their information on the website companies emphasize less on content disclosure (IRI 32.24) than presentation disclosure (IRI 47.10). However, surprisingly enough, in content disclosure companies provided more attention on the CSR and Human Resource Information (42.28), then on Corporate and Strategic Information (41.23); Accounting and Financial Information is on the third place (25.75) before Forward looking information (20%). On the other hand, in presentation reporting, the gap in respect of IRI is not too large

(53.30 in Technological advantages and users supports and 41.00 in Materials process-ability format).

Table 3. Theme-Wise Reporting

Topic	IRI	Overall
Content Reporting (IRI Content)		
1. Corporate and Strategic Information (IRIC1)	41.23	32.24
2. Accounting and Financial Information (IRIC2)	25.75	
3. Forward Looking Information (IRIC3)	19.94	
4. CSR and Human Resource Information (IRIC4)	42.28	
Presentation Reporting (IRI Presentation)		
1. Material Process-ability format (IRIP1)	40.90	47.10
2. Technological Advantages and Users Supports (IRIP2)	53.30	
Total (IRI Overall)		39.67

Source: SPSS 20.0

In order to examine whether there exists any difference in IRI between firms listing on HSX and HNX (Table 4), the one-way ANOVA has been tested. The test results presented on Table 5 showed that significant differences do exist not only in the overall IRI score between HSX companies and HNX companies ($F = 20.094$, sig. < 0.05) but also in the specific IRI component's score (except IRIP2 with sig. > 0.05). Hence, it can be concluded that in terms of content reporting listed companies in HSX disclosed more information on their websites than listed companies in HNX. However, in terms of presentation, we did not find significant differences in technological advantages and users supports on the websites between two groups of listed companies either in HSX or in HNX.

Table 4. Internet Reporting Index by HSX and HNX companies

Topic	HSX	HNX	Total
IRIC1	51.55	32.61	41.23
IRIC2	29.83	22.35	25.75
IRIC3	26.79	14.22	19.94
IRC4	48.35	37.21	42.28
<i>IRI Content</i>	<i>38.91</i>	<i>26.67</i>	<i>32.24</i>
IRIP1	41.54	40.37	40.90
IRIP2	58.02	49.36	53.30
<i>IRI Presentation</i>	<i>49.78</i>	<i>44.86</i>	<i>47.10</i>
IRI Overall	44.34	35.77	39.67

Source: SPSS 20.0

Table 5. One-way ANOVA

		Sum of Squares	df	F	Sig.
IRIC1	Between Groups	1.779	1	34.631	.000
	Within Groups	10.170	198		
	Total	11.948	199		
IRIC2	Between Groups	.278	1	8.777	.003
	Within Groups	6.262	198		
	Total	6.540	199		
IRIC3	Between Groups	.783	1	14.898	.000
	Within Groups	10.407	198		
	Total	11.191	199		
IRIC4	Between Groups	.616	1	11.415	.001
	Within Groups	10.685	198		
	Total	11.301	199		
IRI Contents	Between Groups	.742	1	25.741	.000
	Within Groups	5.711	198		
	Total	6.453	199		
IRIP1	Between Groups	.372	1	7.576	.006
	Within Groups	9.730	198		
	Total	10.102	199		
IRIP2	Between Groups	.007	1	.833	.362
	Within Groups	1.617	198		
	Total	1.624	199		
IRI Presentation	Between Groups	.120	1	7.441	.007
	Within Groups	3.192	198		
	Total	3.312	199		
IRI Overall	Between Groups	.365	1	20.094	.000
	Within Groups	3.595	198		
	Total	3.960	199		

Source: SPSS 20.0

6. Summary and Concluding Remarks

The objective of the study is to investigate the content and presentation of CIR practices among public listed companies in Vietnam. The study was based on the analysis of websites of 200 listed companies in Vietnam securities market. The mean score of all items of the Internet Reporting Index (IRI) was 39.67. The mean scores for the content and presentation format items were 32.24 and 47.10 respectively. The results clearly suggest that in Vietnam, internet reporting is an emerging issue and there is ample room for improvements

in order to utilize the full potential of the internet. As more and more people in Vietnam are connecting themselves to the internet to get information, companies are expected to change their internet reporting practices, in terms of content and disclosure. To the extent that more extensive use of the internet for information disclosure can improve the efficiency of the corporate disclosure regime, it is expected that more companies will improve their internet reporting practices and will use the internet as an alternative channel to distribute information faster and less costly.

The exploratory results of this study are constrained by several limitations. Therefore, generalizations of the findings should be made with caution. Since companies' websites are regularly updated and upgraded, the results of this study represent only a snapshot of corporate internet reporting practices of Vietnamese listed companies. Therefore, a second-round rating for the same corporate websites in the future would enable to have comparable data and findings.

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Appendix A. List of Internet Reporting Index of Listed Firms in Vietnam (52 items)

No.	Item
Content Reporting	
<i>Corporate and Strategic Information (11 items)</i>	
1	Statement of strategy and objectives
2	Discussion on the impact of strategy on current results
3	Discussion on the impact of strategy on future results
4	Discussion of research and development activities
5	Statements of strategy improving business
6	Discussion of future product developments
7	Rate of return on expected projects
8	Descriptive information of marketing network (domestic market)
9	Descriptive information of marketing network (foreign market)
10	Discussion of competitive environment
11	General discussion of industry trends (past)
<i>Accounting and Financial Information (14 items)</i>	
1	Cash flow
2	Dividend policy
3	Market share analysis
4	Share price and volume of shares traded information
5	Main advantages
6	Weaknesses
7	Competitors analysis
8	Discussion of advertising, marketing activities
9	Discussion on the effects of inflation rates on current results
10	Discussion on the effects of foreign currency on current results
11	Discussion on the effects of interest rates on current results
12	Breakdown and analysis of sales and revenues
13	Breakdown and analysis of operating expenses
14	Breakdown and analysis of administrative expenses
<i>Forward Looking Information (8 items)</i>	
1	Forecast assumptions
2	General discussion of future industry trend
3	Discussion of external factors affecting the company's future (economy/politics)
4	Forecast of cash flows
5	Discussion on future expenditure

No.	Item
6	Discussion on the effects of interest rates on future operating activities
7	Discussion on the effects of inflation on future operating activities
8	Discussion on the effects of foreign currency on future operating activities
<i>Corporate Social Responsibility and Human Resource Information (9 items)</i>	
1	Employee training
2	Number of employees trained
3	Employee benefits
4	Labor protection policy
5	Environmental protection policy
6	Community policy
7	Data on accidents
8	Discussion of workplace safety
9	Discussion on the safety of the products
Presentation Format	
<i>Material Process-ability format (5 items)</i>	
1	Financial data in process-ability format (xls, txt, doc...)
2	Format of annual report (pdf, http)
3	Version of annual report (English)
4	Version of the website (English)
5	Audio/Video files
<i>Technological Advantages and Users Supports (5 items)</i>	
1	Search engine
2	Site map
3	Links to related sites
4	Feedback
5	Frequently Asked Questions (FAQs)



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The Study of Fair Value Accounting for Investment Property in Vietnamese Enterprises

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Abstract

This paper studies the overview of investment property accounting and the presentation of the fair value of investment property in Vietnamese enterprises. The research sample covers 68 enterprises engaged in investment property business in Hanoi. The research results show that 83.8% of enterprises do not present the fair value of investment property on their financial statements at the end of the accounting year. In addition, the results of the research also show necessary reasons to apply fair value accounting to the investment property. Based on the results of the research, the paper proposes some recommendations for the State agencies and enterprises to move forward with the usage of fair value accounting for investment property in Vietnamese enterprises.

Keywords: *Fair value, Investment property.*

1. Introduction

In the 1990s and in the early years of 21st century "*arguments on accounting with the aim at output pricing models with a focus on the use of fair value in accounting*" [1], the tendency to use the output pricing models under the form of the fair value model is increasingly widely used by accountancy organizations, typically the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB).

The fair value model thrives in accounting, in an effort to implement the project of

developing and issuing IFRS of the IASB, in May 2011, the IASB issued IFRS 13 - Fair Value Measurement to unify the identification and usage of fair value under IAS/IFRS for current financial statements. In Vietnam, the Accounting Law No. 88/2015/QH13 [19] supplements the concept of fair value in Article 3. Accordingly, “*fair value is a value determined in accordance with the market price which may be obtained when a property is sold or a liability is transferred at the time of evaluation*”. So far, so many studies have focused on using the fair value model instead of the historical cost model. Other valuation models are no longer in line with the current market conditions. These studies conclude that the use of fair value in accounting is an indispensable trend, but must be careful, should avoid making use of the fair value for adjusting the business results and perfecting the financial statements of the enterprise.

Investment Property accounting is also under this influence. The results of the survey show that 100% of selected enterprises now are applying the historical cost model for investment property, the historical cost model in accounting applied for the investment property is experiencing some shortcomings. According to interviews with some enterprises, the most common shortcoming is the recognition of investment property. For example, office buildings for lease operating in businesses are currently being monitored by three indicators: historical cost, accumulated depreciation and residual value. But nearly reaching the end of the building's operating life, the value of the building may be higher than the historical cost, due to many reasons such as increase in land costs and construction costs. At this point the remaining value of the investment property in the historical cost model will be much smaller than the actual value of the property on the market. Or if the value of the investment property is lower than the residual value, then this situation is not reflected by the historical cost model. This information should be considered on the basis of accounting prudence and may be significant for the user. However, at present, Vietnam has not applied IFRS yet, the Vietnamese Accounting Standards (VAS) was built under the IAS before 2003 and has been adjusted to suit the reality of Vietnam economy. According to Pham (2012)[14] the level of accounting convergence between VAS and IFRS was at 66% but was announced to be at only 61.9%. This leads to the fact that information users and investors are concerned that the disclosure of their information does not meet their information needs. The adoption of IFRS is an globally irreversible trend. If Vietnam does not have a specific timetable for the timely application of IFRS, there is a risk of falling behind and encountering barriers for entry into international capital markets. This article is designed to study the assessment of the investment property accounting status and the presentation of the fair value of investment property in real estate enterprises. Some recommendations thereby are proposed for the State agencies and enterprises to move forward the timetable of using accounting under the fair value for real estate enterprises in Vietnam.

2. Literature review

Review of research shows that research is often focused on studying the effect of accounting on the fair value for the usefulness of accounting information in the property market, with a focus on research the investment property accounting. The research by Nicole Promper (2010) [13] explored the effect of accounting on the fair value for the usefulness of property market accounting information derived from the difference between the rules for investment property accounting of IFRS and US GAAP. According to IFRS, investment property accounting are selected according to their historical cost model or fair value model. However, USGAAP does not allow the use of fair value models for investment property accounting. Through surveys, most companies in Europe apply a fair value model to investment property accounting under International Accounting Standard 40 (IAS 40). Nicole Promper analyzed the financial statements of 400 European enterprises and 385 American enterprises. The results of the study show that the difference between the usefulness of accounting information for real estate enterprises in Europe and United States. In his study, Nicole Promper concludes that, in European enterprises, the application of a fair value model to the investment property accounting, after the initial note the author observed for several years, it has provided useful information to investors even in difficult times of the market, even during the financial crisis of 2008, Nicole Promper's research also showed that the fair value model in most European enterprises have provided more useful information than the conservative approach model of the enterprises in the United States. The study by Liapis, K. J and Christodouloupoulou, E. P (2011) [10] examines the influence of GAAP and accounting methods on property investment management and decision making. Liapis and associates went on to study three types of property, these are owner-use property , commodity property and investment property. The authors focus mainly on the influence of two accounting models: fair value and historical cost on recognizing the value of the property in accounting. How does this difference affect on making and presenting of financial statements? The study by Sati P. Bandyopadhyaya, Changling Chena, Mindy Wolfeb (2017) [17]. In this study, the authors focused on the impact of applying a fair value model to investment property in 17 Canadian real estate companies when Canada switched to apply IFRS from 01/01/2011. The authors used data from the pre-IFRS period, 2008 to 2010, and the post-IFRS study period from Q1 2011 to Q1 2014. Research has shown the importance of accounting, being cautious about the appropriateness of fair value determination in accordance with IAS 40 - investment property. At the same time, in this study, the authors examine the random relevance of fair value determination in Canadian companies with forecasting future cash flows and pointing out that the determination of fair value on investment property has a positive impact on future cash flow and stock prices.

In addition, research on the application of fair value models in emerging markets is also very important. Chen Chen, Kin Lo, Desmond Tsang and Jing Zhang (2013) [5] studied the application of IAS 40 in emerging market enterprises. Chen and his colleagues point out that more and more of these emerging markets start applying IFRS or allow listed companies

to publicly report financial statements in accordance with IFRS, it raises the question of whether the use of IFRS accounting can be equally effective in different countries. In practice, to effectively use IFRS requires countries to have a developed market economy. For the content of investment property accounting, the use of IFRS is particularly complex because a fair value report will require reliable estimates from an active market. However, the real estate market in developing economies is often inefficient and less transparent. In emerging markets, the authors selected the Chinese market as a model for research. This is a large market characterized by an emerging market, growing, and at the same time, under the pressure of global economic integration, China has adopted a new accounting standards system towards International accounting standards based on IAS/IFRS include 38 accounting standards effective from 01/01/2007. The conversion of Chinese standards closer to IAS/IFRS but not the revision of IAS/IFRS, although still based on fundamental principles. Chen and his colleagues investigated, selected samples, developed the analytical model for 579 enterprises in China. The study concludes that in surveyed Chinese enterprises, firms listed on the international stock market tend to use accounting at fair value more than firms listed in the domestic stock market. The study by Fadia Burhan Alhaj Ahmad¹ and Mohammad Suleiman Aladwan (2015) [7] on the application of IFRS in one of the developing economies in the Middle East region of Jordan has provided additional insight into the application of IFRS in a developing country, where some previous studies suggest that the use of fair value models in developing countries is not very effective for many reasons, such as the absence of active markets with many properties and liabilities. This leads to a reasonable value measurement that is highly subjective and unreliable for decision making (Barth, 2006). Fadia Burhan and his colleagues suggest that a study in a developing country will give more insight into the application of fair value models in the implementation of IFRS. In Jordan, the investment property accounting applied a fair value model at the end of 2007 and revised it at the end of 2011. The objective of this study was to examine the usefulness of the information presented in the financial report of investment property after applying the IFRS in Jordan real estate companies. The study confirmed that the measurement of fair value was closely related to market value and that it provided useful information during the study period.

In general, the authors' conclusions conclude that the use of the fair value model is most appropriate and the fair value is the best basis for calculating the future cash flow. This is important for Vietnam in the process of converting to IFRS.

3. Research methods

The research methodology used is qualitative research methodology with specific methods such as systemation, interpretation, inductance, comparison of actual investigation for analysis and evaluation to draw reasonable conclusions. Research methods are as follows:

Method of collecting information: Primary data collection through survey questionnaires, interview questionnaires.

Interview methodology: The author selected interviews at 8 enterprises. The interviewees are senior managers in finance and accounting. The interviewees were interviewed at the interviewer's premises, but the interviewees were often interviewed at the

interviewees' place of work so that they could discuss issues deeply in a more open way. The interview content and interview questions were sent in advance so that the interviewees could understand the purpose and content of the interview so that the collected information would be more useful and focused.

Survey method: The survey method was used to collect the actual information on the situation of the fair value presentation of the investment property in Vietnamese enterprises. Survey samples were selected at 68 enterprises in Hanoi. The author selected the research sample in Hanoi based on business characteristics of the investment property with the similarity of business activities between regions, objects of the investment property activities are not limited by the scope of space between regions of the country. Moreover, the research at enterprises in Hanoi also ensures the cooperation of enterprises to provide accurate sources of information and data for research. Starting from the goal, the research object, the author build the questions on the survey questionnaires. Prior to distributing the questionnaires, the author consulted with a number of chief accountants at some firms for the purpose of identifying the questions on the questionnaires relevant to the respondents.

Method of data processing and analysis: To summarize the questionnaires, analyze the results obtained to make conclusions about the problems posed in the research questions, the author used Excel software to analyze the results. The results of the survey method are the data on the fair value presentation of the investment property in Vietnamese enterprises, limitations and shortcomings in the presentation of the fair value of the investment property.

4. Actual situation of fair value accounting for investment property in Vietnamese enterprises

4.1. Current status of fair value regulation according to current accounting system of Vietnam

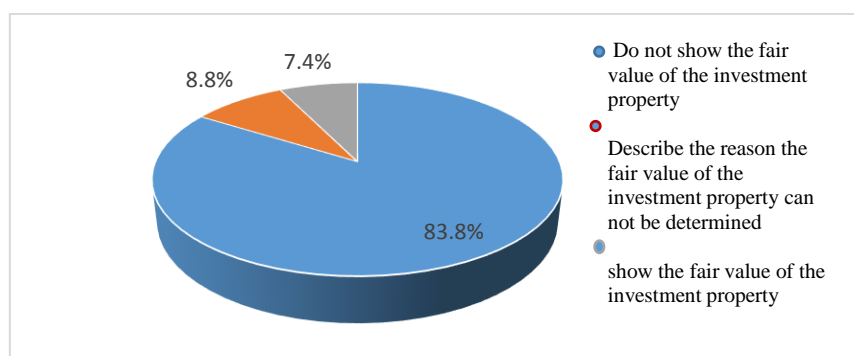
The Vietnamese accounting system is currently developed on the basis of the historical cost method. However, Vietnam has also been gradually updated with a fair value method, combining historical cost accounting and re-evaluation in line with the characteristics of each property type at the time of making the financial statement. Accordingly, fair value has been mentioned for more than 10 years, and is first defined in VAS 14 - Revenue and other income: "*Fair value is the value of a property that can be exchanged or value of a debt that is voluntarily paid among parties who have full knowledge in horizontal exchange*". For the investment property accounting, VAS 05 - Investment property must present "*fair value of the investment property at the end of accounting year, making financial statements. When the enterprise can not determine the fair value of the investment property, the enterprise must explain: the list of investment property; the reason for not determining the fair value of the investment property*". In the amended and supplemented Accounting Law No.88/2015/QH13, one of the important contents to be supplemented is to prescribe accounting principles related to fair value. This is considered as a strong step forward, but it can be said that the application of fair value in Vietnam is just at the introductory stage and there has not been a formal and consistent guidance on the

method of identification, there has not been a clear direction of fair value usage, there has not been specifically included in the accounting standard.

4.2. Situation of fair value accounting of investment property in Vietnamese enterprises

According to the survey of 68 enterprises in Hanoi, 83.8% of enterprises do not present the fair value of the investment property on their financial statements at the end of the accounting year. Only 7.4% of enterprises identified and presented this content (Table 1).

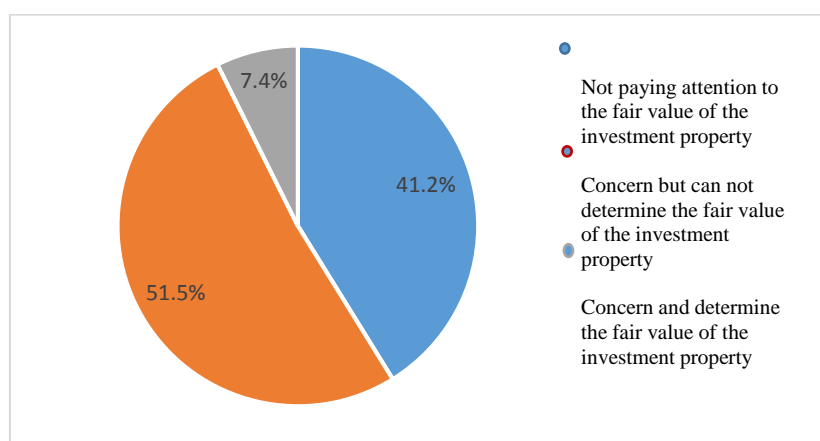
Table 1: The results of the survey on fair value presentation of the investment property on the financial statements of enterprises in Hanoi



(Source: Author summary from the survey)

At the same time, 58.9% of enterprises are interested in presenting the fair value to the respondents. These enterprises are mainly listed on the stock market (Table 2).

Table 2: Survey results of enterprises interested in presenting fair value of investment property in Hanoi.



(Source: Author summary from the survey)

Also interviewed at the the 8 enterprises in Hanoi, business leaders (chief financial officer, chief accountant) all said that the use of fair value model for the investment property is necessary to overcome the weaknesses of the historical cost model, for the following two main reasons:

+ Fair value accounting for an investment property will ensure that the financial

information provided reflects honestly the current market price.

+ The enterprises themselves, when loaning from credit institutions, must also determine the fair value of property for loan appraisal.

However, the managers of the 8 selected groups are concerned about how the fair value is determined in the context of inefficient market conditions, without a transparent market, financial information can be misleading, negatively affecting on the economic decisions of information users. On the other hand, at present, Vietnam does not have any specific guideline on fair value. Therefore, it is necessary to define an appropriate timetable for the application of fair value model for Vietnamese enterprises.

5. Recommendations

Under the pressure of integration requirements and the pressure of demand for developing a market economy, the use of fair value in Vietnam in general and the use of fair value for investment property in particular have taken some steps. Still, there is a clear direction to use. The fair value model meets the information needs for decision making, the basis for calculating the market price is proven to be most appropriate and the fair value model is the best basis for calculating the future cash flow. However, financial and accounting experts argue that in order to use fair value as a base for valuing in accounting and that to apply a fair value basis in Vietnam in accordance with international practice must have a reasonable timetable. Based on the results of the study, the authors propose some recommendations to apply fair value for investment property accounting in Vietnamese enterprises in the near future.

Firstly: Complete the legal framework on accounting system

The Accounting Law 2015 promulgated on November 20, 2015, effective from January 1, 2017, has changed dramatically in comparison with the Accounting Law 2003. It can be said that the most important change is the revision Add the concept of 'fair value' to provide the basis for the issuance, revision of relevant accounting standards such as investment property, financial instruments, fixed assets. There is a need of studying, developing and issuing Vietnamese accounting standards on fair value measurement. In principle, the application of fair value models must be consistent with international practices and conditions in Vietnam. This standard is developed in an approach that is appropriate to IFRS 13 - fair value measurement. Then, the system of accounting standards applying fair value should be completed as the basis for measurement. At the same time, it is important to study, develop and issue the standards for property impairment. These standards are developed in an approach that is consistent with IFRS. At the same time, the system of Vietnamese accounting standards, applying fair value should be completed as a basis for measurement in addition to applying the historical cost bases as currently.

However, it is not an early, one-way thing to put a fair value model into the Vietnamese accounting system in general and the real estate market in particular. The core issue of using fair value accounting is to have adequate economic conditions. If the socioeconomic conditions are not adequate, the use of fair value may be misused or misleading financial information. On the other hand, it is always urgent to provide useful

accounting information to the users. Therefore, short term and long-term solutions are needed. In the short term, when Vietnamese accountants do not have enough socio-economic conditions to apply fair value right away to investment property, it is necessary to minimize the disadvantages of the historical cost model in current investment property accounting. The authors suggest that accounting should be taken to recognize the impairment of investment property in enterprises in the coming time and from then forward to use the fair value model for investment property in future.

Secondly: Complete the legal system on property valuation

Establishing the legal framework, regulations and procedures for property valuation is an important aspect of state management of property market. Developed countries have focused on building property valuation systems to operate and control property transactions and tax collection. From that point of view, it is necessary to step by step complete a functioning market system and continue to issue Vietnam's valuation standards. Currently Vietnam has 12 price evaluation standards. The system of price valuation standards in Vietnam has been developed in a relatively complete manner and is in line with international valuation standards, including ethical rules, value bases and price appraisal process, price appraisal method, valuation of some properties such as real estate, intangible assets. Current standards still can not meet the "fair value" determination in the investment property accounting. On the other hand, the application of these methods in accounting in general and in investment property accounting in particular is still not specified, so it should be promulgated in the future.

Thirdly: Capacity building for accountants, users of financial reports and management agencies

It can be said that fair value accounting is relatively complex and confusing for users, even in developed economies. At present, accounting staff in most enterprises have not had access to this concept. Determining fair value is usually accompanied by estimates, assumptions in the future. In order to minimize the risk of manipulation of data for personal purposes, the legal corridor, the capacity of the price appraisal team, the management agencies, the tax office, the auditing unit, the users of financial statements must be substantially improved in order to access and prevent potential frauds. In addition, the training and development of qualified human resources on IFRS should be emphasized.

6. Conclusions, limitations and research sequences

6.1 Conclusions

Real estate business is one of the most important markets of the market economy, directly related to a tremendous amount of property in terms of scale, nature and value. In particular, the operation of investment property business has a lot of characteristics, which require a lot of capital and a long time investment, is regarded as risky business activities. This requires these enterprises in this area to be in control of their operations through the use of multiple management tools, and accounting is considered one of the most effective management tools to provide useful information for the control and decision making of

corporate executives. With the need to provide useful information, enterprises will be more and more aware of the important role of using fair value in accounting in general and in investment property in particular. Based on the results of the study, the article proposes some recommendations for state agencies and enterprises to move forward the route of using the fair value model for investment property in Vietnamese enterprises.

6.2 Limitations and research sequences

The sample size of the study is just limited to enterprises in Hanoi, other studies may expand the sample size in enterprises in the whole country.

The paper is implemented in the context of accounting standards system, the circulars of investment property accounting guidelines of Vietnam has been issued but many contents have not converged with the international general regulations. However, when Vietnam issues new and revised accounting standards in integration with IFRS, new research projects may be implemented such as: Study the factors that lead to the decision to apply the fair value model or the historical cost model to the investment property in businesses; Study on the usefulness of the information presented in the financial reports on the investment property after Vietnam issued the standard accounting system in the integration with IFRS.

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Do Fair Value Adjustments Influence Dividend Policy among Listed Firms in Hochiminh Stock Exchange?

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Abstract

The author examines how the impact of adjusting the financial asset value at the end of the period on the balance sheet affects the dividend policy of the firms. The research hypothesis is that the fair value adjustment of financial assets has a positive effect on business results and the board of directors sees good business results normally giving high dividends. However, the survey of 287 firms listed on the Hochiminh City Stock Exchange has the opposite result, there is a negative relationship between the adjustment of financial asset value and the change of dividend policy. Author's research indicates that the dividend policy is in line with the downward trend if the firms carries out more than the adjustment of financial asset value. The author will clarify in the paper.

Keywords: *Business results, Dividend policy, Fair value, Financial asset*

JEL code: *G1*

1. Introduction

Utilizing fair values in the measurement of financial assets is becoming increasingly essential, studies have shown that this contributes to improving the quality of financial reporting. Because then the numbers on the financial report will be more timely, realistic and make a great contribution to the decision making of the manager.

However, adjusting the financial asset value at fair value results in immediate change in the results of the firms. Recently, on the Vietnam Stock Exchange, there has been a debate about the huge change in business results of listed firms:

BTS: Vicem But Son Cement Joint Stock Company, profit after tax of the first 6 months of 2012 increased 165 billion VND due to adjustment of foreign currency difference at the end of the period.

SDH: Song Da Infrastructure Construction Joint Stock Company: Auditing reserve for additional bad debts of VND 5 billion, reducing profit by 5%.

JVC: Viet-Nhật Medical Equipment Joint Stock Company suddenly loses 1 335 billion dong after auditing due to provision for receivables.

It is clear that adjusting the value of financial assets (foreign currency, shares, bonds, capital contributions, receivables ...) at reasonable value of reporting date - to result dividend policy of firms.

To examine how fair value accounting affects decision making, the author studies the impact of adjusting the value of financial assets to the company's dividend policy.

2. Literature Review/ Theoretical Framework and Methods

2.1. Literature Review

Fair value measurement is becoming increasingly important in accounting standards. Regulators suggest that fair value leads to improved financial reporting, because fair value numbers are timely and more reliable as a decision mechanism. Consequently, investors should benefit from the introduction of fair value accounting because it allows them to make better and more informed decisions (Barth, 2001)

However, fair value accounting can lead to large transitory changes in net income (Penman, 2007). If relevant stakeholders fail to correctly assess the information in business results, incorporating volatile fair value adjustments in net income may introduce noise in decision making (Cornett et al., 1996)

The author assesses the effect of fair value adjustments on dividends using the framework of Lintner (1956), which formalizes the link between dividends and business results (Brav et al., 2005).

The Lintner (1956) states that firms aim for a stable dividend development in relation to their business results. If firm management correctly assesses the implication of transitory fair value increments for future earnings, fair value adjustments are not distribution relevant, and no relationship between fair value adjustments and dividends is expected.

However, if management judges the adjustments to be persistent, this may impact dividend distributions. Regulators have expressed concerns that positive fair value adjustments will lead to increased dividend payouts and through this to increased leverage. This may result in firms being financially overextended and vulnerable to economic shocks (Jagannathan et al., 2000).

Thus, if management increases dividends following positive fair value adjustments, this would support the assumption that fair value can induce an excessive degree of procyclicality. Therefore, whether and how dividend policy is influenced by fair value adjustment is an important empirical question.

2.2. Theoretical Framework

Financial assets

Under IAS 32, IAS 39, Financial Assets comprises four groups:

Group 1: Financial assets recognized at fair value through profit / loss are financial assets held for trading or initial certified by the firms as belonging to this group. Financial assets in this group include stocks, bonds, valuable papers traded for a short time to seek profit.

Group 2: Held-to-maturity are investments with fixed maturities, clearly defined amounts payable, and intentional holding and held-to-maturity investments expire. This heading covers bonds, loans, held-to-maturity investments

Group 3: Loans or receivables are investments in bonds, indefinite loans held to maturity, customer receivables, intercompany receivables, escrow deposits ... not listed or traded. on the market.

Group 4: Available for sale are financial assets not included in the above three groups. Financial assets in this group include: foreign currencies, gold and silver, long-term investment ...

The classification of financial assets determines the adjustment of the value of financial assets in the financial statements at the end of the period.

Table 1 will show how the adjustment of financial assets at the end of the period when the financial statements will affect the revenue, income and expenses in the period.

**TABLE 1: ADJUSTING THE VALUE OF FINANCIAL ASSETS
OVER THE FINANCIAL STATEMENTS (IAS 39)**

<i>Category</i>	<i>Measurement</i>	<i>Changes in carrying amount</i>	<i>Valuation basis</i>	<i>Impairment</i>	<i>Reversibility of impairment</i>
Financial assets at fair value through profit or loss	Fair value	Profit or Loss	Active market price or technique	Profit or loss	Yes, in profit or loss, retracted to the amortised cost at date of impairment
Held to maturity	Amortised cost	Interest and foreign exchange differences are recognized in profit or loss	Adjusted cost	Profit or loss	Yes, in profit or loss, retracted to the amortised cost at date of impairment
Loans and receivables	Amortised cost	Interest and foreign exchange differences are recognized in profit or loss	Adjusted cost	Profit or loss	Yes, in profit or loss, retracted to the amortised cost at date of impairment No reversal allowed for financial assets which are carried at cost due to the unavailability of fair value
Available for sale	Fair value (certain exemptions as above)	Other comprehensive income. Interest, dividend, foreign exchange differences are recognized in profit or loss	Active market price or technique	Profit or loss	Equity instruments via other comprehensive income. All others through profit or loss to the extent recognized in profit or loss

Thus, in Table 1, we see that, at the end of the period when the financial statement is prepared, the value of the financial assets must be adjusted, the adjustment of the financial asset value will affect the revenue and expenditure in the period of the business that will immediately affect the business results at period.

Due to the complexity of the IAS32 and the IAS39, IAS 39 is difficult to apply, so the IASB decides to revise IAS 39 and issue new IFRS 9 Financial instruments. In addition, the presentation of financial instruments and financial assets are also covered in IFRS 7. IFRS 9 will therefor replace IAS 39 from January 1, 2018.

IFRS 9 provides simplicity in the classification of financial assets. Financial assets are classified according to the business model of the firms to manage the financial assets and the cash flow characteristics under the contract of financial assets. According to IFRS 9, financial assets are divided into 2 groups:

Group 1: Amortised cost

Group 2: Fair value.

Table 2 will show us the initial recognition of financial assets at the end of the reporting period and adjustments to the value of financial assets at the end of the reporting period.

**TABLE 2: ADJUSTING THE VALUE OF FINANCIAL ASSETS
OVER THE FINANCIAL REPORT (IFRS 9)**

<i>Category</i>	<i>Measurement</i>	<i>Changes in carrying amount</i>	<i>Valuation basis</i>	<i>Impairment</i>	<i>Reversibility of impairment</i>
Amortised cost	Amortised cost	Interest and foreign exchange differences are recognized in profit or loss	Adjusted cost	Profit or loss	Yes, in profit or loss, retracted to the amortised cost at date of impairment
Fair value	Fair value	Other comprehensive income. Interest, dividend, foreign exchange differences are recognized in profit or loss	Active market price or technique	Profit or loss	Equity instruments via other comprehensive income. All others through profit or loss to the extent recognized in profit or loss
	Fair value	Profit or Loss	Active market price or technique	Profit or loss	Yes, in profit or loss, retracted to the amortised cost at date of impairment

Thus, in Table 2, we see that, at the end of the accounting period, financial asset values must be adjusted to reflect the value of financial assets. That will immediately affect the business results of the reporting period of the firms.

Reasonable value is becoming increasingly important in accounting standards. Due to the fair value of the financial statements, the financial statements have been improved as a result of the fair value of providing timely, reliable information on the current market performance than any other financial accounting standard (Financial Accounting Standards Board, 2000). Investors will therefore benefit from the application of fair values to measure financial assets because it allows them to make better decisions because of more realistic accounting information (Barth, 2007).

However, adjusting the fair value of financial assets can lead to large temporary changes in business performance (Penman, 2007).

On the other hand, it is difficult for the involved parties to accurately assess changes made by adjusting the fair value of an integrated financial asset to the business result, so it may be misleading to consider only the number of combinations. Profit and loss when making a decision (Hung and Subramanyam, 2007)

Business result and dividend policy.

Business results show the achievement of the firms after a business cycle. Basically the business results are calculated as revenue, income minus expenses in the period.

After-tax profit is calculated as the business result minus the corporate income tax payable in the period.

Dividend policy is a part of profit after corporate income tax will pay to the owner in proportion to the amount of capital contributed to the firm.

The relationship between business results and dividend policy is found in Brav et al. 2005; Jagannathan et al., 2000), where business performance is an important factor in changing dividend policy.

The author then makes a hypothesis to verify the correctness:

H1: There is a positive relationship between business result and dividend policy.

On the other hand, according to Lintner (1956), the dividend policy is determined on the basis earnings achieved cautiously in the company's term, while the immediate short-term component is not included in the dividend policy.

Lintner (1956) states that companies have the goal of sustaining a stable development of dividends as it relates to the development of the company and its main income. But he also worries that a positive equity adjustment will lead to an increase in dividends. This also means that the company is financially self-sufficient, vulnerable to economic shocks (Bernanke et al., 1996).

To determine whether the above statement is true of the business situation or not, the author hypothesizes H2.

H2: There is a positive relationship between fair value adjustment of financial assets and dividend policy.

So to check whether fair value accounting affects the decision-making whether or not the author examines the relationship between the dividend policy (affecting the investor's decision) and the outcome trading and adjusting the value of financial assets and other factors through the model as follows:

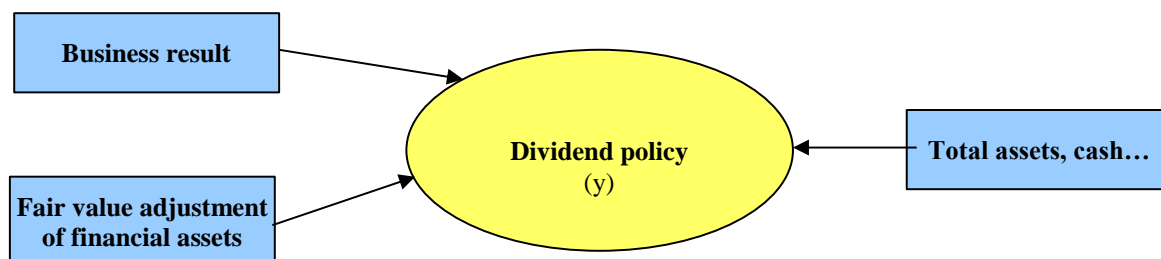


Diagram 1: Impact of fair value adjustment of Financial Assets on Dividend Policy

Thus, looking at Diagram 1, we see that the dividend policy is influenced by three groups of factors:

Group of factors: Business results. That is the business results of the firm before the adjustment of financial assets at the time of the report. To measure this factor, the author uses the code number 50 on the Income Statement (gross profit before tax) plus the adjusted portion of financial assets at the end of the period.

Group of factors: fair value adjustment of financial assets. This is an adjustment of the value of financial assets at the end of the period preceding the financial statement, which includes the difference between the year-end and the year-end balances of the following indicators on the balance sheet (issued under Curcular No. 200/2014/TT-BTC dated 22/12/2014 of the Minister of Finance) (See Table 3).

Group of factors: the size of the firm. In order to understand how the size of the firm influences the dividend policy, the author presents a set of factors including total assets and assets in the form of cash for the survey (see Table 3).

2. 3. Methods

Fair value - a concept that is perceived as embedded in the market - demonstrates future cash flow and reflects the state of the economy - is expected to make accounting information more clear, transparent and relevant for decision making. (Barth et al., 2001; Hitz, 2007).

However, fair value accounting also included in the Income Statement adjustments made immediately to changes in fair value of financial assets at the end of the period are included in financial expenses. This can cause a sudden change in the business results of the firm, affecting the opinion of the Board of Directors, investors in the assessment of the performance of firm, distribution policy.

Studies by Cornett et al.(1996); Hung and Subramanyam (2007) pointed out that the sudden change in business results was due to the adjustment of fair value of financial assets. Thus, the author examines three factors that influence the dividend policy:

1. Business results of the firm

2. Fair value adjustment to the financial assets of the firm
3. The size of the firm.

To determine the change in dividends policy, the author relies on the difference between the dividend yield in years t and year t-1. This data is derived from audited financial statements or annual reports of companies listed on the Ho Chi Minh City Stock Exchange.

To measure the business performance of an enterprise, the author relies on retained earnings after tax.

To determine the adjustment level of the financial assets of the author enterprise. The difference between the period-end and the beginning of the period reflects the reserve on the audited balance sheet of the enterprise.

To measure enterprise size factor the author puts in two variables: total assets; cash and cash equivalents (as modeled by Igor Goncharov, 2010 in the Netherlands).

At the same time, in order to understand the relationship between the dividend policy this year and the business results of the previous year, the author introduced the data model of two years t and t-1 (similar to Brav et al., 2005).).

The author examines hypotheses H1, H2 using the following equations:

$$NI_t = \alpha_0 + \alpha_1 NIBREV_{t-1} + \alpha_2 REV_{t-1} + \varepsilon \quad (1)$$

Inside:

NI_t : Net profit after tax of year t (Code 60 on the business result report made according to Curcular No. 200/2014 / TT-BTC dated 22/12/2014).

$NIBREV_{t-1}$ is the t-1 business result before taking into account the value of financial assets. This variable is calculated as the pre-tax profit in year t-1 plus (or minus) the total adjusted financial assets at the date of the t-1 end-of-year financial statements. before the tax plus (or minus the difference adjusted for the value of financial assets calculated in accordance with Table 3).

REV_{t-1} is the difference between the adjusted financial assets at year end t-1 (calculated based on Table 3).

If the adjusted financial asset value is temporary does not affect earnings, dividend policy, the coefficient of REV_{t-1} is predicted to be 0.

If the adjusted financial asset value transmits some dividend policy information, the coefficient of REV_{t-1} is predicted to be greater than 0.0

If the adjusted financial asset value shows a decline in dividend policy, the coefficient of REV_{t-1} is predicted to be negative, less than 0.0

Variables are divided by the total assets of the enterprise by year.

ε : Wrong number

To calculate the norms serving for the quantification of the model according to the equation (1), the author has made the statistics table as follows:

Table 3: Data Source

Content	Code	illustrate	Last number	Open Number	Differences
BALANCE SHEET					
Provision for trading securities	122				
Provision for short-term receivable	137				
Provision for long-term receivable	219				
Provision for long-term financial assets	254				
TOTAL ADJUSTMENT TO FINANCIAL ASSETS					xxx
INCOME STATEMENT					
Gross profit before tax	50				
Net profit after tax	60				
Earnings per share	70				
ANNUAL REPORT					
Dividend					

The equation (1) explores the relationship between this year's profit and last year's profit and the adjustment of the financial asset value in the previous year.

The result of this equation (1) is shown in Table 5

In order to understand the relationship between the dividend policy this year and the previous year's business results, the model incorporates data from two years t and t-1 (similar to Brav et al., 2005). The author develops equation (1) by adding the variables x1, x2 in the following equation:

$$\Delta y = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \alpha_3 x_3 + \varepsilon \quad (2)$$

In equation (2), the variables include:

Δy : change in dividend policy (this variable is calculated by the difference between the dividend yield in year t and the profit in year t-1). $\Delta y = NI_t - NI_{t-1}$

x1: Profit after tax of year t-1

x2: Profit after tax in year t

x3: adjustment of financial assets value in year t. Adjustment of the financial asset value in year t (calculated as the difference between the year-end and year-end balance of the contingent items in the year-end balance sheet). Equivalent to the REV variable t in equation (1).

Variables are divided by the total assets of the enterprise at each reporting date.

ε : Wrong number

The results of the regression analysis of the correlation between the change in dividend policy and the adjusted level of financial assets are shown in Table 6.

To further clarify the relationship between financial asset valuation and dividend policy, the author extends the research model through the following equation:

$$\Delta y = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \alpha_3 x_3 + \alpha_4 x_4 + \alpha_5 x_5 + \alpha_6 x_6 + \alpha_7 x_7 + \varepsilon \quad (3)$$

In equation (3), additional variables include:

x4: Profit after tax in year t-1 before adjustment of change in financial asset value.

x5: Profit after tax of year t before adjustment of change in financial asset value.

x6: total assets in year t

x7: money and cash equivalents of year t (code 110 on the Balance Sheet made on 31/12 / t, according to The Curcular No. 200/2014 / TT-BTC dated 22/12/2014 of the Minister of Finance)

Variables are divided by the total assets of the enterprise by year.

The results show the correlation between the change in dividend policy and the adjusted level of financial assets as shown in Table 6.

3. Results and Discussion

To find the correlation between the adjustment of financial asset value and dividend policy of the business, the author studied the audited financial statements of 287 enterprises listed on the Stock Exchange Ho Chi Minh City in the areas of business in the period 2015-2017

The author selected enterprises listed on the Ho Chi Minh City Stock Exchange to investigate, get the research writing data because statistics show that this is the floor of many typical businesses, large scale, many sectors The market capitalization ratio is higher than the HNX, while the liquidity of the companies is higher.

The author analyzes a sample of 287 public companies listed on the Ho Chi Minh City Stock Exchange in the period 2015-2017. Data obtained from the website of Ho Chi Minh City Stock Exchange and websites of listed companies.

Data collected by the author using statistical software SPSS Statitics 17 analysis, evaluation find the relationship between the variables.

Table 4 is a statistical report describing the dependent and independent variables examined by the author to determine the relationship with the dividend policy.

Table 4: Statistical Report

Variables	Mean	Median	Maximum	Minimum	Std Deviation
Δy	0.00485	0	0.00502	-0.00001	0.03369
x1	0.06021	0.03491	0.11132	0.00158	0.18026
x2	0.03747	0.02590	0.08613	0.00065	0.18962
x3	0.00790	0.00047	0.00722	0	0.02397

Survey data of 287 enterprises listed on Hochiminh Stock Exchange in the period 2015-2017 show that enterprises have average change in dividend policy, Last year was VND 4 850 per 1,000,000 VND of total assets. Of which the highest change was in VND5020 per 1 000 000 assets, the lowest change was 10 VND per 1 000 000 VND.

Results of data analysis according to equation (1) (2) we have:

Table 5: Correlation regression results

Variables	(1)	(2)
Constant	0.044 (7.40)***	0.044 (7.42)***
NIBREV _{t-1}	0.228 (2.81)***	0.428 (2.81)***
REV _{t-1}	0.448 (0.84)	
N	287	287
Adj.R2	0.2	0.2

Looking at Table 5, there is an intimate relationship between the after-tax profit of the year and the business results of the previous year (excluding the adjustment of the financial asset value) and the adjustment of the asset value last year's finance.

Dependent variable is NIt: Profit after tax of year t.

Independence variable is NIBREV_{t-1} as the t-1 business result before taking into account the value of financial assets. This variable is calculated by the EIT of year t-1 plus (minus) the adjusted total financial assets at the year-end t-1.

The independent variable REV_{t-1} is the sum of the difference in the value of financial assets at the end of year t-1.

Table 6: Factors influencing the dividend policy

Variables	(1)	(2)	(3)
Constant	0.008 (5.75)***	0.008 (5.76)***	
x1	0.010 (2.26)***		
x2	0.070 (2.09)**		
x3	-0.464 (2.97)***	-0.464 (2.97)***	-0.464 (2.97)***
x4		0.010 (2.25)**	0.010 (2.25)**
x5		0.070 (2.09)**	0.070 (2.09)**
x6			0.001 (4.33)***
x7			0.004 (0.55)
N	287	287	287
Adj.R2	0.11	0.11	0.12

Looking at the data in Table 6, we find that the relationship between y and x_3 is reversed - 0.464. So there is a negative relationship between the increase in the value of financial assets and the change in dividend policy. Thus the H2 hypothesis is rejected, there is a negative relationship between the adjustment of the financial asset value and the change in dividend policy. The effect of adjusting the financial asset value is negative and statistically significant.

4. Conclusions and Policy Implications

Research results show that the dividend policy change is influenced by three factors in the model (1):

Group of factors: Business results.

Last year's business results impacted the same relationship with 0.01; The business performance factor of the company this year affects the same direction, proportional to the coefficient 0.07.

Thus, the H1 hypothesis is accepted. The policy of dividends depends on the business results of the whole year before and this year, in which business results this year have a greater impact on dividend policy.

Group factors: Adjustment of financial asset value.

The factor of financial asset value was negatively impacted, at the rate of -0.464

Thus the H2 hypothesis is rejected. There is no positive relationship between the increase in the value of financial assets and dividend policy.

On the other hand, when enterprises increase the adjustment of financial asset value through provisioning, they tend to be cautious and keep the same dividend policy as the previous year.

This research indicates that if the enterprise has many reserves and adjusted the amount and value of financial assets, dividend policy tends to remain stable as last year. Increase dividend payout this year. This is also a useful information for investors on the stock market.

However, if the dividend yield is lower than market expectation, it may lead to negative signals on the stock market (Brav et al., 2005) and may damage the reputation of the company and its markets. financial school (Gomes, 1996). There is also the view that companies use adjusted financial asset values as an excuse to reduce dividends (Uspensky, 2008).

Edwards and Mayer (1985) found that managers of the UK's largest companies reduced their dividends as they faced a continuous decline in earnings, suggesting that temporary regulators Business results are not included in distribution of dividends.

From the study results on the author suggested to stock investors as follows:

Signs of reducing the dividend policy: On the balance sheet there is an increase of the index: Provision for short-term investment (code 129); Short-term bad debt reserve (code

139); Long-term bad debt reserve (code 219); Provision for long-term financial investment (code 259).

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Perception of Investors about Fair Value Accounting in Vietnam

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Abstract

This study aims to evaluate the investors' perception about fair value and their perspective of challenges in applying fair value into Vietnam context. The research data is gathered from a survey in 2017 with 110 investors as participants and SPSS serving data analysis purpose. It is revealed that different investors understand fair value in different ways thanks to their years of investment. The research also indicates that although information released by financial statement based on fair value is useful for investors' decision making, it is not the only source of helpful information. Also, it is stated that information accuracy and financial market typical features are the two major difficulties in the application of fair value accounting into Vietnam context. This research provides references for Vietnam's government authorities so that they can continue innovating standards of financial report, which meets the demand for information of fair value accounting users and helps researchers in their exploration of the role of financial report based on fair value in decision making of accounting information users.

Keywords: *Accounting information; Fair value; Financial statement; Perception of investors; Usefulness;*

JEL code: *M40*

1. Introduction

Under the context of international economic integration, accounting integration is one of important conditions. Currently, accounting policy in Vietnam is established based on historical cost. Although accounting data according to historical cost is reliable and

conservative, it is not appropriate with decision making process of investors, especially foreign organizations.

The utilization of fair value to measure items of financial statement is the tendency of international accounting. The Financial Accounting Standards Board (FASB) and International Accounting Standards Committee (IASB) have been establishing accounting standards based on fair value, which is in place of historical cost. Ristea & Jianu (2010) supposed that this is the model providing highest quality of accounting information.

For the purpose of in-depth integration into global economy, the application of international accounting standards is a compulsory requirement for Vietnam's enterprises so that they can be competitive and attractive in calling for investment capital. Acknowledging the importance of fair value accounting, Vietnam has gradually been updating and changing its policy based on this approach. However, due to certain subjective and objective conditions, this changing process is neither comprehensive nor thorough.

In businesses, accounting information is supplied for numerous types of users. However, the nature of financial accounting is providing information for investors as the first target group because of their importance to the business development. Under the strong integration in today's world, it is required to carry out studies on the use of fair value in Vietnam's accounting system. These include researches on perception of investors about fair value, which is essential for Vietnam to step by step build up and complete its fair value accounting system so that it can adapt to international accounting standards.

The general objective of this study is evaluating level of fair value accounting information users that identify the usefulness of fair value measurement. Then, specific goals are as followings:

- Evaluating understanding of accounting information users about fair value.
- Evaluating the interest of information users in accounting information measured by fair value.
- Identifying challenges and difficulties in the application of fair value from the perspective of accounting information users.

Based on the above research objective, research questions are:

1. How do accounting information users of enterprises understand the fair value?
2. From the point of view of the users of accounting information, how useful is the use of fair value information on the Financial Statements of investors?
3. From the perspective of accounting information users, what are challenges and difficulties in the application of fair value?

Due to those objectives, the research subject is accounting information users in enterprises, in particular, they are professional investors, who have the demand for being supplied with quality accounting information for their decision of investing in Vietnam market.

The research scope covers perception of investors about the information supplied by joint stock companies in Vietnam.

2. Literature review and methods

2.1 Literature review

The definition of fair value was introduced in international financial report standard 13 (IFRS 13) (Rankin et al., 2012), which stated that fair value is the price received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. According to Herz (Young, 2008), fair value is the reasonable price for transaction between those having all information about it.

However, Zacharski et al. (2007) demonstrated that fair value includes market price but it does not limit the circumstance at that available price. Based on international accounting standard 39 (IAS 39) on financial instrument, the recognition and measurement requires a business entity to choose the most effective operating market to measure fair value of assets and financial liabilities when there are different markets. The selected market should be where the amount of money gained from selling assets can be maximized and that of transferring a debt can be minimized.

The tendency of using fair value accounting is more and more appreciated by scientists than historical cost. White (2008) compared accounting based on fair value and that of historical cost in order to demonstrate benefits of using fair value accounting. Edwards (1975) stated that it is unreasonable to give the same asset price since it is purchased. Yanez (Young, 2008) supposed that fair value accounting is an advancement in financial reporting, which aims at providing users with timely and useful accounting information. Rankin et al. (2012) indicated that fair value accounting is the most appropriate approach with decision making of information users. Hunt et al. (2014) believed that fair value information is more beneficial for assessing operation results, evaluating financial status and measuring investment effectiveness.

Although fair value accounting is advantageous for users, its application is not simple. Liu & Wang (2009) carried out a research on applying fair value accounting in listed joint stock companies in China. Their survey results showed difficulties in the above application, which include (1) a shortage of complete theoretical system and instructive laws on the application of fair value accounting; (2) a limitation on provided information; (3) a deficiency of positive selling and buying market and (4) a lack of high quality accounting workforce.

Regarding fair value awareness of accounting information users, in 2010, Ristea and Jianu conducted a research on the awareness of fair value of accountants in Romania. The results showed that these accountants do not have accurate and complete understanding of fair value. Only 16% respondents could determine selling price as the basic price of fair

value, other 84% considered fair value as current cost (25%) and present value (59%). These accountants also demonstrated that they acknowledged the benefits of fair value accounting information, 87% indicated that they trusted fair value accounting more than historical cost. In addition, concerning the question of whether accounting principles could allow choosing either historical cost or fair value to calculate items in the balance sheet, 92% preferred the latter approach. In terms of difficulties in applying fair value, Ristes & Jianu did not make detailed questions for accountants to indicate specific obstacles of Romania accounting context. In this case, their questions helped to give statistics showing that 75% respondents thought that Rumania would have difficulty in fair value measurement, 14% others believed that difficulties would arise in the disclosure of fair value accounting information and 11% stated that they would have difficulty in recording items based on fair value. In conclusion, this research clarified that accountants in Romania were not ready for the application of fair value accounting. Another study that should be mentioned is the one by Kluever (2012) on opinions of accounting information users about benefits of fair value. The respondents were analysts, accounting information users of banks, financial firms and insurance firms. Research results revealed that information users applied fair value in certain stages of their decision making, which included identifying value of financial instruments, determining firm's capital, analyzing risks and using fair value as the input of pricing models. However, this research also clarified that in addition to fair value accounting information, analysts also utilized other sources of information. Observation showed that accounting information at level 1 (information of present market) was reliable for the application of fair value.

In Vietnam, there has not been any research on the awareness of information users about fair value, particularly that of investors. This paper would categorize participants based on their years of experience and specialization for a more detailed analysis into fair value accounting of each group, which is a big gap in previous studies. As a result, this analysis can help to propose specific and useful recommendations. This study also concentrates on the evaluation of investors about challenges and difficulties in applying fair value accounting in Vietnam with updated data in 2017. All of these mentioned details have not been covered by prior studies.

2.2 Methods

Vu Huu Duc & Le Vu Ngoc Thanh (2016) synthesized international studies and supposed that research data was measured by three approaches including (1) capital market basis (2) questionnaire application (survey) and (3) participants' responses in experimental method.

Regarding studies on fair value, it is really difficult to explore information through capital market due to the impossibility of collecting information. Especially, although the experimental method can exclude impacts of environmental factors and help to directly observe responses of participants, its sample is too small, which affects the representativeness of the whole population. Therefore, the author supposes that a survey with questionnaire would

be the most appropriate method for this research paper. In 2017, the questionnaire was sent to investors of listed firms in Vietnam's stock market through email. This helped to gather data about their awareness of fair value. Among 110 received responses, 8 ones were invalid, the other 102 were used to analyze and give research results.

In terms of questionnaire, there were 12 questions (Table 1). These questions were designed to gather information for the two research questions. Some of them served the purpose of evaluating awareness and perspective of investors about fair value measured by Likert 5 scale. The rest questions aiming at collecting general information were built up based on the author's selection and knowledge of financial statement and fair value.

- Research question 1: How do accounting information users of listed joint stock companies understand fair value?

Survey questions 2, 6, 7, 8 were designed to collect responses to the first research question. The second survey question 2 was about investors' knowledge of fair value concept. This question was adopted from the research by Ristea & Jianu (2010).

- Research question 2: From the perspective of accounting information users, how useful is the application of information in fair value financial statement for the investors?

The first survey question helped to clarify data showing whether or not the investors used information in the financial statement to make their decisions. The usefulness of applying fair value was confirmed by questions 3 and 4 to demonstrate participants' expectations of applying historical cost or fair value and to give their opinions of using these two approaches (Ristea & Jianu, 2010).

- Research question 3: From the perspective of accounting information users, what are challenges and difficulties for the application of fair value to measure items of financial statement?

International Internal Audit Standards Board (IIASB) listed certain difficulties in applying fair value, such as level of accuracy of accounting information and troubles in employing fair value pricing techniques to present and disclose accounting information. A source of literature review in this case is the research by Liu & Wang (2009) on the application of fair value accounting as well as its difficulties in China's firms which shared the same typical features as Vietnam's. By synthesizing studies and contrasting them to Vietnam's context, the author shed a light on difficulties and challenges for applying financial statement based on fair value with question 5, which helped to collect data about investors' opinions.

In addition to survey questions serving research ones, the questionnaire included two more items number 6 and 7 focusing on demographics of participants, which were the basis to release research data based on each category of experience years and specialization and consider differences among participants' answers.

Table 1: Questionnaire on fair value for investors

-
1. Please indicate level of importance of information to investment decision (Level: 1-extremely unimportant -> 5-extremely important)
 - Information of financial statement
 - Other information
 2. In your opinion, fair value is
 - Current cost
 - Selling price
 - Present value
 - All of the above
 - I have no idea
 3. Which of these approaches do you prefer for the report of items in financial statement?
 - Historical price
 - Fair value
 - Both
 4. If items in financial statement are based on fair value, are they different from those based on historical cost?
 - Yes, but negatively
 - Yes, and positively
 - No difference
 5. Indicate your opinion about the following difficulties in applying financial statement based on fair value (Level: 1- Totally disagree -> 5-Totally agree)
 - Knowledge of fair value
 - Vietnam's financial market and asset transaction
 - Legislative framework
 - Expenditure
 - Human resource
 - Pricing technique utilization
 - Accuracy level of accounting information
 6. How long have been an investor or played a similar role?
 - From 1 to 5 years
 - From 5 to 10 years
 - More than 10 years
 7. Your specialization is
 - Accounting & auditing
 - Banking & finance
 - Others
-

(Source: The author synthesizer)

Different aspects of the survey were organized based on the average value. Friedman test was employed to identify the whether differences of information were statistical or not. Kruskal - Wallis test was used to determine differences between groups of investors based on their experience years and specialization to evaluate their awareness of applying information in

financial statement based on fair value. Wilcoxon test was carried out to compare differences between information in the financial statement and other sources. Friedman, Kruskal – Wallis and Wilcoxon tests were utilized because of different size of different groups of participants, which did not meet the demand for standard distribution. These tests accounted for 5% of the research meaning.

3. Results and discussion

3.1. Descriptive statistics of survey participants

Among 102 investors, table 2 shows that in terms of their specialization, those with accounting-auditing background accounted for the highest number with 43.1%, which was followed by those with knowledge of banking & finance 35.3% and the number of investors with other specializations was 21.6%. In terms of investment experience, table 3 indicates that investors with less than 5 year experience were the highest contribution 56.1%. The number of investors with experience from 5 to 10 years constituted 23.5% and that of more than 10 years was 20.4%.

Table 2: The number and percentage of participants based on specialization

Specialization	Number of participants	Percentage %
Accounting & auditing	44	43.1
Banking & finance	36	35.3
Others	22	21.6
Total		100

(Source: The author synthesizer)

Table 3: The number and percentage of participants based on years of experience (%)

Investment experiment	Number of participants	Total %
Under 5 years	55	56.1
5-10 years	23	23.5
More than 10 years	20	20.4
Total		100

(Source: The author synthesizer)

3.2. Evaluation on investors' awareness of fair value

Table 4 reveals that 52% of investors chose three approaches, only 10.8% related fair value to selling price. The rest 32% respondents regarded fair value as present value and 3% selected it as current cost. These results are quite similar to those of study on accountants' awareness of fair value by Ristea & Jianu (2010), in which the number of participants choosing fair value as present value and selling price was higher than that of current cost. The analysis into differences in responses of different groups of participants based on investment experience indicates that those with less experience gave more accurate answer. 74.5% of investors with less than 5 year experience supposed that fair value covered three types of price (61.8%) or

selling price (12.7%), 54.2% of those with 5-10 year experience linked fair value with three types (38.1%) or selling price (14.3%) whereas the group of most experienced investors (more than 10 years) choosing these two types accounted for 45% (40% for three types and 5% of selling price). In regard of specialization, the group of “others” considered fair value as the above 3 types constituted 63.6% and selection of selling price was only 4.5%. The group with accounting and auditing major gave answers of these options were 51.2% and 16.3% respectively while those of banking & finance were 45.7% and 8.6%. These groups based on specialization also regarded fair value as present value of cash flow, which was proved with relatively high numbers (Banking & finance 45.7%, accounting & auditing 25.6% and others 22.7%).

Table 4: Investors’ awareness of fair value concept (%)

Fair value is	General answer	Based on investment experience			Based on specialization		
		Under 5 years	5-10 years	More than 10 years	Accounting- Auditing	Banking & finance	Others
Current cost	3	3.6	4.8		2.3		9.1
Selling price	11	12.7	14.3	5	16.3	8.6	4.5
Present value	32	21.8	38.1	50	25.6	45.7	22.7
All of the above	52	61.8	38.1	40	51.2	45.7	63.6
I have no idea	2		4.8	5	4.7		

(Source: The author synthesizer)

It can be seen that all definitions of fair value introduced by IASB, FASB and other organizations regarded fair value as exit value. However, depending on specific characters, status of assets and liabilities as well as their information at the time of pricing, fair value can be referred to as present cost (replacement cost) of the assets, liabilities or present value of future cash flow brought about by those assets and liabilities. Therefore, the author supposes that it was more accurate when investors chose “Selling price” or “All of the above” for question 2 concerning definition of fair value. In general, high percentage of selection of these two options clarified that investors understood the basic concept of fair value, which was the same as research result by Ristea & Jianu (2014). Analysis into groups of investors demonstrated that those with limited experience understood the concept of fair value better than those with more experience. Based on their specialization, all investors gave correct answers with high percentages. This is reasonable because in fact, the concept of fair value is new in accounting area. In the world, fair value appeared at the end of 1990s. However, in Vietnam, the official document mentioning fair value was the amended accounting law in 2015. Then, young investors, despite their limited experience, are more updated with knowledge of fair value than the experienced ones regardless of their specialization. Another option of fair value concept with answer of quite high percentage was Present value. This is correct because in different cases, the determination of fair value is calculated based on cash flow discount.

3.3. Evaluation on the usefulness of applying financial statement information based on fair value from the perspective of investors

Concerning investors' selection of information type for their investment decision, results are obvious that research participants assessed information of financial statement and that of other sources with equal role ($\mu > 4$). However, the former one was considered as much more important than the latter with average values of 4.16 and 4.09 respectively ($p = 0.012$) (based on Wilcoxon test). This result is the same as Kluever's (2012) which stated that in addition to information of financial statement, participants also used other sources that meet their demand.

In regard of demand for using either historical price or fair value to analyze information of financial statement (table 7), there was 56% of participants who wanted to apply both, 36% chose fair value and only 8% preferred historical cost. Most participants stated that the way of reporting financial statement items based on fair value would make difference on the positive basis in compared with that of historical cost (86.3%). In this case, the study by Ristea & Jianu (2010) shared the same results when concluding that users trusted in fair value accounting more than historical cost. Differences in answers of the above two aspects between groups based on experience (table 8) indicated that 82.6% investors with 5-10 year experience used the two types and 7.4% others wanted to use fair value. The followed group was investors with less than 5 year experience, of which the percentage of using two types was 55.6% and that of fair value was 35.2%. The group with more than 10 year experience wanting to use both types was 26.3% and that of fair value was 57.9%. All three categories based on experience years agreed upon the idea that applying fair value for items in financial statement would make differences from using historical cost in the aspect of bringing to investors more helpful information. The more experienced the investors were, the more they agreed with this idea (more than 10 years: 95%; 5-10 years: 91.3%; under 5 years: 80%). Analysis into groups of specialization made it clear that the group "others" wanted to use both types for financial statement, which was proved with highest percentage 68.2% , whereas the group of "banking & finance" held the highest percentage of utilizing fair value for financial statement (42.9%), which was followed by the group of "accounting & auditing" (37.2%) and the lowest group of "others" (22.7%). Most participants of specialization based groups stated that the application of fair value would make differences in providing information compared with that of historical cost, and that would be more helpful for information users. In particular, the group of "accounting & auditing" agreeing with this idea accounted for highest percentage 90%, that of "banking and finance" was 88.9% and the lowest percentage belonged to that of "others" with 72.7%.

Table 7: Investors' perspective of applying accounting information based on historical cost and fair value (%)

Type	General answer	Based on experience			Based on specialization		
		Under 5 years	5-10 years	More than 10 years	Accounting-auditing	Banking & finance	Others
Historical cost	8	9.3		15.8	4.7	11.4	9.1
Fair value	36	35.2	17.4	57.9	37.2	42.9	22.7
Both	56	55.6	82.6	26.3	58.1	45.7	68.2

(Source: The author synthesizer)

Table 8: Investors' perspective of impacts of using information of fair value financial statement in place of historical cost (%)

The use of fair value in place of historical cost for financial statement would:	General answer	Based on experience			Based on specialization		
		Under 5 years	Accounting-auditing	Under 5 years	Accounting-auditing	Banking and finance	Others
create negative difference	10.8	16.4	4.3	5	9.1	8.3	18.2
create positive difference	86.3	80	91.3	95	90.9	88.9	72.7
make no difference	2.9	3.6	4.3			2.8	9.1

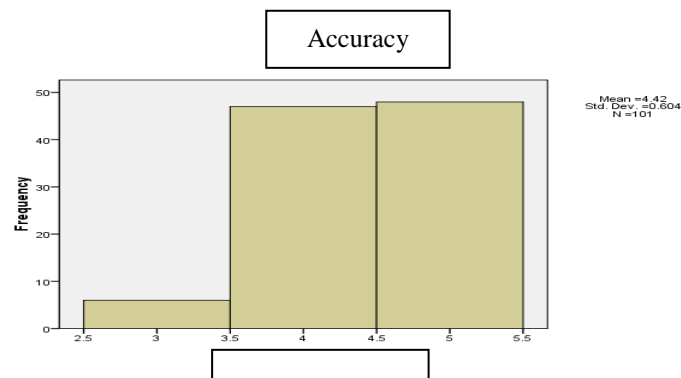
(Source: The author synthesizer)

It is obvious that the survey participants supposed that both information of financial statement and that of other sources were important for investment decision. However, they paid more attention to the former type. This is a reasonable fact because in listed firms of Vietnam's stock market, the information of financial statement is a relatively precise source, which is easy to be collected. Other sources of information are mainly based on different relationships and very difficult to be verified. Most investors want to use both of historical cost and fair value for information of financial statement. This is an appropriate fact with Vietnam's context, of which basically firms are still utilizing historical cost to reflect value of items in financial statement. Concerning limited quality of accounting information provided by historical cost, survey participants supposed that the application of fair value would supply them with more helpful information for decision making. In fact, there are numerous cases of investors wishing to use fair value. Nonetheless, due to poor information for fair value determination, these investors still have to apply historical cost. Therefore, the combination of both these two types is suitable with the context of Vietnam. Investors with 5-10 experience years are those approving this perspective at most.

3.4. Investors' opinion of difficulties and challenges if applying fair value

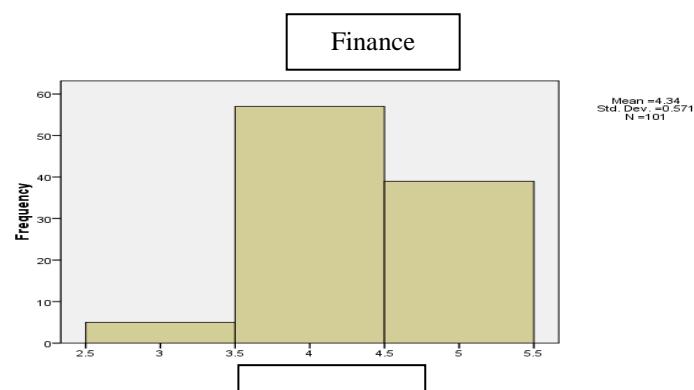
Participants indicated that all matters of fair value knowledge, financial market and financial transactions in Vietnam, legislative framework, fair value applying cost, human resource, pricing technique utilization and accuracy of accounting information were difficulties in the application of fair value ($\mu > 4$). Among these problems, these participants considered accuracy of accounting information as well as financial market and asset transaction in Vietnam as the two biggest hindrances ($\mu = 4.42; 4.34$). 47,5% and 46.5% of these participants greatly agreed and agreed with the idea that applying fair value in Vietnam would be difficult because of accuracy character of supplied information and only 5.9% did not have any opinion. 38.6% agreed upon the idea that underdeveloped financial market and asset transaction in Vietnam has resulted in troubles for the application of fair value, 56.4% shared the same agreement and 5% did not have any opinion, only 7.9% did not have any idea and 3% did not agree. These difficulties are quite similar to those in China's market, which is proved in the research by Liu & Wang (2009) (Diagrams 1 and 2).

Diagram 1: Agreeing level of difficulties in identifying accuracy of accounting information based on fair value



(Source: The author synthesizer)

Diagram 2: Agreeing level of difficulties of financial market and asset transaction in the application of fair value accounting (Level: 1- Totally disagree -> 5-Totally agree)



(Source: The author synthesizer)

It can be seen that the accuracy of information is not high. This results from the fact that in an underdeveloped market with insufficient information like Vietnam, the determination of fair value is based on different hypotheses and estimations of firms'

management board, which leads to poorly accurate accounting information. Additionally, the management board might take advantage of determining assets' value based on fair value to distort information of business operation for their own purposes, which invades benefits of investors. Vietnam's financial market and asset transaction is not greatly developed because the best information of fair value is the transaction price in the market with high liquidity. For example, the purpose of determining fair value of a financial instrument is identifying the transaction price of this instrument on the financial reporting date of an active market, of which the accessing potential is not limited. However, in reality, Vietnam's financial market, especially its stock market has really small scale. According to statistics in 2006 by the State Security Commission of Vietnam, the capital size of the stock market constituted 14% of capital supply proportion for the economy, the capitalization rate accounted for 36% of GDP. The average transaction scale was low. Particularly, a lot of stocks did not have transaction price and/or liquidity. This would make it infeasible to determine transaction price of assets or impossible to reflect precise fair value of financial instrument.

4. Conclusions and Policy Implications

In order to ensure the usefulness of information in financial statement, possibly apply fair value accounting at optimal basis and manage to solve the above arising difficulties, the author suggests the following recommendations:

Firstly, due to investors' relatively good understanding of general concept of fair value, especially the under 10 experience years ones', Ministry of Finance should quickly issue regulations, establish fair value standards and speed up the roadmap of fair value accounting application so that it is compatible with IFRS. It is essential for the Ministry to invite international experts, which is attached with cooperation with different training units and enterprises to organize training course as well as conferences to equip investors with in-depth knowledge of fair value's contents. Vietnam's authorities should build up public and transparent roadmaps of applying fair value accounting standards so that enterprises can prepare their plans for investment into material base (software, different means) suitable human resource training. This preparation helps to avoid passiveness in implementation of those plans.

Secondly, relying on investors' high appreciation of applying information of financial statement for decision making demand and their recognition of evaluating items of financial statement based on fair value, Ministry of Finance should quickly build up regulations recording information in fair value financial statement, which has been carried out by certain countries. This helps to provide historical cost and fair value information in financial statement system. The fair value record will be presented in detail in financial statement to supply appropriate information with users.

Thirdly, in order to tackle with difficulties in applying fair value, Ministry of Finance and State Security Committee should prioritize solutions ensuring accuracy of accounting data so that it is appropriate with investors' demand, announce punishment policies on public firms with big differences between data before and after auditing and require these firms to give detailed explanation about these differences, as well as

regularly implement activities of inspection and supervisory on firms' derogations. The Government should continue speeding up its process of innovating, enhancing international economic integration, issuing policies on attracting and creating advantages for huge investors to participate in Vietnam's market. This aims at transactions of organized investors as well as domestic and national investment funds. At the same time, it should maintain macro-economic stability, minimize risks of inflation changes, exchange rate, interest rate and the state's policies as well as improve information transparency in order to build up great trust of investors for their decision. Regarding joint stock firms, it is essential to train skillful accountants and ensure that accounting information and data is recorded and reported with complete and objective evidences, which are the same as reality in terms of their contents and value of accounting event. Concerning investors, it is suggested to improve their importance of supervising enterprises, making decisions on significant issues of the invested enterprises according to their authority regulated by enterprise law and companies' charter in order to ensure the effectiveness of their investment.

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A Comparison of American Electric Power Company Annual Reports from the 1980s to 2017 Concerning Disclosure of Any and All Matters about the Physical Environment or Climate Change

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Abstract

Companies in many nations such as England, Germany, The United States and Vietnam issue public documents in addition to annual reports with the audited annual financial statements. These are often discussed as sustainability reports or corporate responsibility reports. In most countries nowadays, these documents are voluntary and are prepared without legally required standards. Researchers, Investors and others interested in the environmental information of a company typically refer to these documents. However, this research chooses to explore what information concerning the physical environment is presented in the required annual reports (with audited financial statements) of five electrical power companies in the United States. The annual reports of these companies are examined both in the late 1980s and for the year 2017. The conclusion is that the reports from the late 1980s have less information on the physical environment and do not discuss climate change at all. The reports from 2017 have relatively more information concerning the physical environment and do occasionally mention climate change. We conclude that it is appropriate that companies consider issuing sustainability reports in addition to their annual reports with financial information given the modest amount of environmental and climate change information currently presented in annual reports.

Keywords: *Physical environment, Annual report, Environmental Issues*

JEL codes: *M40, M41*

1. Introduction

This paper will examine annual reports (and/or the nearly identical SEC 10-Ks) of certain investor owned electric power companies. Such annual filings required by the 1934 Securities Exchange Act. This legislation also created the Securities and Exchange

Commission (Spiceland et al., 2018). The Securities Exchange Commission on its web site observes the following concerning company annual reports.

“The annual report to shareholders is a document used by most public companies to disclose corporate information to their shareholders. It is usually a state-of-the-company report, including an opening letter from the Chief Executive Officer, financial data, results of operations, market segment information, new product plans, subsidiary activities, and research and development activities on future programs. Reporting companies must send annual reports to their shareholders when they hold annual meetings to elect directors. Under the proxy rules, reporting companies are required to post their proxy materials, including their annual reports, on their company websites.

The annual report on Form 10-K, which must be filed with the SEC, may contain more detailed information about the company’s financial condition than the annual report and will include the annual financial statements of the company. Companies sometimes elect to send their annual report on Form 10-K to their shareholders in lieu of, or in addition to, providing shareholders with a separate annual report to shareholders (Securities and Exchange Commission, 2018).

Investor-owned electric companies are subject to extensive government regulation by the Federal Energy Regulatory Commission (FERC), and the state utility commissions of each state they operate in. This regulation involves obtaining prior approval for all major investments in operating assets, and it includes accepting prices determined by the state regulatory board in a formal process that includes opportunities for customer groups (e.g. an association of major local industrial customers), and even individual customers to argue why the electricity price should be required to be lower. This makes the board of directors and the management team of all investor-owned electric power companies exceptionally concerned about what consumers, investors, investment bankers, legislators, the press, and almost everyone thinks about the electric companies conduct and what it thinks about the issues of the day. However, in the end the annual report is for investors and potential investors and they always have a continuing focus on profitability and dividends.

As it happens we choose the 1980s as the start date for accessing investor-owned electric power companies concerns about climate change just because it represented a long enough time that some change might be observed. On August 1 “Losing Earth: The Decade We Almost Stopped Climate Change.” By Nathaniel Rich. It was published in the New York Times Magazine. The article made the case that expert community in Washington did not find a way to implement change, in large part because some scientists in the government and other government leaders were unconvinced things were all that serious for certain, and in any event climate change prevention could be put off for a while anyhow.

We argue that if we look at the reports from the 1980s we see limited concern with the environment and no mention of climate change at all. No notion of Nathaniel Rich’s idea that we knew in the 1980s what the score was. We saw in company reports opposition to

acid rain legislation because of high cost and unguaranteed results. Nothing like the guaranteed climate change promised by scientists in the 1980s can be seen anywhere.

In current (2017) we see climate change featured in the California utilities, but not in all the reports. Except in the California-based utilities no urgency is detectable. Managers know, perhaps but they cannot get organizational clearance to talk about something they do not just now want to spend money on and make hard choices.

2. Results and discussion

ITEM 1 of 10 (American Electric Power, 1985)

The Overview on page 1 included what is troubling information for any investor-owned electric power company – a decline in both earnings and the earning per share and dividends per share. The Letter to the Shareholders on pages 2 and 3 stressed first that residential and commercial sales grew. When mentioning the bad news about a loss on the Zimmer plant, the letter stated “...this chapter is now behind us.”

Later in the shareholder letter the subject of acid rain surfaced, and the letter stated the issue of acid rain “...is an environmental, economic and political problem.” Concluding later, “we believe we have an obligation to ensure that our customers are not exposed to unnecessary costs that may not result in environmental improvements.” Unsaid is that AEP is also likely hopeful of not exposing its investors to such costs. The shareholder letter also references a position statement of position on page 20 (presumably on the costs of acid rain), but unhappily this page is unreadable.

Financial Statement Note 1 on page 37 discusses corporate responsibility to pay “Black-Lung Benefits” because of coal miner employees.

No mention of climate change concerns exist in the annual report and seemingly the thrust of environmental concerns seem to be in the nature of cost control only.

ITEM 2 of 10 (American Electric Power, 2017)

The 2017 Annual Report of American Electric Power (AEP) now has a category labeled “Environmental Issues” that begins on page 14 and continues until the end of page 21. The first sentence in the category “Environmental Issues’ on page 14 states “AEP has a substantial capital investment program and is incurring additional operating costs to comply with environmental control requirements.” Costs mentioned include disposal of coal combustion by-products, clean water rules, and water discharge issues.

The second paragraph indicates AEP is challenging some Federal EPA requirements in court. Management, we are told, believes that there exist cheaper but equally effective alternatives than those mandated by the EPA. The third paragraph promises that AEP will seek recovery of expenditures for pollution control through rates in regulated jurisdictions. This is reasonable, right, and proper. However, words indicating a commitment toward a better environment for all would be proper also.

On page 19 Climate Change is explicitly mentioned, however the coverage is limited to carbon dioxide rules and proposed regulations and the ongoing challenges in various courts. This portion of the document concludes with a brief discussion of the economic and accounting consequences to AEP if it is forced to close some coal-fired generation facilities.

ITEM 3 of 10 (Commonwealth Edison, 1986)

On page 1 Commonwealth Edison spent most of the page celebrating its early corporate history in that 1987 was its centennial in that its ancestor corporation, the Chicago Edison Company began in 1887.

The letter to the shareholders opened with a commitment to remaining a competitive energy supplier. This means competitive electric prices, especially for those large customers with a choice – industrial customers who site plants with an eye on electric rates. Of course, in a cost-of-service rate regulated industry, this must mean cost control. So, it is no surprise that on page 7 the shareholder letter mentions the intensified cost containment program in place.

Much of the document mentions the challenges faced by the company in getting utility commission approval for approving the costs of new nuclear generation as rate base assets. If actual costs of such assets are approved for rate base treatment the company will earn a return on these assets. If such approval is denied the company and its investors will suffer an economic loss.

There was no mention of climate change or the environment except for a sentence on page 11, where company management states, “The construction program, coupled with additional costs imposed by environmental compliance regulations, regulatory delays and difficulties encountered in meeting design and construction schedules, has required the Company to seek large amounts of new capital...”

So, the only mention of anything environmental is cost related.

ITEM 4 of 10 (Commonwealth Edison, 2017)

On page 1 Exelon reveals that Commonwealth Edison is now but a part of a large multi-jurisdictional electric holding company similar in many ways to American Electric Power and The Southern Company. It boasts that it has more utility customers than any other U.S. company.

On page 22 begins a four-page coverage of Environmental Regulation. It is clearly set out that those individuals with primary responsibilities in the environmental area have their performance reviewed annually. It is stated that, “The Exelon Board of Directors has delegated to its Generation Oversight committee and the Corporate Governance Committee the authority to oversee Exelon’s compliance with health, environmental and safety laws and regulations and its strategies and efforts to protect and improve the quality of the environment, including Exelon’s internal climate change and sustainability policies and programs....”

Under the headline “Global Climate Change,” on page 24 we are told that, “Exelon, as a producer of electricity from predominantly low and zero carbon generating facilities

(such as nuclear, hydroelectric, natural gas, wind and solar photovoltaic), has a relatively small greenhouse emission profile, or carbon footprint compared to other domestic generators of electricity (Exelon neither owns or operates any coal-fueled generating assets. Nuclear is a big reason. Nuclear plants are low carbon in operation, but the building of any new nuclear plants would have a serious carbon footprint.

ITEM 5 of 10 (Pacific Gas & Electric, 1989)

On page 1 PG&E discussed the challenges it faced during the October 17, 7.1 magnitude earthquake. The company noted its efforts were praised by many. We can guess that this was in large measure do its efforts to restore power to everyone as quickly as possible. On page 6 of the report the shareholder concludes with its attempt to use compressed natural gas powered vehicles in order "...help reduce the amount of pollution in California's skies."

The environment is also covered on page 37, where we learn that concerning the topic

"Environmental clean-up matters", "The Company is currently assessing measures that may need to be taken principally at retired manufactured gas plant sites, to comply with environmental laws and regulations."

The Company frequently mentioned the regulatory approval of its new Diablo Canyon Nuclear Power Plant, and of how (page 4) it is recognized, "as one of the nation's premier nuclear power plants." On page 22 on the Balance Sheet we can see its capitalized cost is almost six billion dollars, more than all other electric generating power plants combined."

ITEM 6 of 10 (Pacific Gas & Electric, 2017)

This document includes company annual report features on pages i to vi, and then the PG&E 10-K document constitutes the remaining 182 pages. On page iii PG&E discussed the challenges it faces from California wildfires. Also, it proudly mentions on page iii that due to PG&E's leadership in clean energy and corporate responsibility, the company has been honored by its inclusion in the prestigious Dow Jones Sustainability Index.

The Diablo Canyon Power Plant is mentioned on page iv in first half of the shareholder letter, in that the Company reveals it will close it at the expiration of its current operating license. The date is not stated. The intent is to replace the Diablo Canyon generation, "with a combination of renewables and energy efficiency." The shareholder letter concludes with such statements as, "We look forward to decarbonize the transportation sector by providing clean fuels." So the new Diablo Canyon plant mentioned in the 1989 report is now unloved even though it is now low carbon in that it is nuclear.

In the 10-K portion of the document, pages 22 – 26 are details of "Environmental Regulation," including "Air Quality and Climate Change." Some coverage is provided of conflicts ongoing between the Trump Administration and the State of California.

On page 27 a long discussion of wildfires reveals the fact that, "If the Utility's facilities, such as its electric distribution and transmission lines, are determined to be the cause of one or

more fires and the doctrine of inverse condemnation applies, the Utility could be liable for property damage, interest, and attorney's fees without having been found negligent..." This could mean substantial economic damage to PG&E and its investors.

ITEM 7 of 10 (Southern California Edison, 1985)

On page 7 Southern California Edison note, that it "uses nine different basic energy resources to generate electricity – more than any other utility in the world. They are uranium, solar, wind, geothermal, biomass, water, coal, oil and natural gas".

Page 16 reports a tragic accident at the coal-fired Mohave Generating Station in Laughlin, Nevada where the bursting of a high-pressure steam line resulted in six employee fatalities and multiple injured employees.

The last paragraph on the last page of the report (page 58) the company acknowledges it is subject to many rules and regulations, including those for, "environmental protection." Not much of an obvious commitment to the environment is observed in this report.

ITEM 8 of 10 (Southern California Edison, 2017)

On page 1 in the Letter to Shareholders, Pedro Pizarro, President and Chief Executive Officer of Southern California Edison noted, "Toward the end of 2017 we faced new challenges from massive wildfires statewide..." In the next paragraph on page 1 he continues, "In December, we experienced in our service territory the largest wildfire by acreage ever recorded in California history." On page 3 the shareholder letter concludes with this short paragraph, "There are challenges ahead, but the solutions are within our reach. Our core values will guide our actions as our team drives our strategy forward. We will meet our customer's needs, play a critical role in ensuring that California achieves its climate objectives and create value for shareholders." Wow! Maybe a little caution about overpromising is in order.

Maybe caution about climate promises is not the Southern California Edison way, as on page 4, the company boldly states "We are charting a path to help curb climate change and cleanse our air of smog-forming pollutants. It's the reason we are building a grid that delivers more and more carbonfree energy."

Now Southern California Edison has climate change in its sights, but maybe success will be harder than it seems to tell us.

ITEM 9 of 10 (The Southern Company, 1986)

On page 9 the Southern Company seems most concerned with operating efficiency as it observes, For the fifth consecutive year, our coal-fired and nuclear units surpassed industry averages for operating availability – the percentage of time units are available for service.

Revenue generation is also to be celebrated (page 13), "Across our service area, energy sales increased in every major category during 1986 - reflecting the continued growth of the region and an unusually hot summer. In July 30, 1986 at the height of a prolonged heat wave, demand for electricity broke all previous records - exceeding peak demands which had been projected through the early 1990s" Disappointedly no thought that this heat

wave might be more than a one-off thing with the possibility of structural change in climate an unhappy possibility.

The Southern Company was celebrating that the Vogtle nuclear power plant (units 1 and 2 were near commercial operation, and that they represented, (page 18) “the Southern electric system’s largest project”.

Acid rain legislation concerns Southern Management (page 21), “because they offer no assurance of achieving environmental benefits and they would be very expensive to implement.”

ITEM 10 of 10 (The Southern Company, 2017)

On page 8 the Southern Company seems enchanted with “environmentally unrivaled venues.” This mostly about the Georgia Dome and the Sun Trust park in Atlanta.

On page 23 the company brags about research money it has donated to help a species recovery of the local bat population.

Discussing its business activities on page 41, Southern Management states, “Many factors affect the opportunities, challenges, and risks of the Southern Company system’s electricity and natural gas businesses. These factors include the ability to maintain constructive regulatory environments, to maintain and grow, sales and customers, and to effectively manage and secure timely recovery of costs. These costs include those related to long-term growth, stringent environmental standards, reliability, fuel. Restoration following major storms, and capital expenditures, including constructing new electric generating plants, expanding the electric transmission and distribution systems, and updating and expanding the natural and distribution systems.”

Sadly, here the environment is seen only as a cost driver, like bad storms.

3. Conclusion

Our detailed survey of five electric power company annual reports from the late 1980s and 2017 show little information concerning the physical environment in the 1980s and no discussion of climate change in the 1980s. We choose electric power companies as their industry is more often involved in discussions of climate change and the physical environment. On the other hand, we found relatively more information on the physical environment in 2017 and occasional discussion of climate change.

We therefore believe that it is valuable that many electric power companies issue sustainability reports or release other documents related to climate change and the physical environment. We suggest that more research be conducted on other industries and other time periods.

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**Preparing for Integrated Report: The Vietnamese Enterprises Need
to Improve the Quality of Annual Reports**

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Abstract

Integrated report is a new topic that concerned in many countries over the world because of the benefits that brings to businesses, communities, and the sustainable development of each country. Integrated report demonstrates how an organization think, plan, and tell their business stories. To make the integrated report is not easy to any business. In order to preparing for an integrated report in the future, businesses needs to make a good financial reports, annual reports and sustainable reports. This study focuses on the annual report, especially the corporate responsibility disclosure in the annual reports of Vietnam listed companies after Vietnam issued the Circular No.155/2015 guiding disclosure on the stock market. Data collected from 162 listed companies, they prepared annual reports in 2015, before promulgating the Circular No.155/2015, and annual reports in 2016, 2017 after this Circular took effect. The results show that the quality of information disclosure of these companies generally has not significant improved although the proportion of companies with excellent quality report has increased.

Keywords: *Annual report, Disclosure, Integrated report, Responsibility, Sustainable development.*

1. Introduction

In the current economic and social context, many companies are now disclosing voluntary corporate social responsibility or sustainability reports that highlight environmental, social and governance issues related to their business and industry. Such reports typically serve as a supplement to the company's annual financial reports. There is an emerging international trend in business where a few innovative companies spanning

different countries and industries have looked beyond separate reports for financial and nonfinancial results, integrating this information into a single document referred to as ‘One Report’. An integrated report has also been referred to as ‘One Report’ by Eccles and Krzus (Eccles & Krzus, 2010). ‘One Report’ implies that integrated report provides information on financial and non-financial performance in a single document, showing the relationship between financial and non-financial performance and how these inter-related dimensions are creating or destroying value for shareholders and other stakeholders.

Integrated report brings together financial and non-financial measure in one piece of the report, linking among financial and non-financial performance metrics (Hoque, 2017,)

Integrated Report brings together the material information about an organization’s strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates (IIRC, 2011)

One of the important reasons driving the implementation of Integrated Report is the need of stakeholders, especially the providers of capital, following the 2007-2008 financial crisis. Stakeholders, including government agencies, require a higher degree of transparency and accountability. It has also been recognized that the external environment has always had a strong impact on the performance of the business, in addition to increasing concerns about environmental and social sustainability. Integrated report can help solve these problems.

Over the past few years, the Vietnam State Securities Commission (VSSC) together with international organizations such as IFC, PwC, IIRC have been trying to introduce the methodology of integrated report to listed companies, as a means to dramatically improve the quality of annual reports.

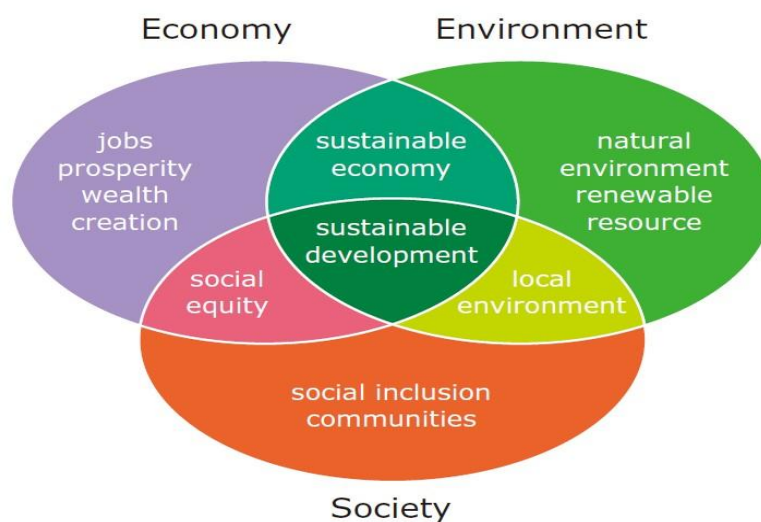
Integrated report plays an important role for companies in terms of their operations towards sustainable development. Vietnamese companies need to prepare the necessary elements. First of all, they need to improve the quality of the reports, especially the annual reports. So, this paper focuses on studying the current status of annual reports of Vietnamese listed companies in order to consider an integrated report preparation in next time. There is a large amount of information provided in the annual reports. However, this study does not assess all content of the annual reports but focuses mainly on the disclosure of environmental and social sustainability in accordance with Appendix 04 of Circular No. 155/2015, associating with sustainable development.

2. Theoretical Framework of Sustainable Development and Integrated Report

2.1. Sustainable Development

Sustainable development is the organizing principle for meeting the human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend. The desired result is a state where living conditions and resources continue to meet human needs without undermining the integrity and stability of the natural system. Sustainable

development can be classified as development that meets the needs of the present without compromising the ability of future generations sustainable development the Brundtland Commission of the United Nations in 1987. Triple bottom line (TBL) accounting expands the traditional reporting framework to take into account social and environmental performance in addition to financial performance. In 1981, Freer Spreckley first articulated the bottom line in a publication called 'Social Audit-A Management Tool for Co-operative Working'. In this work, he argued that enterprises should measure and report on financial performance, social wealth creation, and environmental responsibility. The phrase "triple bottom line" was articulated more fully by John Elkington in his 1997 book *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*. A Triple Bottom Line Investing group advocating and publicizing these principles was founded in 1998 by Robert J. Rubinstein.



In general, sustainable development requires enterprises to consider their operating objectives in all three aspects: financial performance, environmental performance, and social performance. There are changes, from the perspective of business as an independent economic and legal entity to the point of a socio-economic entity. An enterprise is a social organization, which affects the interests of stakeholders such as shareholders, employees, creditors, customers, government organizations, and the public (Freeman & Reed, 1983; Ogan & Ziebart, 1991). Managers are not just representatives of shareholders but protectors of the company, responsible for the existence and growth of the enterprise, for the benefit of the community, enterprises must be responsible for the social responsibility (Suojanen, 1954). Social responsibility helps the company to develop sustainably.

Sustainability report first appeared during the 1970s with the publishing of the first wave of social reports, mainly in the USA and Western Europe (Kolk, 2010). While the practice had faded out by the 1980s, environmental report emerged in the late 1980s (Kolk, 2010). KPMG (2011) shows that non-financial report by large multinational corporations increased rapidly, over 95 per cent of the 250 largest companies in the world and 69 percent of companies which are largest 100 companies by revenue in 34 countries, disclose their

sustainability performance in the 1990s (KPMG, 2011). The amount of disclosure increased rapidly over the last decade and is anticipated to continue to increase.

2.2. Integrated Report

Integrated report is the latest reporting innovation, emerging in 2010 with the formation of the International Integrated Reporting Council. The IIRC (2013) developed the International <IR> Framework to establish guiding principles and content elements that govern the overall content of an integrated report. However, an integrated report is not presented as the next generation of sustainability report but as an attempt to promote “a more cohesive and efficient approach to corporate reporting that draws on different reporting strands” (IIRC, 2013). An integrated report aims to bring together detailed financial information, operational data and sustainability information to focus only on those matters “that have a material bearing on the ability to create value in the short, medium and long term” (IIRC, 2013). The IIRC expect integrated report to become the “corporate reporting norm. No longer will an organization produce numerous, disconnected and static communications” (IIRC, 2013).

An integrated report is a report that integrates fully quantified information into specific indicators on the financial, managerial, environmental and social aspects, giving a holistic view about the operation of the business. With integrated report, businesses use it as a tool to engage and communicate with stakeholders in a clear way about strategies, plans, and how resources are used (finance, production, intellectual property, human, social relationship, and nature) and values are created in the context of the external environment in which the organization is dominant. Components based on the integrated report model include: strategy and resource allocation, external and organizational overview, business model, governance, opportunity and risk, prospects activity rate. And more importantly, all this must be presented in a way that leads to creating value in the short, medium and long term for the business.

With such an approach, integrated report requires the enterprise to have an integrated thinking, for example, take a proactive and holistic view of the relationship between the business's activities and functions. The resources are used or influential, in the end of orientation is to create value. Thus, integrated report focuses more on strategies and future directions. Obviously, this can help to overcome the limitations of traditional corporate financial reports that present a lot of past activity, while analyzing and forecasting new prospects that have a strong impact on expectations and the decision of the investor.

Experts say integrated report is more than just a combination of three reports: annual report, sustainability report, and corporate financial report but an innovative integration of information to convey a story business. So, in order to build an integrated report, businesses need to engage with stakeholders, especially investors, to identify key issues that need to be addressed. The companies have to prepare a sustainability report, an annual report or

collecting and disclosing material social, environmental and economic information before preparing an integrated report.

The Government of Vietnam has paid attention to the issue of environmental protection since the 1990s (the first Environmental Law was promulgated in 1993 (revised and finalized in 2005, 2014, 2017), soon after several years the economy began to shift from central planning to market economy (1986). In 1996, Vietnam announced the application of 97 environmental standards in Vietnam. An important foundation for sustainable development is the creation of favorable conditions for organizations to take part in environmental protection activities, to inspect and supervise the implementation of environmental protection activities in accordance to the law; makes exploitation, rational use and saving natural resources; develop clean energy and renewable energy; promote recycling, reuse and minimize waste; intensify the training of human resources for environmental protection; develop environmental science and technology; study, transfer and apply advanced technologies, high technologies and environmentally friendly technologies with environment; Apply environmental standards to better meet environmental requirements; Integrate environmental protection activities, protect resources with response with climate change, environmental security. Vietnam clearly states that projects that are at risk of adverse impacts on the environment must carry out environmental impact assessments. Accordingly, organizations must consider the type, technology, and scale of production, business, and services; Raw materials and fuel used; Forecasting the types of wastes generated, other impacts on the environment; Measures to treat wastes and minimize negative impacts on the environment; Organizing the implementation of measures to protect the environment. The Government of Vietnam also requires the manufacturing, business, and service enterprises which generate large volumes of waste and seriously threaten the environment to have specialized sections or personnel in charge of environmental protection. The environmental management system must be certified according to the Government's regulations.

Vietnam has issued some policies and mechanisms to encourage the enterprise to redirect activities in an environmentally friendly manner. If they invest in areas related to environmental protection and production, it is possible for the enterprise to enjoy many tax incentives, interest rates, land rent, and other administrative procedures. The government also prioritizes the implementation of programs and projects to assist enterprises in finding solutions for cleaner production and energy efficiency. The breakthrough in the issuance of legal documents on corporate responsibility reporting has included the issuance of Circular No.155/2015/TT-BTC of the Ministry of Finance on disclosure of information on the stock market. Accordingly, it is required that public companies disclose information related to sustainable development, social and environmental responsibility. Regulations on disclosure of environmental and social information in Circular No.155/2015/TT-BTC mark a significant step to Vietnam towards a sustainable financial market. This is an area that international investors are very interested in, as the company's long-term development prospects will be presented in the annual report through sustainable development goals,

compliance with environmental protection laws, as well as how the enterprise manage environmental impacts and social and risks. Responsible and sustainable investment is becoming one of the most important investment criteria in the world. In Asia, this investment trend is also gradually developing and Vietnamese enterprises have to change to have the opportunity to attract investment.

Thus, from the perspective of state management, Vietnam has no legal documents on environmental cost and social responsibility cost accounting, but only on the disclosure of responsibility information in the annual reports, sustainable development reports of listed companies.

3. Research Methods

To consider the disclosure of environmental liabilities, this paper studies the annual reports of 262 listed companies, before Circular No.155/2015 was issued in 2015 and in 2016, 2017, two years after the Circular No.155/2015 took effect. The purpose of the review the data of listed companies in 2015 is to assess the level of their responsibility disclosure without compulsory government regulations. Companies are in real estate and construction (89 firms), Technology (7 firms), Industrial production (72 firms) Energy (24 firms), Agriculture (34 firms). In addition, the authors also study the sustainability report of a number of Vietnam firms which have developed their own sustainable development reports to assess the quality of information.

According to Cooke (1989), Chau & Gray (2002), Hossain et al. (1995), Dang et al. (2018), "1" score will be given to the company when any responsibility information is available in the annual report and "0" if no responsibility information is available in the annual report (Chau & Gray, 2002; Cooke, 1989; Dang, Pham, Tran, & Dang, 2018; Hossain, M. H. B., & Rahman, 1995). Authors read information on annual reports, focusing on information about environmental responsibility disclosures, including Resource management; Energy consumption; Water consumption; Compliance with environmental protection laws, other account information including employee related policies and reporting responsibilities to the local communities (according to Circular No.155/2015/TT-BTC). "1" score will be given to companies if they have any responsibility information in annual reports and "0" if no responsibility information is available in the annual reports.

According to Wallace & Naser (1995), information disclosure is an abstract concept that is difficult to measure directly (Wallace, 1995). The level of disclosure of the information studied is based on the attributes of the information, including reliability of information, the objectivity of information, timeliness of information and comprehensiveness of information. So, this research divides the level of information disclosure into the following levels: weak, normal, passable good, good, excellent. The level of disclosure is assessed by the authors, based on the number of pages and a detail of disclosure.

All of collected data will be aggregated and analyzed as descriptive statistics.

4. Results and Discussion

Of the 226 companies selected survey in five areas above, 162 companies reported responsibility information in 2016, 2017 account for 71.7%, 64 firms without responsibility accounted for 28.3%. 156 companies reported responsibility information in 2015. This study focuses on 162 companies to assess the level of disclosure of responsibility information and evaluate the quality of the annual report in terms of disclosure of responsibility information. Results of responsibility information disclosure according to the index is as follows Table 1.

Although Vietnam did not require companies to reporting information relating to environmental and social responsibility of the company in 2015 but according to the authors' compilation from the companies' 2015 annual reports, the number of companies reporting on the management of raw materials, energy consumption, and water consumption was at around 46.3% - 46.9%, this figure was 50.0% - 73.5% in 2016 and 2017. That sample focused on companies operating in areas that have an impact on the environment. But there was no company which disclosed information relating to the compliance with the law on environmental protection. 96.3 percent of companies reported policies related to employees, responsibility for the local community in 2015, while 100 percent of companies reported policies related to employees in 2016 and 2017, 95.1 percent and 96.9 percent of companies reported responsibility for the local community respectively in 2016 and 2017. This is fairly easy to publish compared to information that has an impact on the environment.

Table 1. Information disclosure level of companies

		2015		2016		2017	
		N	%	N	%	N	%
<i>Management of raw materials</i>	<i>The total amount of raw material used for the manufacture and packaging of the products as well as services of the organization during the year</i>	76	46.9%	113	73.5%	113	73.5%
	<i>The percentage of materials recycled to produce products and services of the organization</i>	76	46.9%	113	73.5%	113	73.5%
<i>Energy consumption</i>	<i>Energy consumption - directly and indirectly</i>	75	46.9%	110	67.9%	111	68.5%
	<i>Energy savings through initiatives using energy efficiency</i>	75	46.3%	110	67.9%	111	68.5%

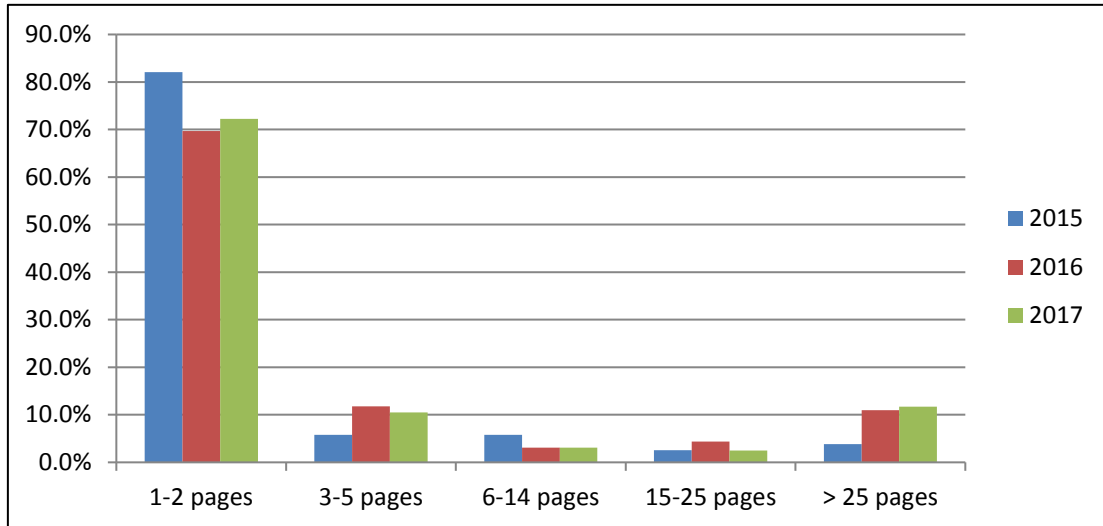
		2015		2016		2017	
		N	%	N	%	N	%
	<i>The report on energy saving initiatives; report on the results of these initiatives.</i>	75	46.3%	110	67.9%	111	68.5%
<i>Water consumption (water consumption of business activities in the year)</i>	<i>Water supply and amount of water used</i>	75	46.3%	110	67.9%	106	65.4%
	<i>Percentage and a total volume of water recycled and reused</i>	56	46.3%	81	50.0%	91	56.2%
<i>Compliance with the law on environmental protection</i>	<i>Number of times the company is fined for failing to comply with laws and regulations on environment</i>	0	0%	0	0%	0	0%
	<i>The total amount to be fined for failing to comply with laws and regulations on the environment</i>	0	0%	0	0%	0	0%
<i>Policies related to employees</i>	<i>The number of employees, average wages of workers.</i>	156	96.3%	162	100%	162	100%
	<i>Labor Policies to ensure the health, safety, and welfare of workers</i>	156	96.3%	162	100%	162	100%
	<i>Training employees : - The average number of training hours per year, according to the staff and classified staff - The development and continuous learning program to support employment and development</i>	156	96.3%	162	100%	162	100%
<i>Report on responsibility for the local community</i>	<i>The community investments and other community development activities, including financial assistance to community service</i>	156	96.3%	154	95.1%	157	96.9%

(Source: Comprehensive Authors from Annual Report of Listed firms in 2015, 2016, 2017)

An In-depth study about annual reports of 162 listed companies which disclosed the responsibility information following to the Circular No.155/2015/TT-BTC shows that the

number of pages disclosing about the corporate responsibility is relatively low. The number of pages which has from 1 to 2 pages in annual reports accounts from 70% to 82%.

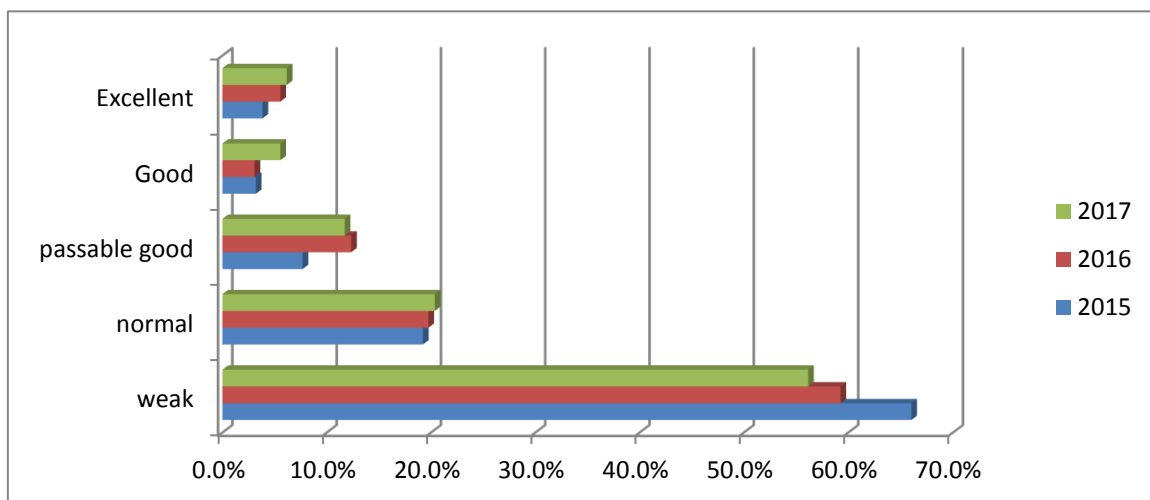
Figure 1- The combined results of the number of pages of responsibility reporting in the annual report of the surveyed companies.



(Source: Compiled by the Annual Report of Listed Firms 2015, 2016, 2017)

The content presented in the report is rather sketchy, lack of evidence with data on the environmental impact assessment. Some companies even reported about 30 pages related impact of the company on the environment and society but only disclosed responsibilities to the local communities through the volunteer program, sponsorship and did not disclose about resource management; energy consumption; water consumption; information employee related policies. These companies, we classified as weak. Most of the companies were at weak level, accounted for 66% in 2015, 59% in 2016 and 55% in 2017. Excellent level was 3.8% in 2015, this figure increased to 6% in 2016 and 2017.

Figure 2- Quality evaluation results of responsibility reporting in the annual report of surveyed companies



(Source: Compiled by the Annual Report of Listed Firms 2015, 2016, 2017)

The case study of BMP shows that BMP is the company that has disclosed integrated responsibility information in its annual reports since 2015, before the effective date of Circular No.155/2015/TT-BTC. The report on environmental, social and community impacts is presented in detail, full of evidence and continues to be very well implemented in 2016, 2017.

In Vietnam, a number of companies have been pioneers in making sustainable development reports since there is no legal requirement for mandatory reporting such as Bao Viet Holdings (BVH), Vietnam Dairy Products Joint-Stock Company (VNM), DHG Pharmaceutical Joint Stock Company (DHG), PetroVietnam Drilling and Well Services Corporation (PVD), Hoang Anh Gia Lai Joint Stock Company (HNG), Vietnam Brewery Company Limited (VBL), Vicostone Joint Stock Company (VCS), ... For these companies, the disclosure of environmental responsibility information is sufficiently detailed. In the case of content disclosure, environmental and social responsibility accounts for up to 50% of the sustainable development report (about 60 pages). All reports are publicly available on their website.

The level of environmental and social responsibility disclosure of Vietnamese listed companies is quite different. There are many companies disclosed responsibility information in just one or two brief pages while other companies disclosed in nearly 60 pages with very clear data. With just a few pages to disclose all corporate responsibility information required following to the Circular No.155/2015 is difficult to assess that quality of their annual reports. An annual report is good to make the foundation for conversion to integrated report. With such limited capacity, basically, companies only disclose very general indicators of the regulations, have not many voluntary disclosures. It ensures only minimal compliance without bringing the benefit for both the company and the users

We interviewed some experts and managers about responsibility information disclosure in the annual report. One expert work in a state governing agency said:

“Companies have not really paid much attention to social and environmental responsibility disclosure in both the mandatory and voluntary because the managers are not aware of the benefits of disclosure. On the other hand, activities related to environmental protection, human resource training, employee health care, local community responsibilities are not properly taken care by companies. Basically, the majority of Vietnamese listed enterprises are medium-sized, corporate culture relating to social responsibility is identified so it is difficult for the information disclosure because they lack data sources for disclosure”.

From the perspective of a manager, one interviewee said:

“The disclosure of our company depends on many factors, however, one main reason I think is that we have to consider the harmony between cost and benefit. We are also interested in releasing information about social and environmental responsibility, reporting sustainability, and even preparing integrated report, but it's too hard for us to do in the current stage and conditions. I think that in the future we will have to aim for all that but to do it we have to prepare a lot of other things”

Following to Nguyen (2015), the trade-off between costs and benefits related to corporate information disclosure has been discussed in various other theories which include legitimacy theory, stakeholder theory, political economic theory, agency theory, signalling theory, and proprietary cost theory. The author highlight that while the sociopolitical based theories (legitimacy theory, stakeholder theory, and political economic theory) explain differences in firms' behaviours towards voluntary disclosure by using social and/or political factors; economic based theories (agency theory, signalling theory, and proprietary cost theory) explain the variations on voluntary disclosure by focusing on the firms' wealth maximisation. Thus, the managers always consider the trade-off between the cost and benefits of disclosure (Nguyen, 2015). We agree with Nguyen and other authors, the tradeoff between costs and benefits is always considered when companies disclose information.

Pham (2011) study of 30 listed companies Vietnam has shown that the high level of awareness of corporate social responsibility is not a factor in ensuring that enterprises fulfill and fulfill their social responsibility reporting obligations, but the perception of Vietnamese consumers and their procurement decisions have an impact on the implementation of social responsibility and disclosure obligations (Duc Hieu Pham, 2011). Pham and Do (2015) investigate the factors affecting the extent of voluntary disclosure by examining the annual reports of 205 listed industrial and manufacturing companies listing; evidence from that study suggests are companies with high foreign ownership have a high level of voluntary disclosure and the company size is an important factor related to the increased level of voluntary disclosure in annual reports of Vietnamese listed companies (D. H. Pham & Do, 2015). Another study by Dang (2018) for 289 listed Vietnamese firms found that there are three factors that influence the level of disclosure of corporate social responsibility information, sustainable development in the annual report of the enterprises are profitability, business size and independent auditing (Dang et al., 2018). However, this study does not have access to factors influencing the disclosure of corporate responsibility on the annual reports of Vietnamese listed companies.

5. Conclusions and policy implications

5.1. Conclusions

Integrated report is a new trend in many countries, the benefits that integrated report brings to business is undeniable, especially in today's context as businesses are looking to sustainable development. Integrated report and sustainable development is still new concepts for the Vietnamese companies. Investors face many difficulties in finding information, evaluating and communicating with businesses on issues related to environmental, social and governance which is a initiative for promoting and implementing sustainable development of business. There are a number of issues that Vietnamese public companies need to accomplish in order to obtain an annual report in the true meaning of a complete, formal document that provides investors with an honest view of the status as well as the future of the business.

Vietnamese listed companies implement different regulations and as a result, the quality of annual reports among public companies is very different. It is easy to see that companies in the financial and banking sectors such as Bao Viet, Vietcombank,... are highly internationalized and understand the value of the annual report so they make annual reports relatively professionally. Meanwhile, about 60% of public companies still do not pay much attention to the annual report due to the annual report is rather poor. There are many issues that public companies need to accomplish in order to obtain an annual report that is, in fact, a complete and official document on the state of affairs and the future of them.

The quality of annual reports, a critical platform report for an integrated report, are still many problems need to be improved, especially the disclosure of social and environmental responsibility. The quality of corporate responsibility disclosure after the issuance of the Circular No.155/2015 has changed, however, the change is negligible, before the Circular No. 155/2015, the companies has disclosed responsibility information but focus primarily on local community support information. After the effective date of circular No.155/2015, they have disclosed additional information on social and environmental responsibility but the quality of information generally has no significant change.

Companies need to be more aware of their responsibilities in making annual reports as well as better recognition of the benefits that annual reports bring rather than in accordance with legal obligations of the law.

5.2. Policy implications

To address the above limitations, the state management agencies should study the promulgation of legal regulations on annual report, integrated report including regulations on increasing transparency, developing policies addressing environmental, social and economic issues, maintaining an understanding of regulations on performance measurement, reporting, monitoring, testing, and interpretation of information related to impact social, environmental and economic. In addition, it is necessary to strengthen the auditor's monitoring of the disclosure of information by enterprises. This is the factor that Dang (2018) study has shown to affect the level of disclosure of corporate responsibility information.

The state should communicate well the benefits of disclosure of corporate responsibility for sustainable development. To exemplify typical enterprises, adopt preferential policies, encourage enterprises to disclose information fully with good quality. The state needs to penalty for companies disclosing incomplete information and recommendations to consumers and investors, handling sanctions if necessary in case of non-compliance with information disclosure. Issuing regulations of responsibility information disclosure need to combined with the obvious payoff when disclosure meet or not meet specified requirements.

Continuing to maintain and further develop activities of selection the excellent annual reports to select and honor the enterprises to make good information transparency. This has always been a positive activity for businesses to be aware of information transparency, a

measure of market development through enterprise information transparency, governance quality, and information access of shareholders.

Pham (2011) showed that the perception of Vietnamese consumers and their purchasing decisions have an impact on the implementation of corporate social responsibility and corporate responsibility disclosure obligations (Duc Hieu Pham, 2011). Therefore, the state management agencies and media agencies need to disseminate widely about responsibility of enterprises in information disclosure in order to raise consumer awareness, thereby influencing their purchasing decisions to influence enterprises to make them more accountable to the environment and society as well as the release of information related to the environment, society.

Raising awareness of the business about improving the quality of annual reports to towards to implement integrated report in the future, such as: organizing more conferences relating to information disclosure; disclosing data about enterprises operating effectively, sustainable development which is contributed from the transparency and quality of information disclosure.

Limitations of this study is only review a content related to general social responsibility disclosure of an annual report and does not cover all contents of annual reports. Evaluations of the quality of disclosures base on the subjective view of readers, who see annual report, that does not base on clear measurement criteria.

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Factors Influencing the Choices of Accounting Policies in Enterprises Listed on the Hanoi Stock Exchange (HNX)

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Abstract

Analyzing factors influencing the choices of accounting policies in listed companies on the HNX. The study aimed at investigating factors affecting the selection of accounting policies based on the quantitative research, using Ordinary Least Squares regression method (OLS). OLS is the estimate on the data set obtained by the objects over time, so it considers that all coefficients are unchanged between different objects and do not change over time (Gujarati, 2004). To select the research model, Stepwise test was applied. Research data was collected from StockPlus with data of 100 companies from 2012 to 2016.

The research results are consistent with many previous studies. The author finds that there are nine factors influencing the selection of accounting policies in firms listed on the HNX. This result is consistent with Waweru, Ponsian Prot Ntui, Mangena (2011), Masahiro Enomoto (2015).... The difference is that auditors have a significant influence on the selection of accounting policies in enterprises.

Keywords: *Accounting policies, Auditors, Income, Financial distress, Risk*

1. Introduction

According to financial accounting theory, companies choose their accounting methods in order to provide a true and fair view on their activities. These choices are captured in the accounting policies of the entities and are the foundation of drawing up and interpreting their financial statements such as financial position, performance and cash-flows of the period. Therefore, companies make deliberated choices on alternative accounting methods, often labeled in the literature as “professional judgment”.

The purpose of this study is to investigate the factors influencing the selection of accounting policies of managers of listed companies on the HNX. Previous studies proved that managers are able to choose accounting policies to increase or decrease the reported income (Beattie, 1994; Astami and Tower, 2006; Bowen and Shores, 1995).

Previous studies tend to focus on firms in developed countries (Inoue and Thomas, 1996; Cullinan, 1999; Lin and Peasnell, 2000) and countries in the Asia-Pacific region (Rahman and Scapens, 1988; Tawfik, 2006; Astami and Tower, 2009).

Research results of developed countries and the Asia-Pacific region may not be relevant to Vietnam due to certain differences in the environment. The results of this study are important for managers of listed companies in the HNX in determining the flexibility of accounting practices as well as explanations needed to support users of financial statements. In addition, this study is also critical for investors in developing countries to analyze financial statements when making investment decisions.

2. Literature Review/ Theoretical Framework and Methods

2.1. Literature Review and related Theoretical Background

Literature review shows that researchers in Vietnam as well as in the world have studied on the factors affecting the selection of accounting policies of enterprises from different perspectives. These studies have drawn the important role of factors affecting the choice of accounting policies to increase or decrease income of enterprises.

2.1.1. Company size:

Watts and Zimmerman (1986) stated that the political costs of big companies are always higher than that of small companies. Managers of large companies may prefer the accounting methods that delay the reporting of income to reduce political costs (Missonier, 2004). This is consistent with study of Waweru, Ponsian Prot Ntui, Mangena (2012) in Tanzanian; study of Shaheen (2012) in Kuwait; studies of Cotter and Gupta (1995); Inoue and Thomas (1996); Hagerman and Zmijewski (1978); Kenneth and Michael (1991).

However, many scientists like Beatty et al. (1994); Missioner (2004); Tawfik (2006); Ashtami and Tower (2006) found no correlation between enterprise size and selection of accounting policies to increase or decrease income in Switzerland, Saudi Arabia and the Asia Pacific region.

2.1.2. Financial leverage

Kenneth and Michael (1991); Cotter (1999) and Gupta (1995); Inoue and Thomas (1996); proved that the degree of financial leverage has a positive effect on the choices of accounting policies to increase income. Easton et al. (1993); Bowen and Shores (1995) explain that to ensure the creditworthiness of loans or to improve the financial flexibility of companies, managers try to use accounting methods to increase income, allowing them to publish favorable financial statements. This result is consistent with research findings of Watts and Zimmerman (1986); Cullinan and Knoblett (1994); Beatty and Weber (2003); Shaheen (2012); Waweru, Ponsian Prot Ntui, Mangena (2012); Masahiro Enomoto (2015)

However, Missioner (2004) pointed out that financial leverage have no impact on the choices of accounting policies to increase income in the context of Sweden. This result is consistent with finding of Tawfik's study (2006) in Saudi Arabia; the study of Aitken and Loftus (2009) in Australia.

2.1.3. Labour force intensity

Liberty and Zimmerman (1986); Elias (1990) provided that demands for wages or salaries are often linked to the profitability of the firm. Particularly, the higher the skills of workers, the higher the profitability of companies, whereby, the workers are more likely to claim for benefits. In addition, to claim for benefits of workers, trade unions representing workers negotiate on wages and related factors. This leads to a significant reduction in shareholder's wealth. So managers will choose policies to delay reporting of income (Cullinan and Knoblett, 1994). This study is in accordance with study of Waweru, Ponsian Prot Ntui and Mangena (2012).

2.1.4. Ownership dilution

The degree of ownership dilution is expressed in the proportion of voting rights held by the major shareholders over the total number of shareholders of a company. When the degree of ownership dilution is high, managers will choose accounting policies to increase income to increase their remuneration, create trust in shareholders, and establish reputation for professional competence (Missonier, 2004). This result is consistent with research finding of Ashtami and Tower (2006) in the Asia-Pacific region and finding of Waweru, Ponsian Prot Ntui, Mangena (2012).

2.1.5. Internal financing

Inoue and Thomas (1996) pointed out that the capability of internal financing of a company is an important factor influencing the choices of accounting methods by Japanese managers. Waweru et al. (2009) argued that retained earnings is one of the important sources of capital. But in the emerging markets, shareholders may prefer the distribution of dividends rather than increase capital. Therefore, in order to reduce negotiating costs, companies that rely more on internal capital will choose accounting policies to decrease income to use retained earnings to invest in new projects. Waweru, Ponsian Prot Ntui, Mangena (2012) also found that internal financing was one of the four most important factors influencing the choices of accounting policies to reduce income in Tanzanian enterprises.

2.1.6. Proportion of non-executive directors

Non-executive directors are independent members who do not work in organizations. Beasley (1996); Khanchel (2007); Che Haat et al. (2008) argued that the higher the proportion of non-executive directors, the greater the efficiency of the board of directors as the non-executive directors have the most crucial role of supervising managers. This finding is also consistent with studies of Shapiro (2006); Waweru, Ponsian Prot Ntui, Mangena (2012).

2.1.7. Risk.

Hagerman and Zmijewski (1978) examined the US context and proved that market risk is closely related to the choices of accounting policies to increase income. The research

showed that the expected return on capital is positively related to systemic risk, thereby, companies with higher systemic risk may have higher accounting income. This research result is also consistent with finding of Beatty et al. (1994)

2.1.8. Incentive plans

Watts and Zimmerman (1978); Cotter (1999) and Gupta (1995) stated that managers have an incentive to use accounting policies to increase accounting income if part of their income derived from the incentive plan.

Nguyen Thi Phuong Hong, Nguyen Thi Kim Oanh (2014) found that the incentive policies for managers have no impact on the selection of accounting policies in small and medium enterprises in Vietnam.

2.1.9. Financial distress

The study of Schwartz (1982) examined changes in accounting policies of 163 enterprises considered to be in a financial distress and found that companies in financial distress actively change their accounting policies to increase income. Suda et al. (2007); Masahiro Enomoto (2015) investigating firms on the verge of bankruptcy and major financial crises in Japan showed that companies choose accounting policies to increase income to improve their financial position.

2.1.10. Management turnover

Strong and Meyer (1987); Elliot and Shaw (1988); Beatty and Weber (2003); Yamaguchi (2013) stated that new managers will use accounting policies to reduce income if actual income are much lower than anticipated, in the first financial year after their appointment.

On the contrary, Shuto (2010) and Masahiro Enomoto (2015) found that new appointed managers tend to use accounting policies to increase income to establish their images.

2.1.11. Bank ownership ratio

Okabe (1994) focused on the relationship between changes in accounting policies and the ownership structure of Japanese companies and showed that companies are more likely to change their accounting policies to reduce income if banks have high management power or high ownership in the companies. It is consistent with research results of Aoki and Patrick (1994); Hamamoto (2001).

Masahiro Enomoto (2015) did not fully agree with the above statement. His research stated that a high proportion of bank ownership will lead to many changes in accounting policies to increase or decrease income as banks are both shareholders and creditors.

2.1.12. Management ownership ratio

Jensen and Meckling (1976) supposed that when there is a separation of ownership and control, to maximize their benefits, managers will select measures based on self-interests such as reducing income to reduce the amount of dividends paid and avoid disadvantages during negotiation. This study is consistent with studies of Okabe (1994); Warfield et al. (1995) who provided that managers do not maximize corporate value, thereby, the ownership ratio of managers will encourage managers to choose accounting policies to reduce income.

Tawfik (2006) investigated variables affecting the choices of accounting policies in Saudi Arabia. The study showed strong evidence to support that the selection of accounting in Saudi Arabia is not affected by the ownership ratio of managers.

2.1.13. Auditors

DeAngelo (1981) supposed that larger audit firms with have higher audit quality, so companies audited by large audit firms are less likely to change their accounting policies regardless whether these changes is to increase or decrease income.

Yazawa (2010); Takeda and Muramiya (2013) provided that when changing accounting policies to reduce income can improve the financial health of a company, auditors may pay less attention on this and focus more on changes that increase income.

The research result of Masahiro Enomoto (2015) is similar to those of previous scientists. The author found that large audit firms are effective in restraining changes in accounting policies that increase income.

2.1.14. Profit direction

Shaheen (2012) showed that there is a positive relationship between the profitability of the business and the choices of accounting policies. It means that the higher the profitability ratios, the more likely the managers will choose accounting policies to increase income.

Nguyen Thi Phuong Hong, Nguyen Thi Kim Oanh (2014) also found that the profitability trend has a positive impact on the choices of accounting policies to increase income in small and medium-sized enterprises in Vietnam.

2.1.15. The governmental equity

Shaheen (2012) supposed that state-funded enterprises often try to avoid political costs to avoid government interference. As state-funded enterprises often enjoy many incentives, when the financial statements show that companies have income, the government will reduce or strictly control corporate incentives.

2.1.16. Capital intensity

Hagerman and Zmijewski (1978) found that enterprises with high levels of capital intensity have many advantages in business, thus creating a high profitability from their business activities. Therefore, in order to avoid political costs, corporate managers will adopt accounting policies to reduce income accounting policies. This result is similar to the study of Shaheen (2012)

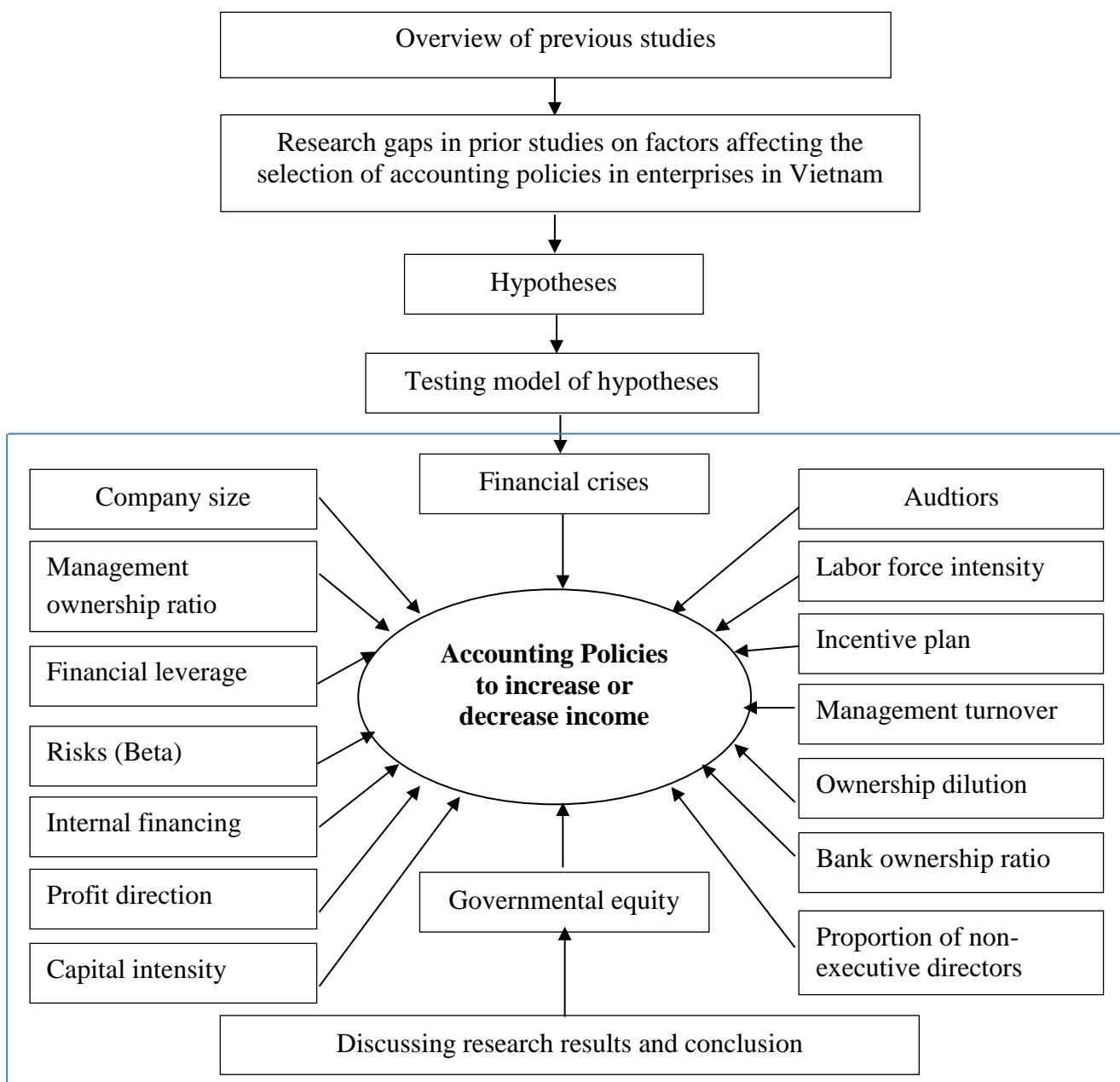
Based on the review of prior studies in Vietnam and in the world, this paper have found 16 factors affecting the selection of accounting policies and accounting estimates in enterprises but some factors are similar, some are different. With the same factor, the extent of impact on the choices of accounting policies may be different in countries. It can be explained by differences in research methods (based on secondary data of the financial reports or based on questionnaires), differences in company size (large or small and medium size) or differences in economic and political conditions in each country. Therefore, it is critical to examine if these factors are relevant to the application of accounting policies in Vietnam as the market economy in Vietnam has many differences compared to countries of previous studies.

2.2. Theoretical Framework

Based on the overview of prior research on the factors affecting the choices of accounting policies, research gaps were identified and hypotheses were developed to predict the factors influencing the selection of accounting policies. This was a quantitative study, using Ordinary Least Squares regression method (OLS). To select the research model, Stepwise test was applied. Based on the obtained results after analyzing, the author discussed the results and provided recommendations and suggestions to subjects such as business executives, investors and the state agencies on the ability to use the accounting information on the financial statements for the selection of accounting policies to help them make business decisions, investment decisions.

The conceptual framework is displayed as follows:

Figure 1.1: Conceptual framework



(Source: The author)

2.3. Quantitative Research Methods

Hypotheses

2.3.1. Company size

In developing countries like Vietnam, large companies are considered as exploiting the countries' resources and are likely to be strictly controlled, thereby, reporting of substantial income may make companies suffer significant political consequences. However, in Vietnam and most other countries in the Asia-Pacific, large companies are politically connected (Mangena et al. 2010). It means that in the politically connected companies, political costs associated with reporting huge income may not be an issue because managers are protected by politicians who have influences on those they are connected to. Moreover, since the governments of developing countries like Vietnam are encouraging companies to participate in economic development, state intervention may be unrealistic. Therefore, the first hypothesis is proposed as follows:

H1: *The larger the company size, the more likely it is that managers will choose accounting policies to reduce reported income.*

2.3.2. Financial leverage

In the context of Vietnam, companies often rely on bond holders and banks to secure their finances (DSE Handbook, 2008). Due to the dependence on debt, managers have incentives to choose accounting policies to increase reported income to ensure that the companies comply with debt obligations imposed by bond holders and banks as well as avoiding renegotiation costs (Inoue and Thomas, 1996; Beatty and Weber, 2003). Thus, the second hypothesis is proposed as follows:

H2: Firms with high debt to equity ratios (financial leverage), managers are more likely to select income-increasing accounting procedures.

2.3.3. Labour force intensity

Several previous studies examining the impact of labour force intensity on making accounting decisions considered the level of unionization as a good indicator of employees' power of negotiation (Cullinan and Knoblett, 1994); Liberty and Zimmerman, 1986). This information may be critical to Vietnamese enterprises. Therefore, the third hypothesis is proposed as follows:

H3: The higher the level of labour force intensity, the more likely it is that managers will select accounting policies to reduce reported income.

2.3.4. Ownership dilution

Managers of companies with a high ownership dilution may implement their power, especially, in publishing information on its performance (Hall, 1993). Therefore, it is more likely that managers will choose accounting methods to increase income to increase their salaries. The fourth hypothesis is proposed as follows:

H4: the higher the level of ownership dilution, the more likely it is that managers will select accounting policies to increase reported income.

2.3.5. Internal financing

Waweru et al. (2009) provided that in emerging markets like Vietnam, shareholders may prefer dividends to capital gains. Failure of managers to pay dividends may send the wrong information signal to the shareholders. In order to reduce asymmetric information costs, companies relying more on internal financing (retained earnings) are more likely to choose accounting methods to reduce income in order to reduce the amount of dividends allowing them to invest the retained earnings in new projects. Thus, the fifth hypothesis is proposed as follows:

H5: The higher the level of internal financing, the more likely it is that managers will choose accounting policies to reduce reported income

2.3.6. Proportion of non-executive directors

Shapiro (2006) argued that the role of the board is to protect shareholders' interests, the monitoring activities of non-executive directors should curtail managers' self-value maximising actions. Therefore, the sixth hypothesis is proposed as follows:

H6: the higher the proportion of non-executive directors, the more likely that managers will choose accounting policies to reduce reported income

2.3.7. Market Risk

In the equilibrium, the expected return on capital is positively related to systemic risk. Therefore, the higher the systematic risk, the higher the accounting income. Thus, the seventh hypothesis is proposed as follows:

H7: the higher the market risk of enterprises, the more likely it is that managers will choose accounting policies to increase reported income.

2.3.8. Incentive plans

If a management incentive plan is related to accounting income, managers have incentives to use accounting principles to increase accounting profit as part of their income is derived from an incentive plan. Thus, the next hypothesis is displayed as follows:

H8: If enterprises have incentive plans, managers are more likely to choose accounting policies to increase reported income.

2.3.9. Financial Distress

According to Schwartz (1982) and Lilien et al. (1988), The higher the level of financial distress a company faces, the more likely it is that companies will change their accounting policies to increase income. Hence, the hypothesis is proposed as follows:

H9: The higher the level of financial distress of a company, the more likely it is that managers will choose accounting policies to increase reported income

2.3.10. Management Turnover

Shuto (2010) supposed that new appointed managers will select accounting policies to increase income to establish their images. Thus, the hypothesis is displayed as follows:

H10: New appointed managers are more likely to select accounting policies to increase reported income.

2.3.11. Bank Ownership Ratio

Okabe (1994) based on the perspective of ownership, stated that income will create disadvantages when negotiating which makes to banks, as owners, seek to prevent managers from adopting accounting policies that can increase income. Thus, the hypothesis is proposed as follows:

H11: The higher the bank ownership ratio, the more likely it is that managers will select accounting policies to reduce reported income.

2.3.12. Management Ownership Ratio

Okabe (1994) found that a high management ownership ratio will make managers avoid accounting policies to increase income in order to avoid disadvantageous position when negotiating due to increase in income. Thus, the hypothesis is displayed as follows:

H12: The higher the management ownership ratio, the more likely it is that managers will select accounting policies to reduce reported income.

2.3.13. Auditors

Becker et al. (1998); Francis et al. (1999) showed that companies audited by the big audit firms Big N have lower amount of accruals than those audited by small audit firms. This result is in line with the expectation that companies will not choose accounting policies to increase income. Therefore, the hypothesis is proposed as follows:

H13: If companies are audited by the big audit firms, managers are more likely to select accounting policies to reduce reported income.

2.3.14. Profit direction

H14: Enterprises with high net profit to revenue ratio are more likely to choose the accounting policies to increase income

This hypothesis can be tested by the relationship between the profitability ratio of a firm and the choices of accounting polices. Shaheen (2012) provided that there is a positive relationship between the profitability of an enterprise and the choices of accounting policies to increase profits of enterprises.

2.3.15. Governmental Equity

Shaheen (2012), found that enterprises using governmental equity often try to avoid political costs to avoid government interference. It means that if a company's financial

statements report high profits, the government will cut or strictly control incentives of enterprises. Thus, the next hypothesis is proposed as follows:

H15: Enterprises with high governmental equity are more likely to select accounting policies to reduce reported income.

2.3.16. Capital intensity

Mohamed Ahmed Shaheen (2012) provided that enterprises with high levels of capital intensity have many advantages in the business, thus creating a high profitability from their business activities. Therefore, in order to avoid political costs, corporate managers will adopt accounting policies to reduce profits.

H16: Companies with high capital intensity are more likely to select accounting policies to reduce reported income.

Research data

The data used in this study was derived from StoxPlus Corporation, a provider of financial database. This is a pioneer entity in Vietnam operating under the model Authorised Data Vendor of the HNX. StoxPlus buys data of transactions and information of stock exchange markets and standardize data, calculate and make necessary adjustments to data to serve information needs of the market.

To ensure the results of the study, the author used data from 100 listed non-financial companies listed on the HNX during the period from 2012 to 2016 (5 years with 100 companies and a total of 500 observations). The author selected these 100 companies because they had large scales, with the same fiscal year ending of 31/12 and have influence on the entire the HNX.

Research method

The author used descriptive statistics to analyze the factors affecting the choices of accounting policies in companies listed on the HNX.

The author used the correlation coefficient (r) to test the hypotheses. To analyze the factors influencing the selection of accounting policies in enterprises listed on the HNX, the author used multivariate regression analysis with the following formula.

$$Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 \dots + \beta_n * X_n + \varepsilon$$

In which:

Y: Dependent variables

$X_1, X_2 \dots X_n$: Independents variables

ε : error (the difference between actual value and predicted value)

“To select appropriate variables to be included in the regression analysis, the author used stepwise regression analysis in SPSS software.”

After selecting variables to be included in the regression analysis, the author used the F-test to assess the appropriateness of the linear regression model; used t-test to evaluate the significance of regression coefficients of independent variables and used the variance inflation factor - VIF to identify collinearity among independent variables. There is collinearity phenomena among independent variables the the value of VIF is greater than 10. Accordingly, the regression model selected for analysis has the highest adjusted coefficient of determination and lowest value of the Akaike Information Criterionn (AIC).

Research model

Based on the development of hypotheses, the author developed the Ordinary Least Squares regression model (OLS) as follows:

$$\%IIAP = \alpha_0 + \alpha_1 FL + \alpha_2 CS + \alpha_3 LFI + \alpha_4 OD + \alpha_5 IF + \alpha_6 PNED + \alpha_7 BETA + \alpha_8 IP + \alpha_9 FD + \alpha_{10} MT + \alpha_{11} BOR + \alpha_{12} MOR + \alpha_{13} AU + \alpha_{14} PD + \alpha_{15} GE + \alpha_{16} CI + \varepsilon$$

Dependent and independent variables include:

Group 1: independent variables:

CS: Company size is measured by the revenue collected from the financial statements at the end of the financial year.

FL: Leverage ratio is measured by the ratio of total long-term debt to with total book value of equity, both collected at the end of financial year.

LFI: Labour force intensity is measured by the ratio of total labour charges to total annual turnover of the company

OD: Ownership dilution is measured by the number of shareholders with shareholdings of 5% or more.

IF: Internal financing is measured by the percentage of appropriated retained earnings to the the net assets

PNED: The proportion of non-executive directors is measured by percentage of non-executive directors in the board.

BETA: the coefficient of risk provided by Stoxplus

IP: The incentive plan is determined by announcement of the company's incentive plan on the annual financial statements. Label 1 if the company has an incentive plan; label 0 if the company does not have an incentive plan.

FD: the level of financial distress is determined by the following formula of ALTMAN:

$$ALTMAN = 0.12X_1 + 0.14X_2 + 0.33X_3 + 0.006X_4 + 0.999X_5; \text{ in which:}$$

$$X_1 = \frac{\text{Total current assets}}{\text{Total current assets}} ; X_2 = \frac{\text{Return earnings}}{\text{Return earnings}} ; X_3 = \frac{\text{Profits before taxes}}{\text{Profits before taxes}}$$

Total assets

Total assets

Total assets

$$X_4 = \frac{\text{Owner's equity}}{\text{Total liabilities}} ; X_5 = \frac{\text{Revenue}}{\text{Total assets}}$$

MT: Management turnover equals 1 if there is management turnover in the period, equals 0 if there is no management turnover in the period.

BOR: Bank ownership ratio is determined by percentage of shares owned by banks

MOR: Management ownership ratio is determined by the percentage of shares owned by managers.

AU: Auditors is 1 if the auditors work at reputable audit firms, and 0 if auditors work at small firms. According to the Vietnam Association of Certified Public Accountants (VACPA), the following 18 companies are listed as reputable audit firms: EY, KPMG, Deloitte Vietnam, PWC, AASC, A&C, DTL, AISC, Nexia ACPA, GTV, TL-TDK, Gia Cat, VAE, CPA Hanoi, AVA, AAC, AASCS, AFC.

PD: Profit direction is determined by the ratio of profit over total revenue

GE: the governmental equity is measured by the ratio of governmental equity to total owner's equity.

CI: Capital intensity is measured by the ratio of total fixed assets to total assets.

Dependent variables:

% IIAP: the percentage of income-increasing accounting procedures (income-increasing accounting policies to total choices of accounting policies). Selection of accounting policies is displayed in table 1

Table 1: Choices of accounting policies affecting profit strategy

Accounting policies	Increase income	Decrease income
Depreciation methods	Straight line	Diminishing value method
Inventory-costing methods	Fist in – first out	Others
Provision for obsolete inventory	Make no provision	Make provision
Provision for bad debts	Make no provision	Make provision
Provision for devaluation of financial investment	Make no provision	Make provision

(Source: Kris Rowland Martin, 2002)

3. Results and Discussion

3.1. Descriptive statistics

Table 2: Descriptive statistics of dependent and independent variables:

Variable	Mean	Std. Error of Mean	Median	Std. Deviation	Minimum	Maximum
PERCENTAGE OF INCOME-INCREASING ACCOUNTING PROCEDURES	,6141	,01611	,5000	,23120	,17	1,00
COMPANY SIZE	2,535458	3,002256	11,318355	43,506820	0,000000	31,516161
FINANCIAL ANALYSIS	1,50476	,115203	1,00000	1,669449	0,000	11,000
BETA	,732474	,0522527	,600000	,7202540	0,0000	3,5300
INTERNAL FINANCING	19,4928	1,2590	15,0000	18,1137	0,0000	108,0000
CAPITAL INTENSITY	,2686112	,01587850	,2163400	,23010139	0,00000	,89467
LABOUR FORCE INTENSITY	,1015971	,01796381	,0450900	,25720263	,00398	3,08815
OWNERSHIP DILUTION	2,665072	,1119222	2,000000	1,6180399	0,0000	9,0000
PROPORTION OF NON-EXECUTIVE DIRECTORS	,038028	,0055164	,002350	,0795594	0,0000	,5946
<i>PROFIT DIRECTION</i>	,0962624	,04224291	,1012650	,61215797	-7,99570	1,00114
MANAGEMENT TURNOVER	,26	,030	0,00	,439	0	1
BANK OWNERSHIP RATIO	,0211411	,00549533	0,0000000	,07963493	0,00000	,78470
MANAGEMENT OWNERSHIP RATIO	,1556964	,01480776	,0363500	,21458485	,00010	,88150

(Source: The Author)

Table 2 shows that the income-increasing accounting procedures accounting for 61.41% indicates that companies listed on the HNX have more income-increasing accounting procedures than income-reducing accounting procedures. This is consistent with positive and normative accounting theories which argue that managers choose accounting policies to maximize their benefits. Thus, it is considered a reflection of weak management and opportunism in companies. On the other hand, the percentage of non-executive directors is low at 3.039%, indicating that non-executive directors may not have enough business knowledge of the companies or they are not enough to monitor and manage business operations effectively.

According to the Credit Department of the Central Bank, Vietnamese enterprises rely heavily on debt financing. **The leverage with mean of 1.70** indicates that the amount of debt is 1.7 times the amount of shares.

The value of beta of 71.49% (less than 100%) proves that in this period, Vietnamese enterprises are under high business risk, which can be derived from the 2008 global economic crisis, hence, enterprises in Vietnam faced difficulties in expanding the market and selling products.

“Internal financing accounted for 17.77% of total net assets, indicating that in Vietnam a very small amount of profits is used to pay dividends. A typical evidence is Cafef.vn, and a series of companies with large profits but not paying dividends such as Binh Thuan Mineral (**KSA**), Construction Joint Stock Company No 5. (**SC5**), PFV Investment & Trading Joint Stock Company, Vietinbank Securities (VietinbankSC).”

The capital intensity of 31% shows that fixed assets accounted for 31% of the total assets in the enterprises. The capital intensity of industries at the reasonable level include: Petroleum Exploration and Oil Production: 90%; Metallurgical Industry: 70%; Trade: 50%; Food processing technology: 10% - 30%. Therefore, the average level of capital intensity of enterprises of 31% is quite low, indicating that level of fixed assets in enterprises is not high.

The labour force intensity of 8.46% means that labor costs accounted for 8.46% of revenue. In general, large annual revenue indicates that businesses pay a large amount of salaries to employees, which implies a significant role workforce in the enterprises.

The bank ownership ratio is low at 2.53%. This suggests that banks are not playing a significant role in running Vietnamese businesses. In Vietnam, banks often play the role of lenders, with little role of investors or capital contributors.

3.2. Regression analysis and discussion

Table 3: Regression results

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig,	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
9 (Constant)	.709	.020		40.192	.000		
MANAGEMENT TURNOVER	.071	.015	.142	4.653	.000	.179	5.578
MANAGEMENT OWNERSHIP RATIO	-.265	.031	-.185	-8.628	.000	.363	2.755
RENEVUE	-.070	.000	-.202	-14.189	.000	.824	1.213
AUDITORS	-.177	.015	-.341	-11.508	.000	.197	5.087
FINANCIAL DISTRESS	.029	.005	.145	5.857	.000	.276	3.620
BETA	-.039	.008	-.115	-4.762	.000	.280	3.575
CAPITAL INTENSITY	-.048	.015	-.048	-3.160	.002	.703	1.422
FINANCIAL LEVERAGE	.006	.002	.081	3.812	.000	.354	2.823
BANK OWNERSHIP RATIO	-.131	.052	-.062	-2.545	.011	.281	3.562

Dependent variable: % income-increasing procedures
(Adjusted R - square): 0.842
Durbin - Watson: 1.475
Akaike (AIC): 0.00708

(Source: The Author)

The model of analyzing the factors influencing income-increasing accounting policies is as follows:

$$\% \text{ IAP} = 0,709 + 0.142\text{MT} - 0.185\text{MOR} - 0.202\text{CS} - 0.341\text{AU} + 0.145\text{FD} - 0.115\text{Beta} - 0.048\text{CI} + 0.081\text{FL} + 0.062\text{BOR}$$

Table 3 shows that the adjusted R² of the model is 0.842, which means that the model explains 84.2% of the factors influencing the income-increasing accounting procedures.

Research shows that leverage is a factor explaining the choice of accounting policies, so the hypothesis H2 is supported. This is not consistent with studies of Aitken and Lotus (2009); Missonier (2004); Tawfik (2006). However, it is supported by Astami and Tower (2006).

The higher the level of labour force intensity, the more likely that managers will select accounting policies to increase income, hypothesis H3 is supported. This research is consistent with studies of Liberty and Zimmerman (1986); Elias (1990); Cullian and Knoblett (1994);

The greater the business risk, managers are more likely to choose the income-reducing accounting policies, the hypothesis H7 is supported. This study is consistent with study of R.L.Hugerun and M.E. Zmijewski (1978).

The higher the level of financial distress, the more likely it is that managers will choose income-increasing accounting procedures, hypothesis H9 is supported. It is consistent with studies of Schwartz (1982) and Lillien et al.(1988); Sude et al. (2007); Masahiro Rnomoto (2015).

The new appointed managers will choose income-increasing accounting procedures, hypothesis H10 is supported. This is contradict to studies of Beatty and Weber (2003); Strong and Meyer (1987); Elliot and Shaw (1988); Yamaguchi (2013), but consistent with study of Shuto (2010).

The higher the bank ownership ratio, the more likely it is that managers choose income-increasing accounting procedures, hypothesis H11 is supported. This is contradictory studies of Aoki and Patrick (1994); Hamamoto (2001); Okabe (1994);

The higher the management ownership ratio, the more likely it is that managers will choose income-decreasing accounting policies, hypothesis H12 is supported. This research result is consistent with study of Jensen and Meckling (1976); Warfield et al. (1995); Okabe (1994).

In companies audited by big audit firms, managers tend to choose accounting policies to reduce income, hypothesis H13 is supported. This is consistent with DeAngelo (1981) and Nelson et al (2002).

In enterprises with high capital intensity, managers prefer accounting policies to reduce income, hypothesis H16 is supported. This is consistent with study of R.L.Hugerun and M.E.Zmijewski (1978).

4. Conclusions and Policy Implications

This paper aimed at investigating factors affecting selection of accounting policies of managers in 100 companies listed on the HNX. The author examined 16 factors: Company size; Leverage; Labour force intensity; Ownership dilution; Internal financing; Proportion of non-executive directors; Risk; Incentive plans; Financial Distress; Management Turnover; Bank Ownership Ratio; Management Ownership Ratio; Auditors; Profit direction; Governmental Equity; Capital intensity which may impact choices of accounting policies of executives. The results showed that 9 factors influence selecting of accounting policies in which 4 factors are associated with income-increasing accounting policies: management turnover; financial distress; leverage; bank ownership management; 05 factors are associated with income-decreasing accounting policies. Especially, among 9 influential factors, auditors has the most significant impact (Beta of 0.341).

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Accounting Outsourcing for Vietnamese Small and Medium-Sized Enterprises and Its Theoretical Background

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Abstract

Outsourcing has emerged in the 1980s and has become a popular and effective management tool not only for large companies, but also for small and medium-sized enterprises (SMEs) because it could help SMEs focus on its core competencies and confront their competitors within their limited resources. In reality, SMEs in Vietnam, they are a core economic component, accounted for more than ninety percent of the total number of enterprises in Vietnam but face a number of resource constraints, typically is constraint in accounting functions. This study would explore the advantages and disadvantages of accounting outsourcing activities of SMEs in Vietnam based on two background theories: Transaction Cost Theory (TCE) and Resource – based View (RBV). The study supports the tendency of accounting outsourcing for SMEs in Vietnam when they want to focus on promoting their internal competencies but lack of internal resources. Future research for deeper understanding of accounting outsourcing are also discussed in this paper.

Keywords: *Transaction cost economics, Resource-based view, Accounting, Outsourcing, Vietnam*

JEL: *F32, G41*

1. Outsourcing accounting for SMEs in Vietnam

Outsourcing accounting is when a business hires an outsider to perform its accounting functions that (may) traditionally were performed in-house by the company's own staffs, it is considered as a solution for cost-cutting method for many companies.

Small and medium-sized enterprises (SMEs) play a very important role in the economy of any country, including developed or developing ones. This is also an important economic component that creates jobs for society and contributes significantly to the income of a national economy. It also contribute to mobilization of social resources for development investment, poverty reduction (OECD, 2009, IFAC, 2010). But it is quite difficult for SMEs in recruiting high quality accountants due to the lack of their internal resources in many aspects (training opportunity for employees, low financial budget, time pressure...).

In order to overcome the constraints on resources, outsourcing is a strategic solution for SMEs. According to a survey of 600 enterprises in 1997 by the American Management Association (AMA), the enterprises initially outsourced business – supported functions such as security services, building management, translation services, car rental.... In current time, accounting and finance activities are also outsourced and the market for outsourcing financial services has become increasingly active.

Outsourcing researches have been carried out in large enterprises (Li et al., 2008), and there are also a number of studies that focus on SMEs (Everaert et al., 2010; Kamyabi & Devi, 2011; Shina et al., 2011). In any economy, SMEs are core economic components but also face a number of constraints, especially in the context of resource constraints (Everaert et al., 2010; Kamyabi & Devi, 2011; Shina et al., 2011).

This study selected SMEs in Vietnam as research objective for the following reasons: Firstly, SMEs are the mainstay of the economy, accounting for 97% of the total number of enterprises. Every year, more than half a million new jobs are created; employs up to 51% of social workers and contributes over 40% of GDP (Business Registration Office - MPI, 2012). Secondly, SMEs face a lot of difficulties, especially in limited resources, the pressure of SMEs is much larger than that of large firms (Marriot & Marriot, 2000). Thirdly, long-term outsourcing will be an important strategic tool for SMEs to promote their internal capabilities and external resources.

In Vietnam, the emergence of organizations such as the Vietnam Association of Certified Public Accountants (VAPAP) and the Vietnam Association of Certified Public Accountants (VACPA) in 2012 has proved that Vietnam is also moving towards and concentrating in development of market for audit and accounting services.

Starting from the issue of SMEs in terms of financial resources and human resources, the study found that many SMEs find it difficult to find good people in charge of accounting due to resources constraints. Many managers are unhappy with the quality of their accounting staffs, or if they are satisfied, their accounting employees are likely to find a way to move to bigger or more stable companies when they think they accumulate enough experience.

This paper provided an overview about outsourcing in accounting – auditing services, explore the disadvantages as well as advantages in order to identify useful suggestions for developing the market of auditing and accounting services in Vietnam from both accounting service customers and service providers's view.

2. Advantages and disadvantages for SMEs in accounting outsourcing

Outsourcing becomes a common practice among firms and in fact, many advantages and disadvantages should be considered when a company decide to embark outsourcing accounting functions.

Kamyabi & Devi (2011) identified some main advantages and disadvantages of accounting outsourcing as the following:

Advantages:

- **Access to professional service:** in limited conditions, consulting and accessing professional services from accountants or accounting professional providers could permit business in lowering costs compared to do it internally due to the scale of economies (Jayabalan et al., 2009).

- **Cost reduction:** reducing cost is one frequent reason for accounting outsourcing. It helps business to reduce many types of employment and administrative costs (Everaert et al., 2010)

- **Focus on core competences and innovation:** In operating a business, many types of supporting activities are called non-core activities besides main activities in running business such as accounting, IT, human resource management, and logistics....Many studies provided evidences that outsourcing practices permit company to concentrate and focus on their core activities and do it in a more creative way, shift to innovation (Gilley et al., 2004b)

- **Managing Time Pressure:** In fact, handling time issues especially during peaks accounting periods cause much pressure for SMEs, so that they may outsource with the intention of dealing with their time pressure, use an external accountant to handle accounting affairs (Jayabalan et al, 2009; Gooderham et al., 2004).

Disadvantages

- **Loss of Internal Expertise and Skill:** A key disadvantage of outsourcing practice is that it leads to a loss of opportunity to train and develop internal expertise and skills (Everaert et al., 2010). In addition, company may become extremely reliant on outsiders, some require specific expertise and specific knowledge led internal labor can not meet the demand.

- **Loss of Management Control:** When firms outsource their functions to external service providers, they may lose control of the process and the outcome to an external service provider (CIMA, 2008).

- **Doubtful Cost Savings:** It is not cost-saving when SMEs may suffer from low quality output by external service providers who have low knowledge of the activities and the firms. It is also important to consider the transaction costs in dealing contract, monitoring the performance, and connecting with external providers (Everaert et al., 2010). In total, these added charges may cause outsourcing practice being more costly and it may not meet the goal of cost-cutting (Everaert et al., 2010).

Risk taking: Sometimes, advantages may become disadvantages, when you outsource some functions, your employees have no chance to be trained in an in-house training ground, and it can not be a source of competitive advantage in the future (Everaert et al., 2010; CIMA, 2008). Outsourcing, especially outsource finance and accounting functions, it cause the risk of violating the confidentiality of the company

3. Theoretical background for explain outsourcing accounting in business

This overview will explore the underlying theories of research such as TCE or RBV. They are theoretical backgrounds for explaining why a business outsource their functions to outsiders

3.1. Transaction Cost Economics

Transactional Cost Economics (TCE) was first published the article “Nature of the Firms” (Coase, 1937) and the author received the Nobel Prize in Economics in 1991 for this project. Since then, TCE has been enriched by Williamson (1993) and others also continue to grow to this day. TCE is considered the main theory to develop it to this day.

According to TCE, there are costs in using a market. A business could make decision during operating business activities either by self-operated (insourcing) or buy from providers (outsourcing). That decision depends largely on the compared cost between the two options.

TCE perspective suggests that firms are existed and organized in order to minimize transaction costs (Lamminmaki, 2007) and a firm has tendency to seek to balance transaction cost and production costs when it decides to internalize (insource) or externalize (outsource) activities or functions transaction (Jiang et al., 2007).

From a cost-saving perspective, if the cost of producing a product (labor, capital, fixed assets, management...) costs more than buying from the market (the cost of production by the seller + the cost of the transaction), the business should hire the providers from the business outside.

Better to self-produce when

$(\text{Cost of self-production} + \text{Organization costs}) < (\text{Cost of purchased products/services} + \text{Transaction costs})$

Better to buy when

$(\text{Cost of self-production} + \text{Organizational costs}) > (\text{Cost of purchased products / services} + \text{Transaction costs})$

Transaction cost economics (TCE) is important for understanding the effect of different types of costs in the business (Williamson, 1983; Kang et al., 2009). This theory becomes the standard theoretical framework for explaining why some SMEs transfer accounting functions to external accountants, and hiring professional accountants in reducing costs and it can explain how are transaction cost handled? (Carey et al., 2006,

Everaert et al., 2010). TCE is also used to explain the economic efficiency achieved when accountants provide professional services to the firms (Carey et al., 2006).

The biggest purpose of accounting outsourcing is to maximize the cost savings while improving the quality of accounting information. If the outsourcing cost is lower than the cost of retaining the internal staffs, there is no reason for business for not consider outsourcing. Outsourcing is also the tendency that shows the specialization in the doing businesses.

3.2. Resource-based View

Barney (1991) is considered one of the pioneers for Resource-based View. It is widely used and proven in a variety of fields and industries. Basically, RBV posits that a business can gain competitive advantage if it implements value-creating strategies that can't be achieved by its current and potential competitors. In order to implement such strategies, enterprises need to have resources to ensure some basic conditions of the VRIN standards as follows: valuable, rare, can not be completely imitated and no substitution.

RBV has derived from economics and management where we could find the common point of view in implementing a strategy for enhancing competitive advantages, promoting internal strengths, curbing external challenges as well as improve internal weaknesses of enterprises (Wernerfelt, 1984).

According to IFAC (2010) and Report of the Business Registration Office (MPI, 2012), the majority of SMEs entering the economy face many difficulties in competition due to "the lack" in internal resources. Thus, the RBV describes that small firms are more likely to be eliminated than large firms because of resource shortages that make them difficult for sustaining their existence and prospects.

Especially, in emerging and developing economies, they are facing a number of issues such as the quality of human resources, the lack of transparent mechanisms and the lack of knowledge capital (McClvor, 2009; Daou et al., 2013). Many studies using RBV (Gooderham, 2009; Kamyabi and Devi, 2011, Daou et al., 2013) in analyzing the shortage of SMEs. In the time of intense competition, small businesses must be proactive in seeking to reduce costs and create new opportunities by making the most of the support of external resources.

SMEs with limited capabilities but with core competencies need access to external support. RBV assists us in analyzing the capabilities of SMEs to determine whether a particular business function should be outsourced or self-produced (Melvo, 2009). The RBV approach is similar to the "Competency Approach" (Sinha et al., 2012)

RBV supports the analysis of SMEs's resources, thereby creating a link between outsourcing and business performance (McIvor, 2009). RBV is the theoretical basis for SMEs in outsourcing accounting functions and handling financial information of enterprises (Gooderham, 2004). RBV shows that professional accountants will be an important bridge for supporting business (Lowe & Talbot, 2000).

In practice, the reasons of outsourcing can be explained based on both RBV and TCE (Melvor, 2009). RBV helps businesses analyze the organization's ability to connect external

resources with the inherent competitive advantages and business efficiency (Melvor, 2009). While TCE gives us a deep insight into whether we should outsource or perform a particular function (Stratman, 2008).

In a nutshell, if businesses find themselves in lacking internal conditions for supporting some activities, they should consider to outsourced solutions (Melvor, 2009). TCE argues that outsourcing will help SMEs save costs rather than trying to do it themselves in a limitation of capacity both in scale and experience (Gilley et al., 2004b). In the same view, Melvor (2009), Everaert et al. (2010), also stated that "outsourcing is a powerful means of cutting costs, improving performance because we do not have to invest more in equipment or hire more staffs" (Jiang et al., 2006).

4. Discussions and conclusions

In today's knowledge age, companies focus on their core competencies and outsource accounting functions to professionals. Financial service providers and accountants, based on their strengths in management, experience in accounting will help clients reduce their costs effectively. For example, General Anderson signed a contract with Arthur Anderson worth up to \$ 335 billion (in dollars annually) to handle annual transactions and saved 60% of the cost. (Tom, 2001).

This paper has only reviewed some main points related to accounting outsourcing for SMEs in general and for Vietnamese SMEs in particular. For further study, it is necessary to explore the motivations for SMEs to choose outsourced solutions for their accounting works. Theoretical model could be built on the integration of Transaction Cost Theory (TCE), Resource-Based Management (RBV) to understand factors influencing accounting outsourcing decisions.

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**A Research on E-Invoice: Benefits, Challenges and Strategies
to Overcome in Vietnam**

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Abstract

E-invoice is an emerging issue not only over the world but also in Vietnam. Since e-invoice implementation is about to be compulsory in Vietnam for all organizations in 2020, it is necessary to identify the benefits, challenges and strategies to overcome these challenges of adopting e-invoice in Vietnam. The study investigated a number of benefits, such as reducing processing time, decreasing operation cost, improving efficiency of human resource, high confidential and accurate information, optimizing the utility of other IT application. However, there are also internal and external factors that have hindered the implementation of e-invoice. Some suggestions to overcome these obstacles were presented in this paper.

Keywords: *E-invoice, Benefits, Challenges, Strategies*

JEL codes: *M41*

1. Introduction

In the time of industry revolution 4.0, information technology has archived an important milestone in transferring information systems. IT has changed firms' activities in some areas such as automatic processes to meet the requirements of flexibility, quality, cost-saving and effectiveness. The automatic processes in firms include electronic orders, electronic order confirmation and electronic payment procedures (Morrell &

Ezingard,2002). E-invoice, therefore, is introduced to enhancing efficiency of firms' operation since it transmits information automatically in machine-readable form. E-invoice is required in many countries around the world such as the US, UK, Finland, Australia, Spain, etc. since it's benefits are apparently.

In Vietnam, the emergence of e-invoice was apparent since Vietnamese government issued decree no. 51/2010/NĐ-CP which officially referred to the adoption of e-invoice. Therefore, it is an emerging issue which in need of researches. So far, studies about e-invoice in Vietnam have not been carried thoroughly. This paper aims to discover the adoption of e-invoice worldwide and in Vietnam. Additionally, the benefits and challenges of adopting e-invoice in Vietnam are also analyzed and identify strategies to overcome these challenges.

2. Literature review and theoretical framework for e-invoice

Electronic invoicing is defined as the electronic transmission of invoice data in a structure and standard format, allowing the automated processing of the invoice at the buyer site (Penttinen 2008). These invoice data could be issued in Electronic data interchange (EDI), XML format or other internet-based web forms. There are some national and international standards that companies could choose to adopt. This study will briefly draw up the overview of available framework in Vietnam and on worldwide .

2.1. Adoption of e-invoice worldwide

Accredited Standards Committee X12, an American National Standards Institute (ANSI), today known as the ANSI X12 Committee, is the first institution which standardizes EDI process in order to serve across industry groups (automotive, chemical, communication, etc.). For example, utility companies and uniform providers could adopt the ASC X12 810 standard, while telephone companies could use electronic invoice which complies with the ASC X12 811 standard. In 1983 five standards were published by X12. The ANSI X12 committee has subsequently published standards for more than 20 documents including purchase order, remittance advice, invoice, and request for quote. (Hill, Ferguson, 1989).

Electronic data Interchange for Administration, Commerce and Transport (EDIFACT) is the international EDI standard developed under the United Nations. In 1984 the American National Standard Institute (ANSI X12) committee joined with Europe's Trade Data Interchange (TDI) to form the Joint EDI Committee (JEDI) and develop common standard: EDIFACT standard.

The standard defines 15 different types of electronic documents: purchase order, promotion announcement, price change, invoice, etc. The set of rules for formatting a specific electronic document is called as transaction set (Hill, Ferguson, 1989). However, according to United States Patent (2000), these electronic invoices contain the same information as do paper invoices, but the information is electronically transmitted via a network from the Vendor's computer System to a remote computer in a Standardized format.

This means that an automated invoice system will not require manual intervention by the buyer. An true electronic invoice would fully automates the invoice capture and receipt process so the buyer does not need to perform any data entry.

The content of normal electronic invoice consists of basic information, including : Title invoice, Invoice number, Name and address, Invoice date , currency, quantity and type of product, total amount to be paid, the amount of payable or deductible VAT and any discounts or rebates.

The standard also allows organisations to adopt type of format's electronic invoice with compliance or without compliance. For the electronic invoice without compliance, the invoice adhere to local specified guidelines for invoice content , which could be applied for oversea trading.

In 2010, a legislation adopted at European Union level was passed in the form of Directive 2010/45/EU. This document aims to promote the usage of e-invoice by allowing organisations freedom of choice between paper and electronic invoice by removing existing burdens and barriers.

2.2. Adoption of e-invoice in Vietnam

To catch up with development of electronic technology, the latest regulation, Decree No.119/2018/ND-CP, was issued on 12/9/2018 by Vietnamese government about adoption of electronic invoice in Vietnam, which replaces Decree No. 51/2010/ND-CP. Remarkable subjects relate to : format and content of e-invoice, type of business forced to use e-invoice, validity of decree, issue of invoice, etc... In order to improve the understanding new legislation, authors will sum up several outstanding rules.

Firstly, the Deadline's business organisations for application e-invoice will be in 01/11/2020. Moreover, Decree will have validity during this period , from 1/11/2018 to 31/10/2020.

This document also defines the types of e-invoice based on tax purposes that includes: VAT e-invoice, sale e-invoice, and other electronic note.

The point in time of issue e-invoice is the date in which the seller has transferred to the buyer the ownership of goods or completed providing services.

3. Analysis of reality

3.1. Benefits of implementing e-invoice in Vietnam

There are various studies conducted about benefits of e-invoice in business firms over the world. According to the European Commission (2009), e-invoice should be formed in well-known formats such as PDF, XML, EDIFACT, HTML, DOC, XLS, JPED or TXT, therefore it is easy for firms to use and transfer information. In Vietnam, this characteristic of e-invoice reduces time to handle business transactions, such as: processing stages were reduced by 70%, billing cycle was shortened by 90% (Nguyen Thi Thu Trang and Nong Thi Kim Dung, 2018) since e-invoicing eliminated time of manual billing. Any transactions

would be posted directly and automatically into electronic format of invoice which helps saving time for both suppliers and customers by reducing processing period.

Secondly, operating cost is saved by employing e-invoice. One of organizations' purposes in applying e-invoice is reducing administrative cost (Poel. Et.al, 2016). According to a survey of Vietnam General Department of Taxation, the highest cost of self-printed invoice and cost of pre-printed invoice were approximately 2.500 VND/invoice and 2.000 VND/invoice respectively, whereas the cost of adopting e-invoice in EVN was only 292 VND/invoice (VFT, 2018). This reality is a result of reducing cost of generating, printing, sending, preserving and archiving invoices when organizations employ e-invoice instead of paper invoice. This aspect of e-invoice also helps saving environment by reducing carbon footprint when eliminating the existence of paper invoice.

The third benefit of e-invoice is improving efficiency of human resources (Hernandez-Ortega, 2012). As e-invoice saving time of administrative tasks, employees and managers are allowed to devote themselves better to higher value-added and creative activities.

The next benefit that could be referred is the high confidential and accurate aspects of e-invoice. It can be explained as e-invoicing process obtains information in real time automatically, which is hard to be affected, easy to verify and provides information about transactions accurately. There are numerous counterfeit invoices which affect enterprises' prestige in Vietnam. This situation could be reduced since e-invoice is more confidential than paper invoice.

Another benefit of e-invoice is the optimizing of IT application systems in Vietnam. A number of IT applications are enhanced their utilizing by using e-invoice such as e-commercial, e-government, online tax, internet banking, etc.

3.2. Challenges of implementing e-invoice in Vietnam

There are a number of barriers to adopting e-invoice in Vietnamese companies. Factors that affect the implementation of e-invoice can be classified as internal and external factors. Internal factors are those barriers that originated from the company itself, whereas external factors are further hindrance from outsiders. Through interviews of 12 managers of Vietnamese business firms that have not adopted e-invoice yet, internal and external barriers to e-invoice implementation were recognized as follows:

Internal factors:

- **Technical obstacles:** Sufficient IT infrastructure and competences requirements such as new software, system integration and data transitions are necessary condition to fully adopt e-invoice. These obstacles are a burden of small business firms who having outdated or self-developed systems to process e-invoice.

- **Cost of developing e-invoicing system:** most interviewers claimed that it is extra cost to the firm in order to implement e-invoicing systems. Small companies need to acquire appropriate IT infrastructure and software which incur implying and initial costs. The required expense could be high for those whose IT systems have been not sufficient yet.

External factors:

- Customers' reluctance to receive e-invoice: Although the benefits of e-invoice is numerous and apparently, e-invoice adoption would be efficiency only if trading partners are willing and capable to exchange e-invoice back and forth. In fact, a number of customers have been not willing to receive another form of invoice but paper one because they have inadequate knowledge about e-invoice, threatened by the validity, reliability and security of e-invoice.

- Lack of e-invoice implementation providers: it takes less expense and time for organizations to implementing e-invoicing systems via software providers rather than developing the systems themselves. However, there are only 15 firms that provides e-invoice processing software in Vietnam such as some joint-venture companies with VNPT, VDC, etc. (Nguyen Thi Thu Trang, Nong thi Kim Dung, 2018). This number is inadequate for providing services for 561.064 firms (GSO, 2018) in Vietnam.

- Limited instructions from the government: e-invoicing is about to be mandatory for all Vietnamese enterprises in 2020, however, there are only Decree No.119/2018/ND-CP and Decree No. 51/2010/ND-CP which is replaced by Decree 119 instructing organizations to implement e-invoicing system. It is high demand of companies for specific policy instruction in implementation of e-invoice.

4. Recommendations and suggestions

Though e-invoicing systems bring a number of benefits to organizations, there are also obstacles that hinder the implementation of e-invoice. There are some suggestions to promote the adoption of e-invoice in Vietnam as follows:

- Financial and technology assistance: The burden of initial investment cost in e-invoicing systems and IT issues can be reduced if financial and technology assistance are promoted, such as the co-operation between authorities and others developed IT corporations in establishing a standard platform for e-invoicing system. Moreover, any intensive encouragement of government to promote e-invoice would make a huge change in implementation of e-invoice, for example: reduce fees, support the developing of e-invoice service providers, etc.

- Raise public awareness of the reliability, confidence and others benefits of e-invoicing system. Since the reluctance of customers is one of the challenges for firms to adopting e-invoice, it is necessary to keep customers well informed about e-invoice characteristics and benefits. Some suggested actions could be as holding conferences about e-invoice, attaching information about e-invoicing system to paper invoices.

- Build advanced guideline on implementation of e-invoice by the government.

5. Conclusions

The paper investigated the implementation of e-invoice, its benefits and challenges in Vietnam. There were numerous advantages of adopting e-invoice instead of paper invoice, such as reducing processing time, decreasing operation cost, improving efficiency of human resource, high confidential and accurate information, optimizing the utility of other IT application. Nevertheless, existed obstacles such as technical burden, initial cost of applying, the reluctance of customers, lack of service providers and limited legal guidance hinder Vietnamese firms from implementing e-invoice. The study suggested some solutions to overcome these challenges such as: increasing financial and technical assistance, spreading the utility and benefits of e-invoicing system and building specific guideline for adopting e-invoice.

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Perceptions of Corporate Executives in the Adoption of Integrated Reporting in Vietnam

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Abstract

Integrated Reporting (IR) has been widely adopted by companies around the world. Therefore, the purpose of this paper is to assess managers' perceptions towards benefits, challenges and training requirements of organizations to prepare and publish integrated reports in Vietnam. Questionnaires were sent to 300 companies listed on the stock market of Vietnam, however, only 532 answers were received in which 369 responses of 135 listed companies were valid. Respondents included senior executives, finance directors, chief executive officers, chief accountants, accounting managers. The results showed that none of the surveyed companies adopting IR, some companies are considering adopting IR due to its benefits. The study proved that the perception of managers is a decisive factor in the adoption and implementation of IR..

Keywords: *Awareness, Benefits, Cost training, Integrated reporting, IIRC*

JEL: *M4 - Accounting and Auditing*

JEL: *M41 - Accounting*

1. Introduction

Generally, financial statements (FSs) of enterprises provide financial information. These are usually static documents that do not encourage readers to analyse further the situation of the enterprises. In 2008, the global financial crisis was "not a random event" but it was a failure in addressing economic problems (Eccles và Kruzus, 2010). The collapse of the housing bubble had led to bankruptcies of many companies, consequently, stakeholders

believed that corporate executives have been providing dishonest FSs, hiding unsustainable business strategies. Most information in the FSs did not provide information on the development strategies, business performance and business risks, as well as non-financial information (Busco và cộng sự, 2013). As a result, stakeholders lose confidence in traditional reporting and begin to analyse the relationship between financial performance and sustainable development. Investors want more accurate, reliable information which is aligned with the business model, the process of creating corporate value and governance risks. In order to meet the information needs, companies have published both FSs and the sustainable development reports (SDRs). However, the release of these two reports is separate resulting in a problem that there is no connection between these two reports. Although the SDRs are prepared in accordance with international regulations and standards and are considered more transparent, however, the SDRs remain voluntary so information on these reports is collected by the organizations themselves with low reliability. Since there is no consistency among organizations, it is difficult to make comparisons. In addition, the FSs and the SDRs are reports of past information, which does not highlight future activities and relative risks of stakeholders, so it is critical to have a more comprehensive report to fulfil such information needs.

In addition, many countries in the world, especially developing countries, are seriously affected by climate changes, resource scarcity, poverty, inequality, and alarming situation of CO₂ emissions. Significant changes in policies and development strategies of the government and enterprises should separate the economic growth from greenhouse gas emissions to create prerequisites for developing a sustainable economy that meets the needs of both present and future generations. It requires enterprises to pay attention to non-financial information to enable stakeholders to have a comprehensive view of business operations, to assess their ability to create and maintain corporate value in the future. The “green” model should be established to develop a sustainable, low-carbon economy (Zyl, 2013). The International Integrated Reporting Council (IIRC, 2013) provided that reports of enterprises have changed dramatically over time with a growing trend of accountability to stakeholders including accountability to the environment and society in general. Therefore, enterprises, nowadays, must report information in many different areas in addition to their business performance such as: governance, risk management, and sustainability (Owen, 2006; Gray, 2012; Eccles và Saltzman, 2011). Consequently, the appearance of IR in 2010 is inevitable to meet the current information needs of stakeholders.

Vietnam is one of the countries which do not require companies to prepare FSs as requirements of IIRC. The current FSs of companies in Vietnam are prepared in accordance with Vietnamese Accounting Standards, issued from 2001 to 2005 based on IAS. With the rapid change of the market economy, the Vietnamese Accounting Standards have many limitations. Particularly, the quality of accounting information on the FSs and the annual reports of enterprises reveals certain weaknesses and transparency of the FSs is relatively low which affect interests of investors, causing difficulties for the management of the state agencies, reducing confidence of the public. In addition, the FSs of Vietnamese enterprises

disclose accounting information that is not systematic, and is incomplete, with simple and discrete content. Especially, these reports only publish financial information, and non-financial information is presented on a separate report, causing difficulties for readers when connecting financial and non-financial information. Therefore, integrating these two types of reports into a new report is in accordance with the global trend which is to prepare FSs in accordance with the IIRC

2. Literature Review/ Theoretical Framework and Methods

2.1. Literature Review

IR has emerged as a new policy in corporate reporting that reflects “integrated thinking” within an organization. Furthermore, it demonstrates how organizations create and maintain corporate values. Thus, IR can be considered a modern management tool promoting organizational changes towards the more sustainable development (Eccles and Krzus, 2010).

Although IR is a relatively new phenomenon, there is an increasing global interest in this reporting system and the emphasis is placed on the adoption and implementation of IR as a new management tool of enterprises. In fact, there has been much research examining IR as an emerging issue (De Villiers et al., 2014), especially, some studies focused on the results and benefits of IR (Stubbs and Higgins, 2014; Adams, 2015; Jensen and Berg, 2012). Other studies emphasized the reasons why and how organizations adopt IR early (Stubbs and Higgins, 2014). These studies provide an insight into thinking, policy and practice of IR. However, there still exist research gaps regarding how IR can be diffused globally. To solve this problem, Robertson and Samy (2015) used Diffusion of Innovation (DOI) theory to test the perception of executives about IR on certain issues such as providing a comparative advantage over current practices; compatibility with existing processes and management systems; past experiences, needs and its complex perception affecting the application and dissemination of IR. The study of Robertson and Samy (2015) also examined factors affecting the diffusion of IR prior to the introduction of IR of IIRC (2013), which created a gap in knowledge of how IR is diffused in reporting system of different countries. In addition, Nuwan Gunarathne and Samantha Senaratne (2017) also applied the DOI theory to investigate *the perception of senior executives* about the adoption of IR in Sri Lanka. The research results proved that Sri Lanka is in the diffusion phase of IR in which more and more companies are adopting IR. Early adopters remain formalistic due to active diffusion of IR. The study also provided that adopting IR is the development of the SDR. These studies are considered a lesson of learning experience for developing countries adopting IR as a management technology and countries at various stages of diffusion of IR.

One advantage of IR is that non-financial information must be integrated not only in reporting but also in all decision-making processes of an organization. Adams (2015) argued that the adoption of IR improves the decision-making process of organizations as well as risk management processes. Making the best decisions based on the results of IR will encourage managers to acknowledge and appreciate non-financial factors in their decisions (Hampton, 2012). IR also supports organizations in changing business expectations, meeting

the increasing stakeholders' demand of information (Eccles and Krzus, 2010). Lodhia (2015) stated that IR helps to improve the association between departments, reduce individual work as IR requires the collaboration of different functions in an organization. Stubbs and Higgins (2014) provided that the process of preparing IR allows the integration of financial information and organizational strategies provided by traditional FSs and sustainable development reports. Eccles and Armbrester (2011) assumed that the adoption of IR to build long-term sustainable strategies helps the organization to create value over the long term, at the same time, providing information to stakeholders which promotes the stock price of organizations. In a study conducted in South Africa, Steyn (2014) found that the respondents fully supported the adoption of IR of South Africa as it drew attention from the stakeholders. Financial operations have been accepted as an important part of IR, but non-financial information should be included along with the financial information. IR helps investors understand the sustainable development issues of the company in addition to the financial information to make the right investment decisions.

Overall, the previous studies have provided critical arguments for the current reporting system and provided guidelines for the adoption of IR instead of the FSs and sustainable development reports. Especially, the adoption and implementation of IR have showed certain benefits and superiorities in many organizations around the world. Any long-term commitment to create value for the investors and positive impact on other stakeholders is encouraged, therefore, a comprehensive report which is beneficial for both inside and outside of the organizations is necessary and is the future of the current reporting system and Vietnam must face this inevitable trend.

2.2. Theoretical Framework

The study applied diffusion of innovations theory of Rogers (2003) to assess factors impacting the adoption of IR. Rogers expanded studies since 1950s on how innovations diffuse in the society and introduced the concept of S-shaped curve which is a curve describing the adoption of innovations over time. Thereby, according to Rogers, five adopter categories are: (1) Innovator (accounting for 2.5%), (2) Early adopters (accounting for 13.5%), (3) Early majority (accounting for 34%), (4) Late majority (accounting for 34%) and (5) Laggards (accounting for 16%). After identifying and analysing the mechanism of diffusion and acceptance of innovations, Roger pointed out the major factors that can influence this process. Particularly, there are three main groups of factors: (1) Factors relating to leadership: leaders have a substantial impact on the acceptance of innovations in organizations through strong advocacy, capability of directing, guiding and organizing the implementation; (2) Factors relating to organizations: The characteristics of an organization play a significant role in propagating and implementing new ideas and plans. An organization with good connection, communication, and sharing among departments will be very beneficial for diffusing innovations and vice versa; (3) External factors: In addition to the internal characteristics of organizations, the external factors also have a significant impact on the acceptance of innovations of organizations. Specifically, an innovative and competitive environment can promote the adoption of innovations. Besides, pressures from

customers, the market, or shareholders will encourage strong product innovations as well as innovations in organizational management.

2.3. Methodology

The research was conducted through two steps which are qualitative research and quantitative research. Qualitative research was based on the review of previous studies and background theories, combining with in-depth interviews with some experts, senior executives, finance directors, chief accountants or people directly participating in the preparation of FSs, SDRs. The results helped the authors develop research model, research hypotheses and factors that affect the diffusion of adopting IR in companies listed on the stock market of Vietnam. This study has been conducted since September 2010. Next, the authors revised the questionnaire before proceeding with the survey. Collected data was used to evaluate the scales, descriptive statistics. Quantitative research used data collected from the survey to test the research model of the factors influencing the diffusion of applying IR in enterprises listed on the stock market of Vietnam. The survey was conducted in 6 months (from November 2017 to April 2018). Respondents included senior executives, finance directors, chief executive officers, chief accountants, accounting managers (representatives of enterprises in terms of preparing FSs). The survey was conducted to collect data on perceptions of executives of listed companies in Vietnam. The 5-point Likert scale was used to assess the benefits of adopting IR and the challenges of applying IR. In addition, some questions used nominalization by scaling between 0 and 1 to assess the willingness to adopt IR of executives or questions asking selections of courses, or the understanding of executives towards IR. In order to analyze data, statistical method was used with the support of the software SPSS 22.

3. Results and Discussion

Questionnaires were distributed to 798 respondents of 300 companies listed on the stock market of Vietnam, in which 2/3 amount of questionnaires were answered directly, the remaining questionnaires were sent by email to respondents through relationships of the authors. However, only 532 answers were received in which 369 responses of 135 listed companies were valid.

3.1. Characteristics of respondents

Among 369 respondents, general directors/deputy general directors accounted for 14.9%; executive directors/deputy executive directors accounted for 27.64%; finance directors/deputy finance directors/managers accounted for 31.16%, the remaining was accountants accounting for 26.3%. These people represented companies in the fields such as manufacturing, construction, real estate, industry, finance, banking, commerce, telecommunications, services. Regarding the experience of respondents, under 5 years accounted for 4.06%; from 5 years to 10 years accounted for 27.91%; from 11 years to 20 years accounted for 38.22%; over 20 years accounted for 29.81%.

3.2. Perceptions towards IR

Respondents were asked about perceptions towards IR in listed companies in Vietnam. Their responses are displayed in the following table:

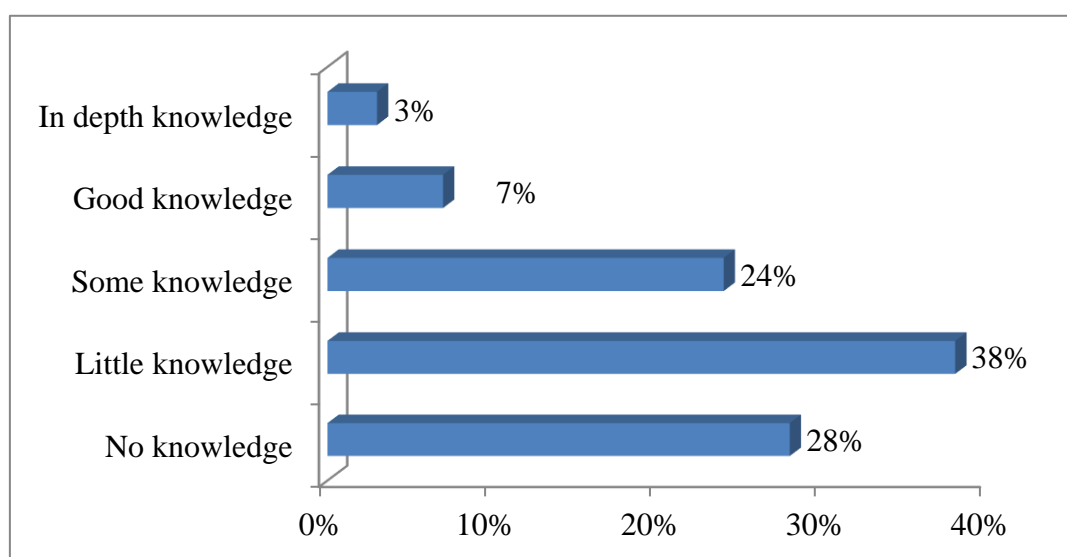
Table 1. Perceptions towards IR

Item	Frequency	Percentage (%)
Yes	254	68,8%
No	115	31,2%
Total	369	100%

Source: Overall result of Survey

When being asked about understanding of IR, the respondents admitted that their understanding of IR is not much. Regarding the level of understanding, 28% respondents stated that they have no knowledge of IR, 62% respondents have certain understanding of IR, only 3% have in-depth knowledge of IR, 7% have good knowledge of IR. These findings are consistent with the results of qualitative research that interviewed experts and senior executives.

Figure 1. Understanding of IR

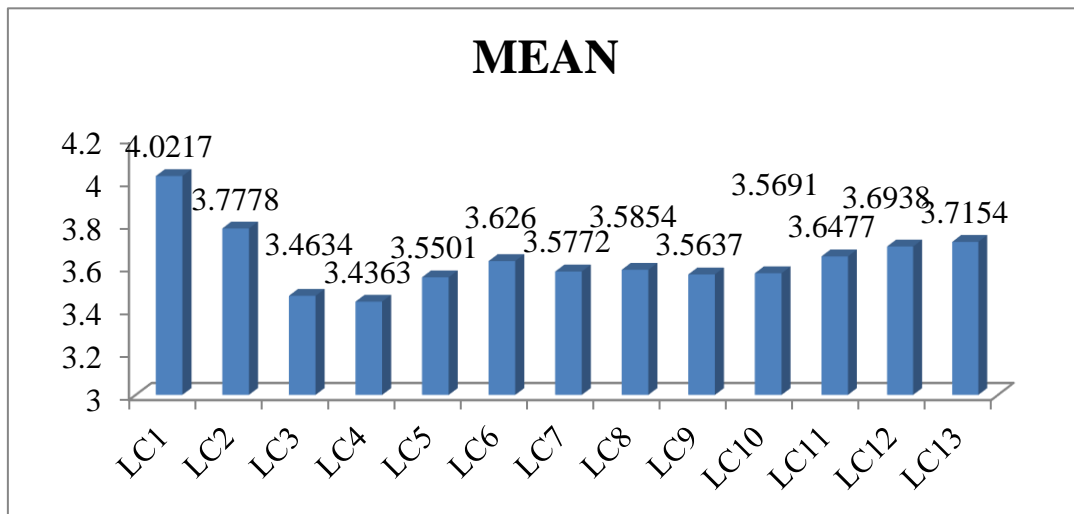


Source: Overall result of Survey

3.3. Benefits of adopting IR

The authors pointed out that the benefits of adopting IR include transparency (LC1); Reliability (LC2); Easier to understand (LC3); Higher corporate responsibility (LC4); Minimizing fraud (LC5); Improving opportunities to access to the capital (LC6); Reducing costs of capital mobilization (LC7); Accessing to the international market (LC8); Increasing trust of shareholders (LC9); international recognition (LC10); Promoting integrated thinking (LC11); Easy comparison (LC12); Strengthening national prestige (LC13). The results showed that the variable LC1 "transparency" had the highest mean which is 4.02. Other observations also had high values of mean.

Figure 2. Benefits of adopting IR

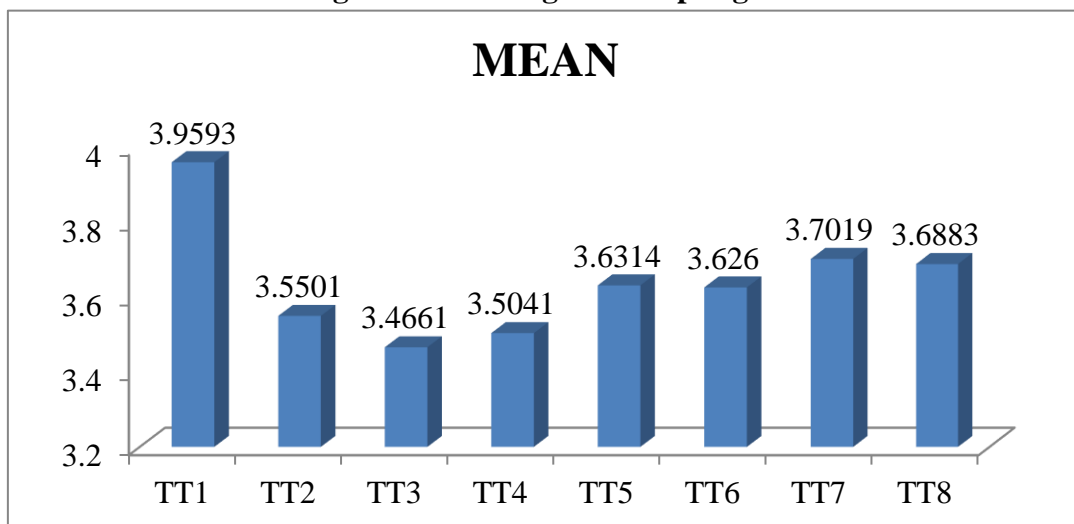


Source: Overall result of descriptive statistics

3.4. Challenges of adopting IR

The authors pointed out that the challenges faced by enterprises when adopting IR include: High initial application costs (TT1); Language barriers (TT2); Complexity (TT3); Lack of detailed guidance on IR (TT4); Disclosure of detailed information (TT5); no regulations on preparing IR in Vietnam (TT6); no incentive policies encouraging the adoption of IR (TT7); Universities have not mentioned IR (TT8). The results showed that variable TT1 “High initial application costs” had the highest mean which is 3.95. The variable with lowest mean is TT3 “Complexity” (mean = 3.46). Other items have relatively high means.

Figure 3. Challenges of adopting IR



Source: Overall result of descriptive statistics

3.5. The plan of adopting IR

The results showed that none of the surveyed companies adopting IR, some of which are considering adopting IR due to its benefits. Specifically, 13.55% of companies are

considering adopting IR as their own financial reporting mechanism. 56.1% said they have no idea about the plan of their enterprises. The findings seem to be consistent with the qualitative results of the previous authors.

Table 2. The plan of adopting IR

Item	Frequency	Percentage (%)
Less than 3 years	0	0
3-5 years	0	0
5-10 years	112	30,35
Considering the adoption of IR	50	13,55
No idea	207	56,1
Total	369	100%

Source: Overall result of Survey

When being asked about the willingness to adopt IR in listed companies in Vietnam, responses of respondents are displayed as follows:

Table 3. Willingness to adopt IR

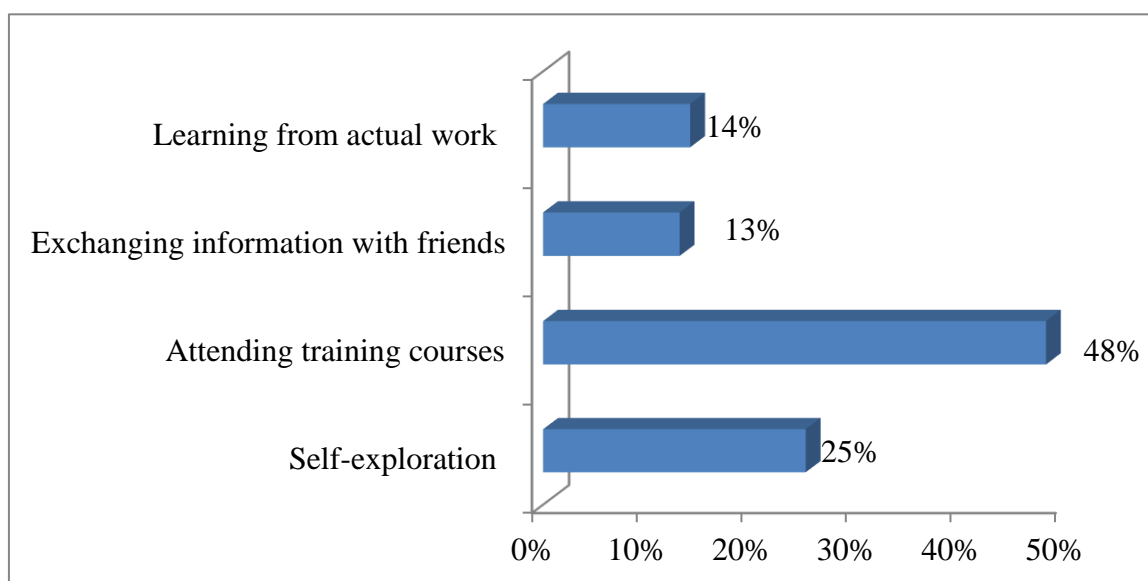
Item	Frequency	Percentage (%)
Yes	129	34,95
No	240	65,05
Total	369	100%

Source: Overall result of Survey

3.5. Channels of information to learn about IR

In order to evaluate the preparation of knowledge related to IR, respondents were asked whether they learn about IR from training programs, or from books/other materials or friends or from practical work. The results showed that the majority of respondents learned about IR through attending training courses which accounted for 48%; followed by 25% of respondents learned about IR by themselves through books/other materials; 13% of respondents learned from friends and 14% learned from actual work.

Figure 4. Channels of information to learn about IR



Source: Overall result of Survey

** The duration of training courses of IR*

To assess the preparation of knowledge of IR, respondents were asked about the duration of a training course of IR. The results showed that 2-day courses accounted for 23.8%; 3-day courses accounted for 42.8%; 1-week courses accounted for 18.2% and courses which are longer than a week accounted for 15.2%.

Table 4. The duration of training courses of IR

The number of days	Frequency	Percentage (%)
Two days	88	23.8%
Three days	158	42,8%
One week	67	18,2%
More than one week	56	15,2%
Total	369	100%

Source: Overall result of Survey

4. Conclusions and Policy Implications

It seems that IR is relatively to the market and enterprises in Vietnam, so there has been only a few organizations concerning about IR, especially, Bao Viet is one of the successful enterprises in implementing IR. Although IR is quite new in Vietnam and the level of awareness and understanding is relatively low, the study showed that 13.55% of enterprises are considering adopting IR. This indicates that more enterprises are interested in applying IR. In this survey, the respondents wished that associations and the State Securities Commission would organize courses and seminars to raise awareness and understanding of IR for businesses. Joining the WTO requires listed companies in Vietnam to provide adequate and reliable information to investors, customers and creditors. Accordingly, adopting IR is a new direction and an option allowing enterprises to meet the

requirements of the economic development and the international economic integration. From the above analysis, it can be seen that a suitable direction for domestic enterprises is to adopt IR in the process of international integration.

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The Impact of Intellectual Capital on Financial Performance: Empirical Evidence of Listed Firms on Hochiminh Stock Exchange

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Abstract

This study investigate the relationship between intellectual capital and financial performance of 179 listed firm on Hochiminh Stock Exchange. The study uses value added intellectual capital method (VAIC) to measure the intellectual capital and Return on asset (ROA) to measure financial performance. The result shows the positive correlation between these two ratios.

Keywords: *Intellectual capital, Financial performance*

JEL code: *M41*

1. Introduction

There is an increasing trend of interest on intellectual capital because of this key driver of value creation among corporation.

Intellectual capital is often referred to as intangibles particularly in research literature. It is the value of a company's employee knowledge, skills, ideas, business training, which is not listed in balance sheets. In today's world, it is stated that not only the products manufactured by companies but also their intangible assets are the sources of economic value (Chen, Cheng & Hwang, 2005). It is the reason to discuss and exam the relationship between intellectual capital

and firm performance because firms are aware of the importance of these intangible assets and the present of intellectual capital in manufacture processes.

Bontis Bio's research (since 1997) on knowledge capital is considered the first in the field of knowledge and knowledge management. His research was based on primary data through a psychometric questionnaire (Bontis, 1997) with a sample of 107 MBA students studying at Kula Lumpur and Seremban. The study identifies three components of knowledge capital: Human Capital (HC), Structural Capital (SC), Customer Capital (CC). Bontis, Chua, Richardson (2000) in research: "Intellectual Capital and Business Performance in Malaysian Industry," used multivariate regression to maximize the interpretation of variables, investigating the relationship between independent variables (HC, SC, CC) and dependent variable is business efficiency. Research showed that regardless of the type of business, human capital is important, the customer capital has a significant impact on the capital structure, and confirmed the development of structural capital is positively connected to the business performance. In addition, this study also shows that human capital is more powerful in the non-service industry than in the service industry.

Studies of Lodhi and Rohra, 2009 invested the link between intellectual capital measured by VAIC model and financial performance. VAIC includes three component measures: Human Capital efficiency (HCE); Structured Capital Efficiency (SCE); capital efficiency efficiency (CEE). They suggested that the intellectual capital has significantly positive impact on capital gain of investors. Considering the relationship between knowledge capital and market value and the financial performance of enterprises, the article "An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance" of Ming -Chin Chen, Shu-Ju Cheng, Yuhchang Hwang (2005) used secondary data from companies listed on the Taiwanese market from 1992-2002 and also the Value Added Intellectual Coefficient (VAIC) measurement method. The development of this study is to explore the relationship between knowledge capital and financial performance of enterprises in the present and in the future. The results indicated that knowledge capital has a positive impact on the market value and the current financial situation. In the future, knowledge can be considered as an indicator. The study demonstrated the different effects of the three components of VAIC on the dependent variables of market value and financial performance. The authors point out the inadequacy in the of capital structure (SC), and provide evidence that the cost of investment and development (R & D) should be added to measure this indicator.

The results of Hassani and Nasiri (2014) have concluded that intellectual capital has no relationship with the value of the company on the stock market. The topic examines the relevance of information about intellectual capital to investors and the role of the components of intellectual capital in explaining the value of the company, using a sample of 159 companies listed on the Stock Exchange Tehran (Iran) for the period 2006-2012. The authors used the Ohlson model to standardize share prices by function of book value, income and other types of information that may be related to the value of the company. The results show that the addition of ICs to the VAIC model does not increase the likelihood of explaining the company's value to

the model. Only the Value added efficiency of capital employed (VACA) is important in explaining enterprise value. Other components of intellectual capital include human capital and structure capital do not effect the firm performance.

In the context of Vietnam, the require of intellectual management is increasing, there are some studies about intellectual capital. For example: In the essay "Contributing capital to establish enterprises by intellectual property rights in Vietnam", Doan Thu Hong (2012) aims to generalize the situation of capital contribution to establish enterprises by intellectual property rights in Vietnam. The paper does not focus on how to measure the intellectual capital, but focuses on providing the information required by law about intellectual capital.

In other words, many authors in the world and in Vietnam have studied the factors affecting the firm performance such as Hansen and Wernerfelt (1989), Juliana and Luiz (2012) or Quoc Nghi and Van Nam (2011), but these factors have not been found completely and knowledge is one of the underlying factors. The study of the impact of intellectual capital on financial performance is still limited. Especially, Intellectual capital is a new topic in Vietnam but has received the attention of a large number of researchers such as Bui Quang Binh (2009), Tran Tho Dat (2011), ... However, there are very few articles study and assess the impact of intellectual capital to the production and business of enterprises in Vietnam. Recognizing the urgency of the research topic goes along with exploring these gaps, this paper will test the relationship between intellectual capital and financial performance

2. Literature review

Ebrahim, Abdullah, Faudziah (2014) classify financial performance measures into two categories: accounting-based measurement and market-based measurement.

The accounting based measurement is based on indicators of short-term profitability of enterprises in previous fiscal years.

In particular, the most commonly used indicators are ROA and ROE. By reviewing most of the 2000-2012 research on measurement of financial performance, Ebrahim, Abdullah, Faudziah (2014) have shown the number of studies using ROA and ROE (88 and 52). although there is some criticisms of the use of accounting measures such as ROE that are easily distorted by corporate investment strategies or ROA should only be used for comparison in the same business sector.

These indicators show financial performance through economic factors, measured directly through the profit of the business so that the analysis work easier, making it easier for investors to compare, choose and make the right decision. Between ROA and ROE, researchers often prioritize the use of ROA because, as mentioned above, ROE is easily distorted, thus reflecting financial missteps that affect the decision of the investor. The action of buying treasury shares will reduce the number of shares currently circulating in the market, and the book value also decreased. As a result, ROE will increase while business performance is unchanged. Therefore, in this study, authors use ROA as the indicator of financial performance. Intellectual capital: is a broad concept that many researchers consider

to be similar with the words: intangible assets, knowledge assets, knowledge, information assets, human capital, or hidden value of the business.

3. Intellectual capital (IC)

Andriessen and Stem (2004) defined the IC as "all intangible resources available to the organization, bringing relative advantage, and combining it can create future benefits". Competitive advantage of enterprises has gradually shifted from tangible assets to intangible assets - knowledge capital.

Knowledge is a set of skills and competencies, so different types of knowledge have different forms and characteristics. There are no accepted general methods for measuring the existence of IC,

Seetharaman et al. (2002) argue that IC indicators are brand, competitive advantage, customer relationship, human capital, product, brand, research and development. Chan (2009) defined the IC as consisting of human capital (HC) and capital structure (SC). In particular, human capital is the staff, resources within and outside the enterprise, including suppliers, investors and customers. Structure capital includes elements such as databases, proprietary computer systems, software, strategies, processes, or supply chains.

This research project measures IC based on Australian research by Dyna Seng (2010). This topic was developed by Pulic (1988) using the value added intellectual capital (VAIC) to evaluate the effect of IC. The VAIC includes the sum of three components: Human Capital efficiency (HCE); Structured Capital Efficiency (SCE); capital efficiency efficiency (CEE). HCE and SCE jointly form the effective IC (ICE). Accordingly, IC can not create value itself (Pulic, 1998), instead the company's capacity is enhanced only when it is combined with financial capital and material capital. For example, when IC is used with physical and financial assets, the value of the assets will increase. Popular branding with a product can increase sales. Therefore, a company uses its physical and financial capital to improve its performance, and IC will determine how the financial and material capital is used. VAIC includes three elements: **VAIC = HCE + SCE + CEE**

HCE covers the skills, experience, productivity, knowledge and suitability of employees in the workplace. According to the VAIC model, human capital (HC) is defined as wages and salaries (Pulic, 1998). In the control model, more skilled laborers receiving higher salaries would increase the value of the company more than the lower-paid workers. HCE is calculated as follows:

$$\text{"HCE = "VA" / "HC"}$$

VA is the difference between input and output. VA is also defined as the net value created by the enterprise for one year (Chen et al., 2005) and can be expressed as:

$$VA = S - B = NI + T + DP + I + W$$

S: Net revenue (input)

B: Purchased materials or services or cost of sales (output)

NI: Net Income after Taxes

T: Taxes;

DP: Depreciation;

I: interest expense;

W: Wages for workers.

Structural Capital (SC) includes items such as strategy, corporate networks, patents and brand names. SC and SCE are calculated as follows:

$$SC = VA - HC$$

$$"SCE" = "SC" / "VA"$$

CEE (capital employed efficiency or physical capital employed efficiency from the tangible assets side) includes the effect that HCE and SCE do not capture. CE is the sum of assets minus intangible assets and CEE is expressed as follows:

$$"CEE" = "VA" / "CE" ""$$

The traditional accounting records do not show much between the book value and market value. That is the value created by intellectual property. There is a big gap between the value of the business on the balance sheet and the view of the investor on the value. In most enterprises today, the evaluation of the market is mainly expressed in the brand name but it is not clear what the role of intellectual capital in it. If managers do not take full advantage of it, knowledge assets do not create value.

It is possible to see that the knowledge capital is increased from accumulated investment and amortized due to the advancement of science and technology. Knowledge will be outdated like machines, equipment, workshops if not renovated, improved as well as updated continuously. When involved in the business, people knowledge become the intellectual property of that business. Whether or not this capital is truly a valuable asset depends on many factors such as the ability to communicate, the ability to understand oneself and others, vision and ability. management decision-making, communication skills, and the potential inherent in each person.

In South Africa, Firer and Williams (2003) investigated the relationship between intellectual capital and performance of 75 companies on the Johannesburg Stock Exchange and used measures of profit, productivity and market value. The authors conclude that there is no significant relationship between intellectual capital and company performance. According to the results of this study, it seems that compared to European countries, countries in South Africa depend less on intellectual capital. This is because developing countries in South Africa use physical resources as a major source of value for their business.

Tseng and Goo (2005) point out that the factors of human capital, structure capital have a significant positive impact on the profitability of the business. As a result, the overall positive impact of intellectual capital on business activities of enterprises. Chen et al. (2005), using the

VAIC method, concluded that there is a positive relationship between intellectual capital and market value. The author mentions the issue that investors should consider information on intellectual property in the decision-making process. In this study, the positive relationship between the factors was consistent with the results of the previous study.

In the Malaysian study on the relationship between knowledge capital and corporate efficiency, Ting and Lean (2009) used the VAIC method and analyzed it in relation to the ROA. The subject found a very positive result, up to 76%, on the relationship between the three components of intellectual capital and profitability

4. Methodology

The data used in this study are collected from audited financial statements, annual reports and stock exchange statistics for the period 2014-2017 of 179 companies listed on the Stock Exchange. Ho Chi Minh City is posted on the official website of the company, the official website of Ho Chi Minh City Stock Exchange and the website www.finance.vietstock.vn.

The data used in this study are array data. For this type of data, models are often used for pooled OLS, FEM, and random effects models

Hypothesis 1: The effectiveness of human capital has a positive effect on financial performance

Hypothesis 2: The effectiveness of structure capital has a positive effect on financial performance

Hypothesis 3: The capital employed efficiency has a positive effect on financial performance

Model: $ROA_{i,t} = \beta_0 + \beta_1 * HCE_{i,t} + \beta_2 * SCE_{i,t} + \beta_3 * CEE_{i,t} + \beta_4 * LEV_{i,t} + \beta_5 * SIZE_{i,t} + \beta_6 * GROWTH_{i,t} + \beta_7 * STATE_{i,t} + \beta_8 * TSCDHH_{i,t} + \varepsilon_i$

Dependent variable

ROA: This ratio is more than zero, indicating that the business is profitable. The higher the ratio, the higher the efficiency of business operation and vice versa. The study of McGuire et al. (1988), Russo and Fouts (1997), Clarkson et al. (2008) used ROA as a measure of business performance

5. Independent variables

Value added intellectual capital (VAIC) was developed by Public in 1998, whereby VAIC is considered as an effective measure by which a company uses material, financial, and intellectual capital to increase. The VAIC includes the sum of three components: Human Capital Efficiency (HCE), Structure Capital Efficiency (SCE) and Capital employed Efficiency (CEE, including physical and financial capital).

Human Capital Effect (HCE): Human capital includes the skills, experience, productivity, knowledge and suitability of employees in the workplace. Measurement formulas:

$$HCE_{i,t} = \frac{VA}{HC}$$

VA: The net value generated by a business over a year is expressed as: $VA = NI + T + DP + I + W$ (with NI: net income after tax; I: interest expense, W: worker's wage)

HC: Labor cost

Structured Capital Efficiency (SCE): elements of capital structure including proprietary computer systems, databases, strategies, formulas or patents, information systems, production processes, the results or the products the business has created over time.

$$SCE_{i,t} = \frac{SC}{VA}$$

SC: Capital structure, calculated by the formula: $SC = VA - HC$

VA: The net value created by the business for one year

The Capital employed efficiency is the economic term reflecting the level of exploitation and use of capital of enterprises in production and business activities in order to create maximum value with minimum cost. This ratio presents a dollar spent on using capital generates how much value for the company.

Capital employed efficiency (CEE): To achieve the objective of maximizing the return or maximizing the value of an enterprise, enterprises must seek measures to exploit and use the internal resources thoroughly. and outside the firm. Therefore, the efficiency of using capital of enterprises must be put on the top.

$$CEE_{i,t} = \frac{VA}{CE}$$

VA: The net value created by the business for one year

CE: Financial and material capital, calculated as (Total Assets - Intangible Assets)

6. Control variables

Leverage is the ratio of debt to total assets in a company's capital structure. Studies by Ghosh, Nag and Sirmans (2000), Berger and Bonaccorsi di Patti (2006) show that the relationship between leverage and financial performance is positive. Meanwhile, studies by Gleason et al. (2000), Simerly and Li (2000) Zeitun and Tian (2007), Nguyen Le Thanh Tuyen (2013), show that negative business leverages on financial performance

Company size is considered to be an important determinant of corporate profitability (Babalola, 2013). In the Baumol study (1959), Malik (2011), Quoc Nghi and Van Nam (2011) have shown that the size of the business is positively correlated with enterprise profitability. However, some studies have shown the opposite results (Allayannis and Weston (2001).

$$SIZE_{i,t} = \text{LOG}(\text{Total Asset})$$

Growth rates and business performance were considered positive for each other through studies by Thomas, Philip and Margaretha (1999), Zeitun and Tian (2007), Quoc Nghi and Van Nam (2011). Eklund (2008), however, points to the opposite

$$\text{GROWTH}_{i,t} = \frac{\text{Sales } t - \text{Sales } t-1}{\text{Sales } t-1}$$

Table 1: Statistic Description

Variables	Observation	Mean	Standard Deviation	Min	Max
ROA	537	0,064516	0,0775148	-0,2867719	0,7837388
LEV	537	0,4768641	0,22039	0,0061188	0,9706117
SIZE	537	12,0622	0,5266777	9,970098	14,25636
GROWTH	537	0,1794328	0,7267314	-0,9450689	9,482057
HCE	537	4,981806	7,056033	-7,077445	53,65146
SCE	537	0,6206746	0,399269	-5,742379	1,566089
CEE	537	0,2937432	0,269401	-0,2121289	2,184281
VAIC	537	5,893986	7,31435	-6,05846	55,91922

Source: Author's Statistics

The ROA indicates the relationship between the ratio of net profit to total assets and the average value of 6.45%. However, there is a huge difference, with a minimum value of -29% and a maximum value of 78%. According to the National Financial Supervisory Commission, the profitability of non-financial businesses decreased slightly compared to the same period in 2015.

The mean of value added intellectual capital (VAIC) is 5.89 and the significant difference between observations (standard deviation is 7.3) is due to the fact that the use of knowledge capital in different occupations is different. The highest VAIC value is 55.92 which is 60 points higher than the low value of -6.06

7. Results:

Table 2: Result of Model Regression

	Pooled OLS	FEM	REM
VAIC	0,001945 (0,000)	0,0073067 (0,000)	0,0040895 (0,000)
LEV	-0,1409431 (0,000)	-0,0815974 (0,003)	-0,1148767 (0,000)
SIZE	-0,0073891 (0,222)	-0,0393118 (0,022)	-0,0204516 (0,012)
GROWTH	-0,0027545 (0,503)	0,0046984 (0,120)	0,0033699 (0,260)
Observations	537	537	537

	Pooled OLS	FEM	REM
Adj R-squared	0,2337		
R-squared: within		0,2733	0,2474
between		0,1338	0,2071
overall		0,1480	0,2048
Breusch-Pagan LM Test	Chi2(7) = 1067.746 P-value = 3.e-226		
Hausman		Chi2(6) = 88.02 Prob>chi2 = 0,0000	
xttest3/xttest0		Chi2 (179) = 6.7e+08 Prob>chi2 = 0,0000	

Source: Author's Statistics

Firstly, the relationship between human capital efficiency (HCE) and financial performance is the positive. To specify, $\beta_1 = 0.0041928$ shows that when human capital efficiency increases by 1 unit, the financial efficiency increases by 0.004 units and this result is statistically significant at the level of 5%. This confirms the hypothesis H1: The effectiveness of human capital has a positive effect on the financial performance of enterprises listed on the Ho Chi Minh City Stock Exchange Period 2014 - 2017. This result supports the views of Chen et al. (2005) and Dyna Seng (2010), but is different from study of Firer and Williams (2003) in their African market studies. They stated there is no relationship between HCE and ROA. Knowing how to use and improve the quality of human resources is one of the keys to the success of a business, especially those in the non-manufacturing sector. Machinery may be outdated but human capacity will develop if it is working in a good environment.

Secondly, the efficiency of capital structure has the same effect on the return on assets and this result is statistically significant with P-value = 0.005. The regression coefficient 0.0186891 indicates that when SCE increases by 1, the ROA increases by 0.019. This confirms the H2 hypothesis: The effect of structured capital has a positive effect on the financial performance of listed firms on the Ho Chi Minh City Stock Exchange The period 2014 - 2017, similar to Hong Kong's experimental evidence of Chan (2009b). In contrast to this conclusion, Shiu (2006b) and Ting and Lean (2009) point to the negative relationship of the efficiency of using structured capital to the return on assets. Structured capital represents the core values of the internal machinery of an enterprise. An economic organization that builds its foundations for a firm corporate culture will gain many advantages in the business process and will stand up to difficulties in different contexts of the economy.

Thirdly, capital employed efficiency has the same effect and among the three factors of VAIC, this factor has the strongest impact on ROA. With $\beta_3 = 0.2364238$, when the

capital efficiency increased by 1 unit, the financial performance increased by 0.236 units. This is consistent with the empirical evidence of Dyna Seng (2010), which shows a similar correlation between these two factors. However, with a significance level of 5%, this result is not statistically significant, which means that the H3c hypothesis: The capital employed efficiency has a positive effect on the financial performance of listed firms on the Hochiminh Stock Exchange is not supported.

Considering the significance level of 5%, the effective use of structured capital (SCE) has the strongest impact on the financial performance of enterprises. This result is different from the study by Ting and Lean (2009) and Singh and Narwal (2016), showing that CEE is the most powerful component of ROA, followed by HCE and SCE respectively. It can be seen that when referring to this intangible capital in Vietnam, enterprises use the resources of the organization as corporate culture or management system more efficiently than using the resources of each individual in the company. This implies that enterprises listed on the Hochiminh Stock Exchange do not have appropriate human resource management methods to enhance the qualities such as creativity, dynamism or individual satisfaction.

Finally, in this model, the LEV variable has the same effect on ROA, the SIZE variable has a negative effect on ROA. However, the control variables remaining GROWTH is not significant with a level of 5%.

8. Discussion and Conclusion

Firstly, in order to increase the knowledge of investors about knowledge capital, enterprises need to disclose information about the knowledge capital of their own units, except for elements that need to be kept confidential. Abundance of knowledge capital should be reflected in the annual report or other media of the business to investors as well as other stakeholders to create a positive effect on the market value of the business. Information disclosure should emphasize the current benefits and potential growth of that knowledge capital, rather than merely introducing what the company owns.

Secondly, for those businesses that have not accumulated much knowledge capital, they need to improve and accumulate capital to increase the value of enterprises in the market as well as catch up the development trend of the economy. The time to build and accumulate capital will be shortened if the company takes advantage of opportunities and learning experiences from its competitors or their predecessors. On the other hand, development needs to be consistent with the structure or characteristics of organizational structure, strategy, scale, process ... requires the building and accumulation of all components in the enterprise, more specifically, human resources.

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Determinants on Capital Expenditure of Non-Financial Listed Companies on Hanoi Stock Exchange

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Abstract

Capital expenditure is cash outflows for property, plant and equipment. Capital expenditure decision is a strategic decision at both the macro and micro levels. Capital expenditure is one of the most crucial managerial decisions whether at the institutional (macro) or the organizational (micro) levels. At the macro level, capital expenditure affects aggregate demand and gross national product, economic development and business cycles. At the micro level, it influences production decisions and strategic planning. Therefore, to make a rational decision, the enterprise must make plan for investment expenditure and need to carefully consider the factors affecting the investment. This paper attempts to find empirical evidences of the factors affecting capital expenditure of non-financial listed companies on the Hanoi Stock Exchange. The paper uses data from 190 non-financial listed companies on the Hanoi Stock Exchange from 2010 to 2017. By using General Method of Moments (GMM), the results of the study showed that the free cash flow and company size have positively effect on capital expenditure while interest expense and depreciation expense have negatively effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

Keywords: *Capital expenditure, Digital era, Dividend, Firm size, Free cash flow, Interest*

JEL codes: *M41*

1. Introduction

Cash flows in enterprises are usually divided for three activities: cash flows from operating activities, cash flows from investing activities and cash flows from financing activities. Capital expenditure is considered as cash flows for investment on property, plants and equipment. Capital expenditure have a great influence on the production and business process in the digital era. This paper calculated free cash flow from Operating Income + Depreciation – Income Taxes – Dividends (Vogt, S. C., 1997). Study factors that influence capital expenditure are significant in both theoretical and practical aspects.

From a practical point of view, for each country, to develop, it is necessary to have a stable economic growth and special attention should be paid in facilities and techniques for the whole economy. For every business in the context of the 4th Industrial Revolution, to survive and grow they need to continually innovate in order to meet the requirements of the digital era, enhance competitiveness and achieve high business results. Decision on capital expenditure is a strategic decision at both macro and micro levels. *At the macro level*, capital expenditure influences aggregate demand and gross national product, economic development, and business cycle. *At the micro level*, the decision to capital expenditure will influence the decision to produce and to make strategic plan. Therefore, to make a rational decision, the enterprise need to carefully consider the factors affecting the capital expenditure.

From a theoretical point of view, factors affecting the investment on fixed assets also attract the attention of many national and international researchers such as Fazzari (1988), Kuh and Meyer (1957), Becker and Sivadasan (2006), Kinyanjui Michael M. (2013), Ding, Guariglia & Hsinchu, Hamidi (2015), Sigeng Du (2016), Le Khuong Ninh et al. (2008),... Researches diverse on research context, research subjects and research results. However, researchers still have not agreed on the factors affecting capital expenditure and the relationship between free cash flow and capital expenditure. The study by Becker and Sivadasan (2006) suggests that there is no relationship between free cash flow and capital expenditure while study by Hovakimian and Hovakimian (2005) and Kinyanjui Michael M. (2013) argue that free cash flow and capital expenditure are positively associated, while Sigeng Du (2016) shows that free cash flows are negatively associated with capital expenditures.

Therefore, the study "*Determinants on capital expenditure in non-financial listed companies on the Hanoi Stock Exchange*" will be really meaningful. This issue has been mainly implemented in developed countries for decades but has not been systematically studied in Vietnam.

2. Theoretical framework and Literature Review

2.1. Theoretical framework

2.1.1 Dividend policy related theories

Modigliani and Miller (1958), hereafter referred to as MM, put forward the irrelevance theorems, more commonly known as the MM theorems and these form the

foundation of modern corporate finance theory. The two main conclusions that are drawn from the MM theorems are that firm value is dependent on its current and future free cash flow. Secondly, the level of dividends (or dividend policy) does not affect firm value given that firms maximize their value through investment whilst investment increases the value of future cash flows. The difference between equity issued and pay-outs of the firm is equal to its free cash flow. Hence, dividend policy is irrelevant when it comes to affecting firm value.

Regarding the impact of dividend policy decision on investment, it is understood that firms should take all projects with a positive Net Present Value (NPV).

However, the issue is that if management put more emphasis on dividend policy to such an extent that it eventually dominates investment policy decisions, it could be argued that NPV projects or projects creating firm value be cancelled or delayed for a later time. By cancelling or delaying positive NPV projects, this will obviously have an adverse effect on the future expected profits of the company.

2.1.2 Pecking order theory

Pecking Order theory popularized by Myers (1984) tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing means “of last resort”. Hence, internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. This clearly illustrates that the free internal funds can first be used to finance the investment needs of the firm.

2.1.3 Agency Costs Based Theory

This is a kind of conflict that comes about when the owners of the business are separated from the control of the business. Managers of firms may diverge from the goal of the owners which is the maximization of the firm value. Instead, managers may choose to behave in way that will satisfy their interest. This can be in the form of luxuriant office and cars, expensive travels, extravagant benefits etc. (Jensen and Meckling, 1976). The way to mitigate the chances of this kind of behavior from managers is by giving and or increasing the ownership of managers in the firm they manage. Additionally, increasing the debt level also helps to mitigate the loss of conflicts between owners/shareholders and managers. Since debt forces managers to pay out cash, reducing the free cash. If the manager has ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm’s money. With this step he will recognize that the firm money (partly his money) should be carefully managed. From other perspectives, this conflict arises because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects. Managers may prefer less risky investments and lower leverage to reduce the probability of bankruptcy.

Jensen (1986) adds that free cash flow as a cash in surplus of that necessary to fund all positive net present value projects. Free cash flow tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal compensation, by investing free resources in projects that have zero or negative net present values. These spending is seen as unprofitable especially to the shareholders, therefore, an aspect of the basic conflict of interest between owners and managers that is the agency theory problem. To mitigate this conflict the manager should have ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm's money. With this step (s)he will recognize and beware that the firm money (partly his money) should be carefully managed, therefore will invest this free cash flows in projects with positive NPVs

2.2. Literature Review

There are many studies to find the factors that affect the decision for capital expenditure in the enterprise. Studies diverse in the context of the study, the timing of the study and the objectives of study. The following research results are inherited from the previous research but may also have difference.

Meyer and Kuh (1958) investigated the determinants of capital expenditure at 600 US companies, indicating that firms generally favor internal cash flow and that when funds are available from inside the company, the company decides to invest more.

Becker and Sivadasan (2006) concluded for their research paper that in frictionless financial markets, investment does not depend on internal cash flows. In a large European data set, results indicate that firms invest more on average when they have higher cash flow. Contribution to the literature is being made by testing formally if the coefficient on internal resources (cash flow) is related to a country's financial development. Comparing countries, it is further discovered the cash flow effect is indeed stronger in countries with weaker financial development. This suggests that financial constraints are strongest when financial development is low.

Hovakimian and Hovakimian (2005) concluded that there is a positive relationship between internal funds and investment decisions due to the liquidity constraints faced by firms as a result of the gap between the cost of external financing and internal financing.

The results of Alti (2003) showed that the relationship between investment and cash flow is stronger in companies that are in growth stage. Moreover it reflects the company's growth opportunities. Alti (2003) continues to expound that investment is sensitive to cash flow. Furthermore, the sensitivity is substantially higher for young, small firms with high growth rates and low dividend payout ratios. The uncertainty these firms face about their growth prospects amplifies the investment cash flow sensitivity in that, the uncertainty is resolved in time as cash flow realizations provide new information about investment opportunities. This makes capital expenditure highly sensitive to free cash flow.

Kinyanjui Michael M. (2013) sought to determine the relationship between free cash flows and investments from the year 2009 – 2013. The research revealed that there is fairly

positive significant relationship between free cash flows and investments. Firms adopt the pecking order theory by utilizing retained earnings since no floatation cost is involved. When it is over, they use debt to control ownership and finally external equity is employed to spread risks among various stakeholders.

Dividend Payout Ratio (DPR) and depreciation are among the variables tested and found to affect capital expenditure. From the analysis DPR and depreciation have a negative relationship with capital expenditure. It was further revealed that DPR and depreciation have a fairly significant relationship with capital expenditure, whereas Free Cash flows had a significant relationship with capital expenditure.

Sigeng Du (2016) tried to determine the relationship between free cash flow and capital expenditure of Canadian listed companies and how this will affect the future cash flow of the firms. This research was carried out using a sample of 90 listed companies in Canadian from 2010 to 2015 to test the relationship between free cash flow and capital expenditure. Dividends and depreciation are among the variables tested and found to affect capital expenditure. Capital expenditure have a positive relationship with firm size and depreciation. From the analysis, free cash flow has a negative relationship with capital expenditure. Canadian listed companies would like to decrease their investments although their free cash flows increase. Normally, firms with more free cash flow will make more investments. However, Sigeng Du (2016) got a reverse result in Canadian firms during last six years. It is explained that among Canadian listed companies, a conservative investment method was used during 2010 to 2015. This paper only used three variables as the measure of relationship between free cash flow and capital expenditure, so that there is a need to run this model with other different factors to make sure if other variables will have effects on the relationship with free cash flow in Canadian quoted companies. Another deficiency is that most of the data collected from Bloomberg begins with the year of 2010. Adding the data before year 2010, the results from dynamic panel-data model will be more accurate.

Ding, Guariglia & Knight (2013) used a panel data of over 116,000 firms in China (2000-2007) to test the investment sensitivity among working capital, cash flow and fixed assets. They observed that the companies with higher working capital will have higher investment sensitivity in working capital to cash flow and low investment sensitivity in fixed capital to cash flow.

Geng and N'diaye (2012) observed that at the aggregate level, a 100 basis points increase in real interest rates reduces corporate capital expenditure in Canada by about ½ percent of GDP. Interest rates have a big influence on big companies' free cash flow. Big firm can run several projects at the same time and involve in huge amount of debts. Once interest rate goes up, much extra interest expense will be deducted from free cash flow and some projects may be cancelled because the increase of the interest expenses may lead to a negative NPVs.

Navid Saffarizadeh (2014) has focused on the relationship between cash flow and capital expenditure in the automobile industry of Germany, which is the absolute leader of

automobile production in Europe since the 1960s. It's one of the largest employers in the country and the world and has one of the biggest labor forces. Automobile industry is one of the most capital intensive industries. Automobile industry uses heavy capital expenditure. This amount of capital expenditure caused by changing models very frequently and most of it is needed for different levels in the industry such as design, production of new panels, presses, software, etc. The long run models in the present thesis show that cash flow and capital expenditure have statistically significant and negative relationship. Error correction model shows that capital expenditure converge to its long term equilibrium level at 31 percent speed of adjustment by the contribution of cash flow from operating activities which can be assumed as a reasonable convergence in terms of econometrics. Some of the general expenditures among industries are cost of machineries, factory, equipment, fixtures, trademarks, designs,... As results prove in this study, the relationship between cash flow and capital expenditure is not positive and can move up and down during different cycles of large and small capital expenditure. The result obtained in this study shows a negative relationship between cash flow and capital expenditure in the automobile sector which is a capital intensive industry. The final results are inconsistent with the findings of Vogt (1997) who tried to investigate the relationship between cash flow and capital expenditure in 421 firms. He found out that capital expenditure is related to the level of cash flow strongly and positively.

In Vietnam, the study by Le Khuong Ninh et al. (2008) analyzes the factors influencing the investment decision of 294 non-state enterprises in Kien Giang. The results of significant variables such as revenue, profit in the previous year, loan, fixed assets showed that non-state owned enterprises strongly depend on their own capital to purchase fixed assets. In addition, the decision to invest in fixed assets of businesses depends greatly on the growth of revenue, profit and many internal factors as well as the business environment.

From the review of the above studies, it is possible to draw the research gaps:

Firstly, the factors that influence capital expenditure in the enterprise are not consistent between the studies. Therefore it is needed to study to get further supplement evidence of the factors affecting capital expenditure in businesses.

Secondly, studies are mainly conducted in developed countries around the world, such as the United States, Germany and Canada (Meyer and Kuh, 1958; Navid Saffarizadeh, 2014; Sigeng Du, 2016). Very few studies in developing countries conduct research in this topic, especially in Vietnam, a developing country and has shifted from a centralized planned economy to market economy.

Thirdly, the previous research conducted using data prior 2010. Very few studies have been conducted in recent years, especially in the digital age when changes are taking place around the world involved in artificial intelligence, Internet of Things and big data. This is the era of strong growth in digital, biotechnology, computing and transforming all aspects of global economic and social life. Therefore, it is necessary to have updated studies in recent years in order to have meaningful research results.

3. Hypothesis developments and research methodology

Capital expenditure affecting the success and failure of each enterprise. Therefore, the enterprise needs to consider the factors influencing capital expenditure as follows:

(i) Factor 1: Free cash flows

Investment decisions on property, plant and equipment (PPE) depend on the financial ability of the enterprise. Enterprises can not decide on investment projects beyond their financial capacity. Free cash flow is a measure of the ability of a company to generate cash flow to execute new PPE investment projects and maintain its business. Free cash flow is more important than other measures to check the financial situation. Free cash flows and stable free cash flow shows good performance of the company and asserts that the company has chosen good projects to invest. Free cash flows does not depend on external factors. Free cash flows can help shareholders and analysts easily check the current position and predict the future position of the company. Thus, the first research hypothesis is given as follows:

Hypothesis 1: Free cash flow has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

(ii) Factor 2: Dividends

The dividend policy is the distribution of after-tax profit of the company. The dividend payment policy determines the percentage that will be retained for reinvestment in fixed assets, the percentage used to pay the shareholder in the form of dividends. High dividend payments will reduce the retained earnings to invest in fixed assets of the company. Thus, the second hypothesis is given as follows:

Hypothesis 2: Dividends has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

(iii) Factor 3: Interest expenses

Loan interest is a major factor influence on capital expenditure. In addition to equity, the enterprise must use borrowings and pay interest. Interest payment will increase the cost of investment. The change in interest rate policy has a huge impact on the cost of investment. Therefore, the enterprise must take into account the interest rate factor. According to Rittenberg and Tregarthen (2014), the relationship between interest rates and capital expenditure is counter-productive. Higher interest rates can increase the cost of borrowings and reduce the amount of investment. Geng and N'diaye (2012) also argue that raising real interest rates reduces the company's investment in Canada. Interest rates have a large impact on the free cash flow of large companies. Large companies can carry out multiple fixed asset investment projects at the same time and the amount of funding for these projects is self-funded. When interest rates rise, extra interest rates will be deducted from free cash flow and

some projects may be canceled because rising interest expenses can lead to negative cash flow.

Thus, the third research hypothesis is given as follows:

Hypothesis 3: Interest expenses has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

(iv) *Factor 4: Depreciation*

For investors, depreciation are important when making investment decisions. Initially, businesses have to spend large amounts of money to invest in fixed assets. Annual depreciation is the gradual recovery of this investment until the initial capital is recovered. Depreciation is the cost of doing business that affects the profit and taxable profit targets and hence affects the business results of the enterprise, especially in listed companies. Therefore, the depreciation cost helps businesses to consider replacing fixed assets periodically.

Therefore, the fourth hypothesis is given as follows:

Hypothesis 4: Depreciation has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

(v) *Factor 5: Firm size*

By scale, there are two types of companies that are large scale companies and small scale companies. Alti (2003) said that capital expenditure is sensitive to cash flow and the sensitivity is greater for young, small firms with high growth rates and low payout ratios.

Thus, the fifth hypothesis is given as follows:

Hypothesis 5: The firm size has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

(vi) *Factor 6: Working capital*

Total assets are divided into two categories: current assets and long-term assets. Companies may have a prioritized investment strategy for long life assets so that will reduce investment in liquid assets and vice versa because the company's resources are limited. Working capital is the remaining part after taking current assets minus current liabilities. Ding, Guariglia & Knight (2013) used a panel data of over 116,000 firms in China (2000-2007) to test the investment sensitivity among working capital, cash flow and fixed assets. They observed that the companies with higher working capital will have higher investment sensitivity in working capital and low investment sensitivity in fixed assets. It also suggested that an active management of working capital may help firms to alleviate the effects of financial constraints on fixed assets. Thus, the sixth hypothesis is given as follows:

Hypothesis 6: Working capital has positive effect on capital expenditure of non-financial companies listed on the Hanoi Stock Exchange

4. Research Methodology

4.1 Sample Selection

Data in this research has been collected from financial statements of 190 non-financial companies listed on the Hanoi Stock Exchange (HNX) between 2010 and 2017. To ensure the results of the study, the study uses data from listed companies that are stable on the HNX between 2010 and 2017. The companies selected for the sample must have the same financial year. Financial year begin January 1st to December 31st and there must have information on capital expenditure for at least three consecutive years.

4.2 Research design

In this research, we employ 3 regression models: random effects model (REM), fixed effects model (FEM) and generalized method of moments (GMM) to analyze the relationship between free cash flow and capital expenditure based.

In the panel data study, in the estimation of the study model firstly regression model of fixed effects models or random effects models. In case of detecting bad phenomena such as malformation or missing important variables leading to inaccurate estimation (or defect of the model), it should be handled. In the case of a malformed function, the function must be changed accordingly. In the case of missing significant variables, the independent variable in the old model is that the variable is represented by another variable that the variable has not included in the model is related to the excess leading to the defect model. The tool variable is closely related to the independent variable, the dependent variable in the old model but not related to the remainder. The model adds this tool variable to the complete defect of the model called generalized method of moments (GMM). Thus, the article will be based on the results of GMM regression to analyse the results of the study.

4.3 Regression Model

In this paper, we assume a liner regression relationship between the dependent variable (capital expenditure) and the independent variable (free cash flow) as well as other variables (dividends, depreciation, working capital, firm size and interest expenses).

In corporate finance, free cash flow can be calculated in variable ways depending on available data. According to this paper and some relevant variables, calculating free cash flow as follows:

$$\text{Free Cash Flow} = \text{Operating Income} + \text{Depreciation} - \text{Income Taxes} - \text{Dividends}$$

(Source: Vogt, S. C., 1997).

The Dynamic Panel Data Model can be constructed as follow:

$$CE_{i,t} = \alpha_0 + \rho CE_{i,t-1} + \beta_1 FCF_{i,t} + \beta_2 DIV_{i,t} + \beta_3 IE_{i,t} + \beta_4 DPRN_{i,t} + \beta_5 WC_{i,t} + \beta_6 SIZE_{i,t} + u_{i,t} \quad (4.1)$$

In which:

Dependent variable is CE_{i, t}: Capital expenditure in company i, in year t

Independent variables include:

CE_{i, t-1}: Capital expenditure for fixed assets in company i, in year t-1

FCF_{i, t}: Free cash flow of firm i, in year t

The value of free cash flow is calculated by the following formula

Free cash flow = Operating profit before tax + Depreciation - Corporate income tax - Dividends paid (Source: Vogt, 1997)

DIV_{i, t}: Dividends paid for company i, in year t

IE_{i, t}: Interest paid by company i in year t

DPRN_{i, t}: Depreciation expense of company i in year t

WC_{i, t}: The working capital of company i in year t

Where: *Working Capital = Current Asset – Current Liabilities*

SIZE_{i, t}: The size of company i in year t

Where *SIZE_{i, t}* is calculated in *Ln (Total Assets)* of company i in year t

u_{i, t}: Random error in the model

$\alpha_0, \rho, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$: Parameters in the model

For all the models, I will test them at 90% confidence level and 10% significant level. If the P value is less than 10% of significant level, the conclusion will be that the model is significant in explaining the relationship.

5. Empirical results of factors influence on capital expenditures of non- financial listed companies on Hanoi Securities Exchanges

5.1. Descriptive Statistics

Table 1: Descriptive Statistics for non-financial listed companies on HNX

Variable	Obs	Mean	Std. Dev.	Min	Max
CE	2,085	22.4752	2.217849	14.15184	28.49323
FCF	1,543	23.32089	1.769035	14.1859	28.68528
DIV	1,664	22.35976	1.857866	12.15478	27.41882
IE	2,053	21.76937	2.407377	8.809863	27.63046
DPRN	1,618	22.39363	1.775573	12.3208	27.90481
WC	1,972	24.4027	1.327537	17.37135	29.44394
SIZE	2,328	26.2285	1.324489	22.66923	31.08692

(Source: Processing results of author)

5.2. Correlation Analysis

Table 2: Correlation Analysis for non-financial listed companies on HNX

	L.CE	FCF	DIV	IE	D	WC	SIZE
L.CE	1						
FCF	0.565***	1					
DIV	0.345***	0.386***	1				
IE	0.500***	0.484***	0.243***	1			
DPRN	0.700***	0.757***	0.405***	0.643***	1		
WC	0.345***	0.543***	0.429***	0.295***	0.403***	1	
SIZE	0.644***	0.701***	0.429***	0.707***	0.768***	0.658***	1

(*** p<0.01, ** p<0.05, * p<0.1)

(Source: Processing results of author)

The correlation analysis showed that all independent variables were related to the dependent variable in the model (CE). However, to study the exact impact of independent variables on the dependent variable, regression model is required.

5.3. Regression Results

• FEM Regression Results

Table 3: Results from fixed effects models

CE	Coef.	Std. Err.	T	P>t
CE _{t-1}	0.089	0.034	2.610	0.009
FCF	0.058	0.055	1.040	0.296
DIV	0.012	0.036	0.330	0.744
IE	-0.055	0.046	-1.190	0.234
DPRN	-0.189	0.102	-1.860	0.063
WC	-0.218	0.070	-3.130	0.002
SIZE	1.775	0.183	9.730	0.000
_cons	-17.590	4.181	-4.210	0.000

(Source: Processing results of author)

• REM Regression Results

Table 4: Results from random effects models

CE	Coef.	Std. Err.	z	P>z
CE _{t-1}	0.326	0.028	11.650	0.000
FCF	0.166	0.043	3.890	0.000
DIV	-0.012	0.027	-0.440	0.657
IE	-0.062	0.028	-2.210	0.027
DPRN	0.165	0.053	3.110	0.002
WC	-0.137	0.046	-2.960	0.003
SIZE	0.579	0.085	6.830	0.000
_cons	-2.714	1.015	-2.670	0.007

(Source: Processing results of author)

- *GMM Regression Results*

Table 5: Results from GMM

CE	Coef.	Std. Err.	z	P>z
CE_{t-1}	0.271	0.080	3.410	0.001
FCF	0.109	0.064	1.700	0.089
DIV	0.066	0.045	1.470	0.141
IE	-0.118	0.061	-1.930	0.054
DPRN	-0.168	0.119	-1.410	0.158
WC	-0.487	0.071	-6.830	0.000
SIZE	1.874	0.192	9.760	0.000
_cons	-19.161	3.712	-5.160	0.000

(Source: Processing results of author)

- *Summary results of three models*

Table 5.6: Summary of regression results

Variables	(1) Model 1 (FEM)	(2) Model 2 (REM)	(3) Model 3 (GMM)
L.CE	0.0894*** (0.0342)	0.326*** (0.0280)	0.428*** (0.0433)
FCF	0.0580 (0.0555)	0.166*** (0.0427)	0.246*** (0.0453)
DIV	0.0117 (0.0358)	-0.0121 (0.0272)	0.00614 (0.0310)
IE	-0.0546 (0.0459)	-0.0619** (0.0280)	-0.0521* (0.0306)
DPRN	-0.189* (0.102)	0.165*** (0.0532)	-0.255*** (0.0931)
WC	-0.218*** (0.0696)	-0.137*** (0.0462)	-0.365*** (0.0520)
SIZE	1.775*** (0.183)	0.579*** (0.0848)	0.881*** (0.125)
Constant	-17.59*** (4.181)	-2.714*** (1.015)	-0.222 (2.151)
Observations	1,213	1,213	538
R-squared	0.145		
Number of i			190

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(Source: Processing results of author)

Research results indicate that free cash flow (FCF), firm size (SIZE), interest expense (IE), working capital (WC) have close relationship with capital expenditure but in different directions. In particular, free cash flow (FCF), the size of the company (SIZE) positively affects the cost of capital expenditure (CE) while interest expense (IE) and working capital (WC) Depreciation (DPRN) have the opposite effect on capital expenditure (CE). Dividend (DID) does not affect capital expenditure (CE)

6. Discussions and recommendations

6.1. Discussions

Firstly, evidences from regressions results showed that: there is a fairly positive relationship between free cash flows and capital expenditures. The relationship between cash flow and capital expenditure is an important ratio for researchers and investors. The significance of this relationship demonstrates the ability of the companies listed on Hanoi Stock Exchange to acquire long-term assets by using free cash flow. As the rate of relationship between cash flow and capital expenditure increases, it can be a positive sign. From the organizations considered, it was established that there is a positive fairly significant relationship between free cash flows and capital expenditure that is as the level of free cash flows increase, the level of capital expenditure increases. Firms prefer internally generated funds since they are cheaper to finance their investment needs especially short term projects and long-term projects that require immediate commitment (those that may not wait for strategic plans to be made). The results of this study are consistent with the findings of Meyer and Kuh (1957), Becker and Sivadasan (2006), Hovakimian and Hovakimian (2009), Alti (2003), Kinyanjui Michael M. (2013).

Thus, the first research hypothesis is accepted.

Secondly, the results of the study show that the dividend is not related to the capital expenditure. This study's results agrees with Fama (1974). Fama (1974) carried out a research on the relationship between investment decisions and dividend decisions. His findings revealed that capital expenditure decisions and dividend decisions are not correlated; that two types of decision making do not affect each other.

Thus, the second hypothesis is rejected.

Thirdly, the study results show that interest expense is negatively correlated with investment in fixed assets. The results of this study agree with the results of Rittenberg and Tregarthen (2014) and Sigeng Du (2016). According to Rittenberg and Tregarthen (2014), there is a negative relationship between interest rate and capital expenditure. Higher interest rate can increase the cost of borrowing used to finance capital expenditure and can reduce the quantity of investments.

Thus, the third hypothesis is rejected.

Fourthly, the results of the study show that depreciation are inversely related to the capital expenditure. Thus, the fourth hypothesis is rejected. This result means that during the research period, when the firm has a large amount of fixed assets (reflected in the large fixed

asset depreciation expense), the enterprise will not pay attention on capital expenditure. The company will set high priority on other activities such as financing activities to pay dividend to shareholders. The findings are consistent with the findings of Kinyanjui Michael M. (2013).

Fifthly, the research results show that the size of the company is closely related to the capital expenditure of company. This is very reasonable because fixed assets are valuable assets and investing in fixed assets will increase the total value of the company's assets. Large companies will always be big winners for fixed asset investment and vice versa. The results of this study are consistent with the findings of Sigeng Du (2016).

Thus, the fifth research hypothesis is accepted.

Sixth, the study found that working capital was negatively correlated with capital expenditure on fixed assets. This result is reasonable because working capital and fixed assets are two types of assets that constitute the total assets of an enterprise. According to the business strategy of each enterprise, they should decide whether to invest in fixed assets or current assets. Fixed assets are assets of great value and long life, long repayment period. At the same time, current assets are short-term assets, short-term returns. For companies listed on the Hanoi Stock Exchange, when companies choose to spend their investment strategy on current assets, the amount of money invested in current assets will be less. Therefore, the relationship between capital expenditure and working capital is counter-productive. The findings are consistent with those of Sigeng Du (2016) and Ding, Guariglia & Knight (2013).

Thus, the sixth hypothesis is rejected

6.2. Contributions of the research and recommendations

Firstly, in this study, it was observed that the relationship between free cash flows and capital expenditure of firms quoted at the Hanoi Stock Exchanges have a fairly significant relationship. Various stakeholders strive to carry out researches in order to be able to identify which are other major factors that affect the performance of their industry. This study will enable them to know the main factors that may influence investment decisions to ensure that firms make more factual investment decisions increasing their return on assets, thereby increase in their financial performance and maximize shareholders' wealth.

Secondly, in this study, it can be observed that most firms give much attention to profits after tax or earnings, which are not as refined as free cash flows. Therefore, I would recommend the Ministry of Finance in Vietnam should issue regulations to require all enterprise to disclose the value of free cash flows on financial reporting. Having this information will be considered to a better indicator of a company's financial health.

7. Conclusion

Capital expenditure is a payment where the benefit continues over a long period and it will improve productivity of enterprises. We are living in the digital age, biotechnology and computer development transforming all aspects of global socio-economic life, so raising capital expenditure to keep up the trend of the development of the era is a wise choice. Factors affecting the decision to spend on capital expenditure are free cash flow of the company, the size of the company, the interest expense and working capital. The results of this research are really meaningful for investors, business executives and state management authorities to make effective decisions.

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Impact of Ownership Structures and Auditing Teams' Existence on Level of Information Disclosure: Evidence from Vietnam

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Abstract:

The study intends to make practical contributions to the literature on information disclosure and corporate governance in the context of integration in Vietnam through investigating annual reports. Firstly, this paper indicated that, independent variable of audit committee is positively associated with level of voluntary information practices. Secondly, the fact that there are no ownership structures that influence levels of voluntary disclosure are surprisingly, especially for the case of foreign and institutional ownership, since these factors have been seen as important elements in the corporations' characteristics to encourage the transparency of voluntary disclosure to the public. Thirdly, the existence of external auditors in Vietnamese firms does not aim at forcing companies to disclose voluntary information but to ensure that the listed companies will supply the mandatory information. Last but not least, this study recommends corporations to strengthen supervision and monitoring the performance of information disclosure of listed companies, on the other hand they need to improve the quality, content and diversify means of information disclosure.

Keywords: *Auditing teams, Ownership structure, Disclosure of information*

1. Introduction

In business activities, investors require timely and correct information to reach effective investment decisions. Ho and Wong (2003) stated that, how information is shared among the participants deeply affects the function of capital markets. This kind of information can be collected through many ways, and one of the most important resources

is the corporations' annual reports. Binh (2012) saw annual reports as one of the most important sources for gaining insight into the performance of financial information provided by the company itself. Singhvi and Desai (1971) stated that the quality of corporate disclosure in annual reports considerably influences the extent and quality of investment decisions made by investors.

The most important role of annual reports is to provide relevant, useful and reliable financial information to investors, shareholders and other interested people about the financial position and performance of the business as well as its future prospects to help users in decision-making. The information that has been supplied by annual reports towards their stakeholders includes two types: compulsory and voluntary information and compulsory disclosure is of more importance. Mandatory disclosure is a basic market demand for information that is required by various laws and regulatory bodies and has been ruled at national or regional level through professional organizations or government authorities. On the opposite, corporate voluntary disclosure, being in excess of requirements, represents free choices on the part of managers to provide information to users of the annual reports (Yuen et al., 2009). This voluntary information is disclosed to satisfy the users' needs seem to be inadequately supplied by the mandatory disclosure.

There were considerable researches that concerned voluntary disclosure information in annual reports of companies and most of them centered in developed countries. Recently, there were several studies touched upon the voluntary disclosure in annual reports of developing countries. This paper is one of the first researches about the voluntary disclosure information in corporate annual reports of another developing country- Vietnam, follows the calling of Sarikas et al. (2009) for more studies of financial reporting and corporate governance in Vietnamese listed companies on stock market.

In addition, the Vietnamese government has put much effort to persuade all types of enterprises to increase transparency of information to make it convenient for management and investment. Moreover, Okeahalam (2004) emphasized an urgent requirement of examining the relationship between the level of voluntary disclosure and corporate governance in each country. On that basis, this paper has an ambition of filling this research gap by investigating the corporate financial reporting in the conditions of Vietnamese listed firms. This paper aims at to determine the potential influence of firms' ownership structures and auditing factors in order to explain the level of information disclosure.

The paper is organized as follows. Section 2 provides the literature reviews and hypothesis development on voluntary disclosures. The research methodology will be discussed in Section 3 and followed by results and discussions in Section 4. The final section will summarize and discuss the implications of the study.

2. Literature reviews and hypothesis development

Various studies concerned the influences of factors on voluntary disclosure of listed firms. These studies have used disclosure index or score to measure the level of corporate disclosure in annual reports of financial statements. In Vietnam, there are a few studies which investigate the relationship between influencing factors and voluntary disclosure. In my best

knowledge, there is only empirical study of Vu et al. (2011), which obtained the data from annual reports of 110 randomly selected Vietnamese firms in 2009 and showed out the significant relationship between firms' size, state ownership and Big4 and voluntary disclosure. Several other papers have used qualitative methods to analyze the current situations and factors influencing voluntary information disclosure in Vietnamese listed companies (Hang, 2011). Binh (2012) has involved listening to the gap between Financial Analysts' requirements and Financial Managers' viewpoints of information disclosure with the meeting ability of available information in the Vietnamese non- financial listed companies' annual reports.

The following parts examine the impact of ownership structure and auditing teams' existence on voluntary disclosure in the annual reports of Vietnamese non-financial listed companies.

2.1. Ownership structure

One of the most important features of Vietnamese listed companies is that many of these firms originated from SOEs and the privatization process allows institutions, foreigners as well as individuals to obtain a significant proportion of shares soon before being listed (Vu et al., 2011). The ownership structure determines the level of corporate monitoring and thereby the level of information disclosure (Eng and Mak, 2003). Moreover, Vietnam economy attracts huge capital resources from foreign countries, and foreign ownership potentially plays an important role in the development of Vietnam's emerging capital market. Ownership structures have been studied in various aspects of prior researches (e.g. ownership concentration, government ownership, family ownership, foreign ownership, institutional ownership and managerial ownership). Accordingly, this study examines three important ownerships in Vietnam's capital market, namely government ownership, foreign ownership and institutional ownership.

2.1.1. Government ownership

Many papers stated that the level of disclosure information will be weakened by the presence of state ownership. Jiang and Habib (2009) argued that firms with high state ownership have their separate monitoring by the government as well as the ability of accessing to government fund, thus they might not disclose information extensively. In developing countries like Malaysia, state-owned companies tend to disclose less information in order to protect their political linkages as well as their beneficial owner since they are mostly politically connected (Ghazali and Weetman, 2006). Vu et al. (2011) concluded that high proportion of state ownership firms have less motivation to disclose information since they have no difficulty in obtaining additional funds, regardless of information disclosure. Moreover, Xiao and Yuan (2007), Jiang and Habib (2009) and Naser and Nuseibeh (2003) also pointed out that, for the state- owned companies, increasing shareholder fund and maximizing profit is not the main purpose, because of the guaranteed returns by the state. These companies mainly aim at enhancing on wealth distribution as well as maintaining social order. Based on the above discussion, the following hypothesis is examined:

H1: There is a negative association between the extent of voluntary disclosure and

government ownership in the annual reports of Vietnamese non-financial listed firms.

2.1.2. Foreign ownership

Haniffa and Cooke (2002) and Bradbury (1992) argued that monitoring the actions of management by foreign owners required a greater need for disclosure information. They found a positively significant relationship between the level of voluntary disclosure and foreign ownership. Ho et al. (2008) stated that foreign investors would enhance corporate governance practices, which impacted significantly on disclosure level of the firms. According to Xiao and Yuan (2007) and Craswell and Taylor (1992), in the foreign-owned companies, the difficulties for foreign shareholders to control management behavior were not only differences in geography but also barriers in culture and language. Singhvi (1968) also found that most companies with high proportion of foreign ownership are often multinational subsidiaries, and there is a great influence of foreign owners' on the practices of corporate governance, which impacts significantly on the corporate financial reporting. As examines three important ownerships in Vietnam's capital market, namely government ownership, foreign ownership and institutional ownership. As such, this study proposes the following hypothesis:

H2: The higher the percentage of shares held by foreign investors, the higher the level of voluntary disclosure.

2.1.3. Institutional ownership

Institutional investors play an important role, hold a large proportion of capital and express a strongly professional experience in supplying the investment funds to financial markets. According to Trabelsi et al. (2004), institutional investors can protect shareholders' rights and wealth as well as improve voluntary disclosure strategy. Carson and Simnett (1997) demonstrated a significantly positive association between the percentage ownership by institutional investors and voluntary disclosure of corporate governance practices by listed companies in Australia. Summa and Ben Ali (2006) affirmed that institution investors required firms to recognize successful factors as well as risks through disclosure information in order to better evaluate and estimate future cash flow distributions (Raida and Hamadi, 2008).

On the other hand, Bushee et al. (2003) and Khlifi and Bouri (2007) suggested a negative relation between institutional ownership and the extent of voluntary disclosure. Given shareholder activism and the monitoring potential of institutional shareholders, the following hypothesis is tested:

H3: The extent of voluntary disclosure in annual report is positively related to the level of institutional ownership.

2.2. Auditing teams' existence

The auditing teams which have been studied in this research include the existence of internal audit committees and the type of auditing firms.

2.2.1. The existence of internal audit activities

According to Institute of Internal Auditing (IIA), the professional organization for internal audit was founded in 1941 with headquarters in the United States with more than 122,000 members' worldwide. Internal audit is the independent assessment and consulting activities within the organizations. It is designed to improve and add value to the operations of such organizations. It helps the organizations to achieve objectives by evaluating and improving systematically the effectiveness of management processes, to control and manage the risks.

Yuen et al. (2009) indicated that in the corporate governance, an audit committee has the duties of supervising the quality of reporting financial statements and ensures that the management board is "well informed about company decisions regarding accounting policies, practices, and disclosures". The existence of the audit committee will make a contribution to highly reliable annual reports, reduce and adjust errors and irregularities through the auditing profession (McMullen, 1996). A number of previous studies provided empirical evidence of a positive association between the presence of an audit committee with its activities and the voluntary disclosure practices in the U.S. (Malone et al., 1993; Singhvi and Desai, 1971), New Zealand (McNally et al., 1982), Switzerland (Raffournier, 1995), Czech Republic (Patton and Zelenka, 1997), Spain (Inchausti, 1997), Hong Kong (Ho and Wong, 2001), Jordan (Naser et al., 2002), Kenya (Barako et al., 2006). However, several researches illustrated that there was no significant association in India (Singhvi, 1968), Singapore (Ng and Koh, 1994), Malaysia (Hossain et al., 1994; Haniffa and Cooke, 2002), UK (Firth, 1979; Camfferman and Cooke, 2002) and France (Depoers, 2000).

However, in Vietnam great numbers of non-financial listed companies have only internal control, not internal audits, or for companies that this internal audit department exists, its operation is very faint. Internal audit's role has not been aware, even to be confused with the internal control (belong to Executive Board), meanwhile in fact internal audit is under administration of the Board of Directors.

Given the influence of audit committees and its activities on the context and content of corporate annual reports, the following hypothesis is suggested:

H4: The higher level of voluntary disclosure is associated with firms that have internal audit activities.

2.2.2. The Big Four auditing firms

Big Four auditing firms consist of four international auditing companies: Deloitte Touche Tohmatsu, Pricewaterhouse Coopers, Ernst & Young and KPMG (Owusu-Ansah, 1998). Al-Shammari and Bader (2008) suggested that there were benefits for both auditing firms and their clients in choosing an external auditor, since it could confirm the value of both auditing companies and clients. For example, Craswell and Taylor (1992) showed the favorite of choosing a Big Six auditing firms of listed companies, and this sent a message to the clients that famous auditing companies had their own high quality services.

Some studies have failed to discover a significant relationship between the auditor types and disclosure level (Wallace et al., 1995; Hossain et al., 1995). On the other hand, a number of other previous studies have documented a relationship between audit firm size and corporate disclosure, e.g. Ahmed and Nicholls (1994), Raffournier (1995), Wang et al. (2008), Wallace et al. (1994). Based on the above discussion, the following hypothesis is examined:

H5: The extent of voluntary disclosure is higher for firms that are audited by the Big Four auditing firms.

3. Research methodology

Two components were developed to measure the level of voluntary disclosure: (1) establishing an item list of voluntary disclosure; (2) determining the extent of the actual disclosure of these items.

The items of voluntary disclosure

Marston and Shrivies (1991) stated that followed Ceft (1961), many studies have measured disclosure quality, but there is no concrete explanation or general guide for the selection of items to measure the extent of voluntary disclosure. Wallace and Naser (1995) defined disclosure as an abstract construct that one could not determine its intensity or quality since it does not possess own inherent characteristics.

In general, voluntary disclosure is considered as the primary importance of disclosure. For the purpose of this research, voluntary disclosure is understood as the financial and non- financial information through annual reports over and above the mandatory requirements, either with regard to the Vietnamese company laws, professional accounting standards or any other relevant regulatory requirements. The prior researches have been checked to develop an item list that company could voluntarily disclose.

In the first step, the author establishes a checklist of voluntary disclosure items. The checklist is referred to voluntary items in the actual annual reports of previous papers. Afterward, all items of the checklist, if similar with the items of the form Appendix 4 (Circular 155/2015/TT-BTC) have been excluded. Relevant to establishing the disclosure items of this study, many prior studies on voluntary disclosure have been researched, especially in the developing countries such as India, South Africa, Nigeria, Mexico, Kuwait, Malaysia, Kenya and China (in Singhvi, 1968; Firer and Meth, 1986; Wallace, 1988; Naser et al., 2002; Chow and Boren, 1987; Hassain et al., 1994; Yusoff and Hanefaf, 1995; Barako et al., 2006 and Yuen et al., 2009). Both financial and non-financial items included in the list which listed companies may disclose could be relevant to investment decision-making. These items will be grouped in six categories; general corporate information, audit committee, financial information, forward-looking information, employee information, social responsibility and environmental policy, board structure disclosure,

Since this research focuses on voluntary disclosures, the primary list was considered to eliminate all the information that is mandated. All these disclosure items will be checked again to determine whether they are voluntary items or not. The list afterward was sent to

some individuals chosen on the basis of their expertise and knowledge of local accounting practices, who work with or are members of institutions that influence corporate financial reporting in Vietnam.

Sample selection

The sample period in this study is only for the year of 2015. Vietnam's Stock Market, before the date of 1st January 2015, there were 719 companies, listed on two stock exchanges: Hanoi Stock Market (HNX) and Hochiminh Stock Market (HOSE). The research excluded 47 firms, those newly listed in 2015 since these firms have been listed on the stock exchange for less than one year (Owusu-Anah, 1998) and 33 firms, those de-listed in 2015 (from 1st January to 31st December 2015). In addition, 40 firms of sample were financial sectors (18 commercial banks, 22 investment funds and insurance firms), so they were also out of the sample. Hence there was a rest of 496 non-financial listed companies for the whole Vietnam Stock Market.

Since the stock market in Vietnam has not been established so long (from the year 2000), and the legal system and penalties have not been carried out strictly in the disclosure of information, many newly listed firms (have just been listed for one or two years) have not disclosed their annual reports. Little information of financial results or annual reports in accordance with the law is found through the website of State Securities Commission of Vietnam (SSC) (Minh, 2011). A huge number of firms did not prepare annual reports to provide information to external users in their websites. The reasons might be that these companies had not gained good business results, and try to hide them, or they actually have no business activity in the fiscal year (for the newly listed firms). In the total of these 699 non-financial listed companies, there are 128 firms those have not announced annual reports in any kind of mass media (companies' websites, the two stock exchanges' websites or SSC). This problem will be analyzed and recommendations will be sent to regulatory makers in the last section of this research. The rest of 471 non-financial listed companies will be investigated as the set of sample firms. The sample has been described in Table 1.

Table 1: Sample selection

Listed companies in sample	Total
Total listed companies	719
Deduct:	
- Number of companies newly listed and delisted from 1 st January 2015 to 31 st December 2015	80
- Number of financial listed companies	40
- Number of companies that annual reports are not available	128
Sample	471

This study uses the multiple regression model (Ordinary Least Squares (OLS)) as the primary to examine the significant association between independent variables of corporate ownership structure, and the dependent variable of the whole Vietnamese voluntary disclosure

(DSL) as well as six detailed information categories of voluntary disclosure (from DSL1 to DSL6). Five hypotheses from Hypothesis 1 to Hypothesis 5 also have been tested.

In the sample of 471 companies, 6 of them have been excluded, since their beta coefficients (β) are negative in the process of calculating variable of Cost of Capital. The sample is now including 465 non-financial listed firms.

The following equation is the general form of regression model which has been fitted to the data in order to assess the impact of each variable on the disclosure index DLS and to test the associated hypotheses:

$$V_{ij} = \beta_0 + \beta_1 * STATE_j + \beta_2 * FORN_j + \beta_3 * INSTI_j + \beta_4 * AUDI_j + \beta_5 * BIG4_j + \varepsilon_{ij}$$

where:

V: voluntary disclosure index scores for sample companies

i: number of indices according to overall disclosure;

j: number of companies (1,... 465).

4- Results and discussions

4.1- Statistics of variables

Table 2 presents names and full meanings of all sample variables. It reported that the level of average voluntary disclosure in the sample companies is at medium level with the mean of 45.4% (ranged from 2.9% to 87.4%). It is much higher than Ferguson et al. (2002) in Hong Kong (13%), Meek et al. (1995) in U.S., U.K. and Continental Europe (18%), Ghazali and Weetman (2006) in Malaysia (31%); a little higher than Hossain and Qatar (37%) and less than Al-Shammari (2008) in Kuwait (46%).

Table 2: Summary of statistics of the variables (N = 465)

Variable	Min	Max	Mean	p50	S.D	N
DSL	0.029	0.874	0.454	0.451	0.168	465
STATE	0	0.780	0.250	0.198	0.247	465
FORN	0	0.492	0.188	0.059	0.180	465
INSTI	0	0.89	0.298	0.245	0.240	465
AUDI	0	1	0.282	0	0.366	465
BIG4	0	1	0.186	0	0.384	465

DSL= Extent of Voluntary disclosure of all non-financial listed companies of 72 voluntary items;

FOREIGN= Stock owned by Foreign Investors (%);

STATE = Stock owned by State or State-Institutional Investors (%);

INSTITU= Stock owned by other domestic Institutional Investors (%);

AUDI= The existence of internal audit committee (dummy variable that takes the value one if the firm has internal audit committee and zero otherwise);

BIG4 = The existence of BIG 4 audit companies (dummy variable that takes the value one if the firm has been audited by a Big 4 firm and zero otherwise);

The items shown in the following tables are based on data quoted in the annual reports of non-financial companies in the Vietnamese Stock Market. Relevant to the actual disclosure, the score of 1 (100%) implies that a company discloses all 72 items in their annual reports, whereas 0 (0%) indicates that there is no item disclosed by the company. The actual disclosure of each company was calculated by the following formula:

Actual disclosure of each company = $\sum d_j = 1$ if the item d_j is disclosed in the annual report, and otherwise 0.

n= 72 (total number of the items that have been disclosed)

4.2- Multiple regressions

** Multiple regressions between level of disclosure and independent variables*

To test the relationship between the independent variables and DSL, all the variables have been put into the multiple regressions. **Table 3** states the regression results of the relationship between ownership structure, corporate governance, companies' characteristics and the extent of voluntary disclosure. It shows there is only one variable with significantly positive relation with DSL, that is AUDI.

Table 3: Multiple Regression results (dependent variable: weighted voluntary disclosure score)

Independent Variables	Predicted sign	DSL			
		Model A	Model B	Model C	Model D
STATE	-	-0.034 (-0.64)	-0.035 (-0.74)	-0.004 (-0.04)	0.021 (0.31)
FORN	+	0.082 (1.28)	0.038 (0.49)	-0.024 (-0.45)	-0.031 (-0.61)
INSTI	+	0.047 (0.84)	0.046 (0.91)	0.078 (1.12)	0.043 (0.81)
AUDI	+	0.093***(3.72)	0.091*** (3.62)	1.704*** (3.54)	0.092*** (3.77)
BIG4	+	0.024 (0.79)	0.023 (0.77)	0.432 (0.73)	0.024 (0.81)
Obs.		465	465	465	461
F-value		6.51	6.42	6.53	7.61
Sig. F		0.0000	0.0000	0.0000	0.0000
R-square		0.89	0.92	0.90	0.93

*This table presents correlation coefficients for all the variables used in multiple regressions. Numbers in parentheses represent t-values that are adjusted using robust standard errors corrected for clustering at the firm level. *significant at the 10% level, **significant at the 5% level, and***significant at the 1% level. Model A is multiple regression model (OLS). Outliers are treated by following three models: Model B, Model C and Model D. Model B is winsorized method (three-sigma outlier approach), Model C is rank regression method and Model D is excluded method (three-sigma outlier approach).*

* *Model A*

Model A is a simple ordinary least square (OLS) regression run with all the included firms in the sample.

The negative and insignificant relationship between state ownership and the level of voluntary disclosures among sample of 465 Vietnamese listed firms and again, in the opposite of predicted direction indicate that *Hypothesis 1* could not be supported. In Vietnam, companies with over 50 percent of government ownership are State-owned-companies. The state as owner often has its separate goals, such as greater employment, social welfare and environmental protection, which are totally different from the profit maximization of individual shareholders (Yuen et al., 2009). Consistent with this research is Nazli and Weetman (2006), which stated no relationship between government ownership and level of disclosure. On the other hand, Yuen et al. (2009) and Jiang and Habib (2009) documented a positive relationship between these two variables.

In addition, no significant relationship was found between the amount of disclosure information and foreign ownership. Therefore, this rejects the conception of *Hypothesis 2* that foreign ownership has been seen as an important element in the corporations' characteristics to encourage the transparency of voluntary disclosure to the public. This result is consistent with Xiao et al. (2004), but contrast with Singhvi (1968), Haniffa and Cooke (2002) and Barako et al. (2006), which reveal that the more percentage of foreigners' proportion of stocks ownership, the more voluntary information has been disclosed in annual reports. The data in this study states that the foreign ownership of the listed companies is still at low level (18.8%) and does not have enough control power to influence on managers' decision-making, including the information disclosure. In future, the regulation makers should continue loosening the rules, especially Foreign Investment Law to attract more foreign investment capital.

Moreover, **Table 3** also suggests that there is no significant association between institution ownership and the level of disclosure. This finding does not support the *Hypothesis 3* and is consistent with other previous studies, such as Bushee et al. (2003) and Khlifi and Bouri (2007) which state that the institution ownership is not significantly associated with voluntary disclosure. Nowadays, the institutionalization and privatization are going strongly in Vietnamese enterprises (equitizing the SOEs). This process has been conducted in Vietnam since 1990 and has made encouraging progress. However, the renovation should be more rapidly. Vu et al. (2011) also particularly stated that Vietnamese regulatory makers should more focus on regulations to strengthen the transparency level of disclosure information in the privatization process of state-owned companies.

The statistical results in **Table 3** reveal that there is a significantly positive relationship between the extent of voluntary disclosure and the existence of internal audit activities. As a tool to detect and improve the weaknesses of enterprises' management system, internal audit activities assists the board of directors to control the operations and

better manage risks. It can enhance the confidence of shareholders in management's quality and internal control, as well as increase the firms' reputation on the stock market.

In Vietnam, the internal audit recently exists in the large- sized-companies, though its activities still belong to Control Board and is expected to supervise the functions of corporate governance as well as the innocence of financial statements. In this regards, this study is consistent with the prior researches obtained by Akhtarruddin et al. (2009) in Malaysia and Ahmed and Nicholls (1994) in Bangladesh. Thus the **Hypothesis 4** has been strongly supported ($p < 1\%$). Practices around the world show that, for the companies with internal audit, the ability of fraud is often lower and the business efficiency is often higher. Nevertheless, 29.8% of listed companies owned internal audit activities approves that, companies only disclose a low level of information about audit committees or their structures. But because of the importance of the audit activities information in the process of monitoring and early detecting of faults in the financial statements, management of publicly-listed firms should disclose more of this kind of information to fulfill the needs of shareholders and potential investors (Yuen et al., 2009).

According to Decision No. 832/TC/QQD/CDKT in 1997 of Ministry of Finance, internal audit committee reports to the CEO as a part of general manager's administration. It will reduce the independence of audit committee, since the whole management system of firms (prescribed by the board of directors) is the subject that will be reviewed by internal audit. Meanwhile, according to common practice all over the world, the internal audit committee shall report directly to the supervisory board or the Board, i.e. the higher management level. Thus, gradually, the foreign companies in Vietnam must comply with regulations such as the Act of Sarbanes-Oxley of the U.S., it means companies must perform internal audit. These companies will increasingly get the internal audit program that has been implemented by the parent company or has to build their own independent audit. In another developing country, such as Kenya, the establishment of audit committees has become mandatory for all listed companies since 2003. In Vietnam, the strong positive significance between internal audit activities and level of disclosure suggests that *mandating companies to establish their owned internal auditing committee might be a right way to encourage the disclosure and enhance the quality of financial reports* (Barako et al., 2006).

On the other hand, the existence of Big4 auditing companies has no influence on the level of voluntary information of listed firms to the public. It simply means that the size of audit firms does not influence the level of voluntary disclosure. The existence of audit firms in Vietnamese firms does not aim at forcing companies to disclose voluntary information but to ensure that the listed companies will supply the mandatory information (Vu et al., 2011). Therefore, the auditor type does not have a significant relationship with the total of DSL and **Hypothesis 5** has been not accepted. The prior researches such as Shingvi and Desai (1971) and Wallace et al. (1994) are consistent with the finding of this study.

** Model B*

Model B is a winsorized regression that aims at “reducing the effect of outliers in the sample” (Yale and Forsythe, 1976). Three-sigma outlier treatment approach has been selected for closer evaluation. By this method, a value is identified as outlier if it lies outside the range from “mean - 3*sigma” to “mean + 3*sigma”, where “3” is an integer and sigma are standard deviations of all independent variables in **Table 3** (except the dummy variables of AUDI and BIG4). This method illustrates one significant signs that are similar to Model A, however, the level of significance become stronger than the level of significance in Model A.

** Model C*

Model C is a rank (OLS) regression “that treats all observations equally in the data set whether it is influential or not” (Owusu-Ansah, 1998). This model has been estimated in several prior studies, such as Land and Lundholm (1993), Wallace et al (1994) and Wallace and Naser (1995). This model shows only one variable that is positively associated with level of voluntary disclosure: AUDI. Moreover, the explanatory power of Model C is relatively stronger than those of Model A, since “rank regression is considered “robust” in mitigating many of the methodological problems associated with skewed distribution and negative value” (Kane and Meade, 1997).

** Model D*

Model D is also OLS which overcomes the impact of influential observations by removing these observations from the data set (Owusu-Ansah, 1998). By Model D, to ensure that the existence of outliers does not bias the results, we exclude all the observations that include outliers. The outliers have been identified by using similar method in Model B (three-sigma outlier treatment approach). This model excludes 4 influential observations and suggests also one variable that has significant effect on level of disclosure.

5. Conclusion

This study is one of the first empirical papers that investigate the relationship between the ownership structures, the auditing teams’ existence and the level of information disclosure in the Vietnamese firms’ annual reports.

Firstly, the above analyses illustrated that the existence of internal audit and its activities is positively associated with the level of voluntary disclosure. *It is in consistent direction to my expectations and to numbers of prior researches in both developed and developing countries.* In Vietnam, the strong positive significance between internal audit activities and level of disclosure suggests that *mandating companies to establish their owned internal auditing committee might be a right way to encourage the disclosure and enhance the quality of financial reports* (Barako et al., 2006). In actual, there is no regulation requiring listed companies to own internal auditing in Vietnam until now; and the fact that the Ministry of Finance is currently developing a draft Decree guiding internal audits, which is expected to be completed by 2017 and will initially be mandatory for listed companies is an appropriate decision.

As a tool to detect and improve the weaknesses of enterprises' management system, internal audit activities assists the board of directors to control the operations and better manage risks. It can enhance the confidence of shareholders in management's quality and internal control, as well as increase the firms' reputation on the stock market. Because of the importance of the audit activities information in the process of monitoring and early detecting of faults in the financial statements, management of publicly-listed firms should disclose more of this kind of information to fulfill the needs of shareholders and potential investors in the future (Yuen et al., 2009).

Secondly, the fact that there are no ownership structures that influence levels of voluntary disclosure is surprisingly, especially for the case of foreign and institutional ownership, since these factors have been seen as important elements in the corporations' characteristics to encourage the transparency of voluntary disclosure to the public. The data in this study states that the foreign ownership of the listed companies is still at low level (18.8%) and does not have enough control power to influence on managers' decision-making, including the information disclosure. Although the Government has a policy of loosening the room without limiting foreign ownership (except for certain industries in accordance with the Company Charters), however, only four listed companies have foreign ownership exceeding 49%, but still not exceeded 50% (maximum 49.2%). In future, the regulation makers should continue loosening the rules, especially Foreign Investment Law to attract more foreign investment capital.

Thirdly, the existence of external auditors in Vietnamese firms does not aim at forcing companies to disclose voluntary information but to ensure that the listed companies will supply the mandatory information (Vu et al., 2011). Auditing by Big4 also create trust through the auditors' reputation of the accuracy of information in financial statements, especially for foreign investors. It simply means that the size of audit firms does not influence the level of voluntary disclosure. Therefore, the auditor type does not have a significant relationship with the total of DSL.

This study also opens the new door for the authors' future research on ownership structure, internal control and audit quality.

This research has several limitations. **First**, the sample of corporations' annual reports is only one year, 2015. It is better if the author investigates voluntary disclosure information in several recent years in order to observe the fluctuation of such information easily. **Second**, since the annual reports of 128 in the total of 719 Vietnamese listed companies are not available, the results are, therefore, not applicable to all.

In conclusion, the research also illustrated that, in the context of integration and modernization in Vietnam today, attracting foreign capital in the stock market is of more and more significance since in this study, foreign investment in Vietnam's stock market, despite the remarkable efforts of government just reaches 18.8%. It is certain that with enhanced quality of the corporate annual reports, firms can find it easier to attract a strategic

international shareholder to increase their expected size and growth. For the firms' management, this study recommends that, on one hand they need to strengthen supervision and monitoring the performance of information disclosure of listed companies, on the other hand they need to improve the quality, content and diversify means of information disclosure under the motto: full, timely, accurate and accessible. What is more, the state should have strict sanctions in forcing firms to stop listing for the firms that do not publish or not provide complete, timely information or deliberately conceal information detrimental to investors.

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PART II: MANAGEMENT ACCOUNTING



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Applying Activity Based Costing Method to Determine Environmental Costs in Brick Manufacturing Enterprises

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Abstract

Vietnam is facing with environment crisis such as material scarcity, global warming and climate change. Vietnamese brick manufacturing enterprises are under pressures in using materials efficiently and reducing environmental impacts. This has posed challenges to manage the environment effectively as well as to provide information adequately and correctly for managers to make decisions for sustainable development. Activity Based Costing method (ABC) is a useful tool for integrating environmental costs into strategic objectives of enterprises and linking goals with environmental management, thereby ABC method helps organizations improve environmental and financial performance. In Vietnam, however, ABC method is not really popular in the brick industry which causes negative impacts on the environment. Therefore, this paper focused on researching ABC method in brick manufacturing enterprises. Case study is conducted at a brick factory. Research results provide useful information to make decisions for product pricing, investment assessment, product design and technological lines change. Besides, to use ABC method, author give some suggestions for brick manufacturing enterprises such as: training staff about ABC method, improving the closed connection between accounting department and environmental management department.

Keywords: *Activity based costing method; Brick production, Environmental cost; Environmental management accounting; Brick production*

JEL codes: 1802

1. Introduction

Vietnam is facing with environment crisis such as material scarcity, global warming and climate change. Brick manufacturing enterprises are under pressures in using materials efficiently and reducing environmental impacts. This has posed challenges to manage the environment effectively as well as to provide information adequately and correctly for

managers to make decisions for sustainable development. Activity Based Costing method (ABC) is a useful tool for integrating environmental costs into strategic objectives of enterprises and links goals with environmental management, thereby ABC method helps organizations improve environmental and financial performance. In Vietnam, however, ABC method is not really popular in the brick industry which causes negative impacts on the environment.

The study presents an framework of ABC method and integrate ABC method in current management accounting system. The focus on ABC method can help company consider environmental costs fully and accurately. Moreover, a case study is conducted to illustrate the comparison between the traditional cost accounting system and the ABC system for allocating environmental costs. Although the Lam Son company allocated environmental costs, they has not yet integrated it into ABC system. Therefore, the paper apply ABC method to determine environmental costs in Lam Son company in the hope of help company to address the challenge of sustainable development more effectively.

2. Theoretical Framework

Environmental costs have been underestimated for the past two decades and most of them are not regularly monitored and not accurately allocated to the product or process by traditional accounting methods. Rogers and Kristof (2003) argued that ABC method can be applied in environmental accounting and helps enterprises allocate environmental costs better. ABC method provides production cost information accurately that will create a more realistic understanding of product profitability (Kreuze & Newell, 1994). Using ABC method in measuring environmental costs will create a great advantage - integrate environmental costs into the enterprise's strategic objectives and align the goals with management (Schaltegger & Burritt, 2000). As a result, the enterprise will achieve many benefits about both finance and environment. The ABC method combines with the management accounting system to create a sustainable accounting system. This system is considered as a management strategy that helps enterprises select useful environmental information to support decision-making such as saving costs through efficient use of materials and energy, reducing negative environmental impacts by supporting pollution prevention projects (Petcharat & Rachasima, 2009; Domil et al., 2011).

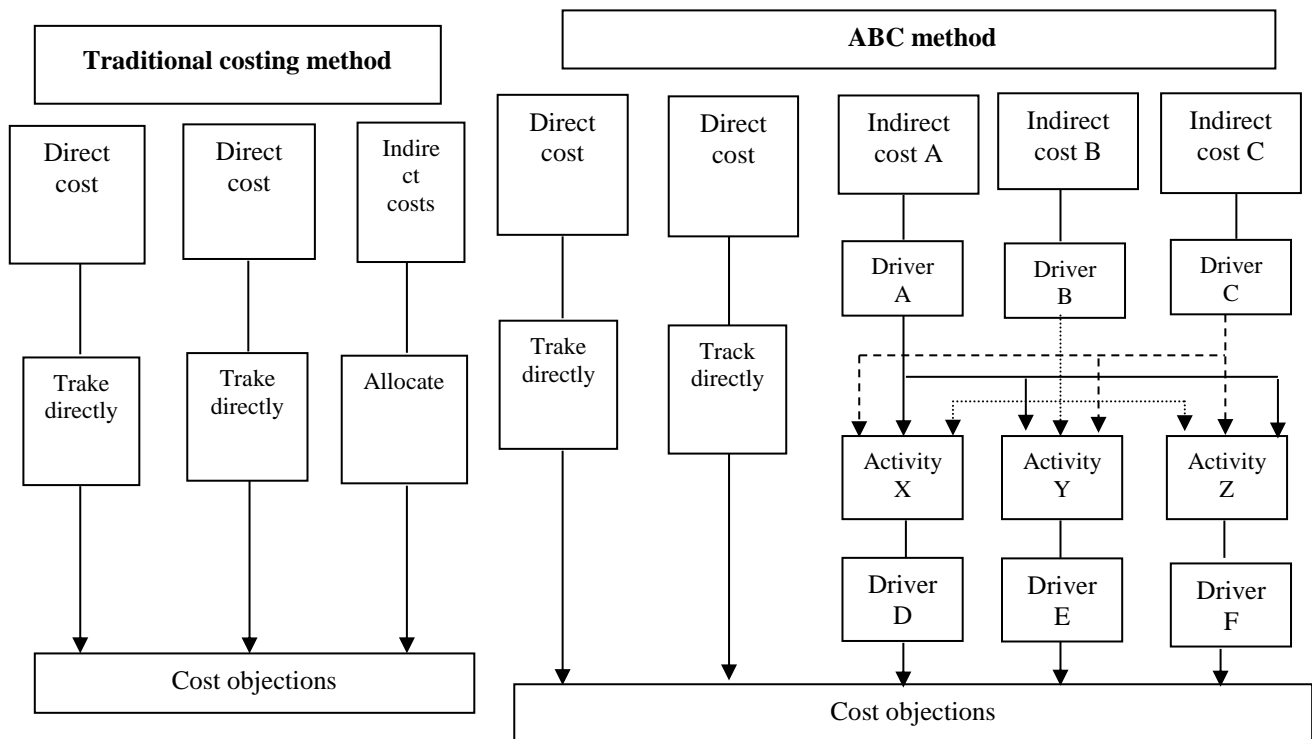
The ABC method tracks environmental costs to each product based on the activity therefore it generates more useful cost information and environmental costs hidden in overhead account will be identified. As a result, production cost is set up more accurately and activity driver will be key to measure activity aimed at reducing costs. In addition, Tsai et al. (2010) recommended that by linking environmental costs to the ABC system, the organization will have a good basis to determine which products need to be cut down and which materials need to be changed or which production process need to be adjusted.

Integrate ABC into the accounting system as the basis for environmental management objectives. This will help managers understand the information related to environmental performance and determine the percentage of environmental costs in total costs of product. Based on information provided by ABC method, managers make the right decisions related to product pricing, product design and performance evaluation (Capusneanu, 2008).

The studies concluded that in order to determine indirect environmental costs, firstly it is necessary to identify consumption resources, environmental activity and the relationship between environmental activity and resources used. When the above steps are completed, environmental costs can then be allocated to the product and the manufacturing process. Identifying relevant activities will help to provide a connection between the actual activities occurring in the enterprise and the costs from the resources requested for the activities. Each activity will require different resources (labor, materials, utilities, ...) and cover a range of costs involved. By looking at the activities and choosing the most accurate measure of the resources consumed, an enterprise can begin to allocate correctly resource costs to each activity. Meanwhile, the traditional cost accounting system ignores activities and allocates the costs to centres based on the simplest allocation basis such as the number of hours worked, the number of products output (Domil & Kreuze & Newell, 1994; Tsai et al., 2010). (Figure 1.1)

The ABC method is a useful technical tool to estimate production costs. However, this method requires more complex calculations than traditional accounting methods. Therefore, ABC method should be applied in certain conditions such as: Producing many kinds of products with the large number; the complex production process through many stages of production; environmental costs accounting for a significant proportion of total operating costs.

Fig. 1. Traditional costing method và ABC method



Source: USEPA, 2000

3. Research methodology

The case study was conducted at the brick manufacturing factory of Lam Son Joint Stock Company. The factory has over 300 employees and the annual capacity is 30 million brick tablets. Every year, the factory uses large amounts of natural resources (land, sand, coal, etc) and also causes many negative impacts on the environment such as solid waste,

waste water, emissions, dust, noise.

Two research objectives have been developed: understanding ABC method that measure environmental costs; Develop the ABC method in brick production enterprises to improve information for decision-making. Therefore, in-depth interview is considered as the main methodology for collecting data. Author interviews two subjects including management accountants and environmental managers.

The research find that environmental costs in the factory are are hidden in overhead accounts. Although current accounting system allows to create total operating cost, it is not easy to manage environmental cost information. Since environmental costs are associated with non-environmental costs, this will mask environmental costs. As a result, managers are not aware of environmental costs and the scope of environmental costs, and the opportunity to reduce environmental costs becomes difficult. Costs such as cost for pollution treatment and costs for pollution management will be reflected in overhead accounts of the enterprise including business management costs or general production costs. In common, the enterprise only allocates production costs into the cost objections while business management costs are not allocated.

Because environmental costs are contained in general accounts, this will limit changes to collect and allocate environmental costs to products. In addition, environmental costs are allocated to cost objections (products, production processes) through the use of a common allocation criterion (eg the number of products output). As a result, environmental costs have been separated from the products and activities that created them. Therefore, managers do not recognize the actual costs of the product because this costs are beyond their control. For example, the cost of waste disposal, which is quite high in building bricks but is low in face brick. And if this cost is allocated to the two types of bricks according to number of products output, it is unsuitable and can make erroneous decisions about production costs, product pricing, and ignore incentives to cut down costs. ABC method help to overcome the limitations of the traditional accounting approach which the factory is selecting. The factory will achieve benefits which not only increase financial performance but also improve the environmental efficiency.

4. Research Result

Current accounting system in the factory do not trace and track direct origin of environmental costs. Instead of this, environmental costs are collected and allocated to products or processes with simple allocation base. If environmental costs are small, this allocation does not seem significant. However, when environmental costs become important and departments in business contribute differently about resource, traditional allocation might send wrong signs to managers and affect to their decisions. Designing a suitable method which define and measure environmental costs is an important problem to help enterprise define environmental costs accurately and fully. This is basic to determine production costs, product pricing and is way to encourage cleaner production. Therefore, the study apply ABC method in the factory to collect, measure and allocate environmental costs

into products. Four stages in the method are:

Stage 1: Determine activity centre, environmental related performance

Activity centre in the factory need identifying such as pollution disposal activity, environmental management activity, etc. Each activity centre include many activities which have similarity. For example, pollution disposal activity centre consists of activity for waste water disposal, Activity for emissions and dust disposal, Activity for solid waste disposal.

Selecting suitable environmental activities by ABC method will allow the factory trace and track indirect environmental costs to cost objections accurately. Moreover, it help managers to control and manage costs effectively.

Stage 2: Classify environmental costs

ABC method is used to allocate environmental costs based on activities. Therefore, it is necessary to classify indirect environmental costs. According to activity, environmental costs are divided into seven categories:

- ***Costs for pollution disposal activity:*** Cost related to waste treatment at the end of the pipe and cost of compliance with environmental regulations such as: depreciation of waste treatment equipment (waste gas, dust, waste water, solid waste); Cost of maintenance of waste treatment equipment, cost for cleaning staff, cost for outsourcing of pollution treatment, environmental tax, waste discharge fee, etc.

- ***Costs for pollution prevention and resources recycling activity:*** These costs are called costs for clean technology such as: cost related to reduce environmental impacts in production process and costs to create improvement for purpose of environment including cost for using effective energy, water and materials, cost of equipment which to recycle resource and material and labor related costs

- ***Costs for Upstream/ Downstream activity:*** Cost for purchasing green materials, cost for supplying environmentally conscious products, cost for reducing environmental impacts of product containers and packaging stage, cost for recycling, resale and proper disposal of used products.

- ***Costs for environmental management activity:*** including cost of establishing an environmental management system as well as cost for certificating management systems, cost of staff training, cost of disclosing environmental information and environmental communication, cost of environmental protection such as landscape protection, tree planting, cost of fire prevention.

- ***Costs for research and development activity (R&D):*** cost for research and development to develop green products aimed at reducing environmental impacts; cost for research and development to curtail environmental impacts at the production stage, distribution stage and marketing stage of products

- ***Costs for social activity:*** The costs are incurred to build and maintain good relationships with stakeholders including: costs related to financial support for

environmental groups, local communities; costs of disclosing information about the environment. By maintaining good relationships with stakeholders, the enterprise can avoid unnecessary conflict and build an environmentally friendly image. As a result, it help the enterprise make opportunities for increasing profits in the future.

- *Costs for environmental remediation activity*: These costs include fee, tax, fine and compensation because of cause damage of health, assets such as: fines which do not comply environmental requirement; compensation of the third party as the result of loss or damage caused by pollution operations in past.

Stage 3: Define environmental activity and activity driver

Before allocating overhead costs for cost objections, we need to estimate the consumption of resource by the activities in the activity centres and define relationship between environmental performance and resource used. The connection between resource and activity driver will supply the understanding about what really happen in business and costs involved to resources. Table 1 shows seven activity centre of environment, environmental activities and activity driver for per activity.

Table 1. Environmental activity and activity driver

Activity centre	Environmental activity	Activity driver
1. Pollution disposal activity centre	Activity for disposal of emissions, dust	Volume of emissions, dust (kg)
	Activity for disposal of waste water	Volume of waste water (m3)
	Activity for disposal of solid waste	Volume of solid waste (tons)
2. Pollution prevention and resources recycling activity centre	Activity for using water effectively	Water input volume (m3)
	Activity for using energy effectively	Total energy input volume (J)
	Activity for recycling industrial waste	Volume of solid waste (tons)
	Activity for recycling harzardous waste	Volume of harzardous waste (tons)
3. Upstream/ Downstream activity centre	Green material purchasing procurement and methods	Number of purchasing material (no.)
	Additional activity for supplying environmentally conscious products	Volume of toxics (tons)
	Additional activity for reducing the environmental impact of containers and packaging	Volume of containers and packaging used (tons)
	Activity for the collection, recycling, resale and proper disposal of used products	Volume of products circulated after use (tons)
4. Environmental management	Activity for the implementation and maintenance of environmental management system	Time of using (hr)

Activity centre	Environmental activity	Activity driver
activity centre	Activity for disclosure of environmental information associated with business activities and environmental advertising	Time of using (hr)
	Activity for monitoring environmental impact	Number of internal control (no.)
	Activity for environmental training of employees	Time of training sessions (hr)
	Activity for environmental improvement such as nature conservation, tree planting, beautification and landscape preservation	Distribute proportionally based on revenue (VND)
5. Research and development activity centre (R&D)	R&D activity to develop products that contribute to environmental protection	Time of research and development
	R&D activity to curtail environmental impact in production stage	Time of research and development
	Another R&D activity to curtail environmental impact at the distribution stage and marketing stage of products	Time of research and development
6. Social activity centre	Activity for environmental improvement, including nature conservation, tree planting, beautification and landscape preservation	Distribute proportionally based on region space (m ²)
	Activity related to donation or financial support of environmental groups	Distribute proportionally based on revenue (VND)
	Activity associated with financial support for environmental conservation of local community	Distribute proportionally based on revenue (VND)
7. Environmental remediation activity centre	Activity to restore the natural environment back to its original state	Volume of waste water (m ³); Volume of contaminated ground (m ²)
	Activity for compensating environmental damages	Volume of waste (tons)
	Provisions or insurance fee to cover environmental incidents	Number of incidents (no.)

Source: General from the author

Stage 4: Allocate environmental costs to activities

Based on contribution of each activity to manufacturing process, environmental costs are allocated to activities (Unit cost per activity driver). As a result, we can define costs of each product according to activity drivers (shown in table 2). Therefore, activity driver is called allocation key.

Table 2. Allocate environmental costs to activities

Environmental activity	Activity driver	Total activity driver	Total cost (VND)	Unit cost per activity driver (VND)
Activity for disposal of emissions, dust	Volume of emissions, dust (kg)	870.746	21.530.556	24,73
Activity for disposal of waste water	Volume of waste water (m3)	384,83	32.819.848	85.284,02
Activity for disposal of solid waste	Volume of solid waste (tons)	56.530	53.356.749	943,87
Activity for using water effectively	Water input volume (m3)	0	0	0
Activity for using energy effectively	Total energy input volume (J)	0	0	0
Activity for recycling industrial waste	Volume of solid waste (tons)	179.521	61.828.827,61	344,41
Activity for recycling hazardous waste	Volume of hazardous waste (tons)	0	0	0
Green material purchasing procurement and methods	Number of purchasing material (no.)	0	0	0
Additional activity for supplying environmentally conscious products	Volume of toxics (tons)	0	0	0
Additional activity for reducing the environmental impact of containers and packaging	Volume of containers and packaging used (tons)	3.000.000	2.233.333	0,74
Activity for the collection, recycling, resale and proper disposal of used products	Volume of products circulated after use (tons)	0	0	0
Activity for the implementation and maintenance of environmental management system	Time of using (hr)	208	16.800.000	80.769,23
Activity for disclosure of environmental information associated with business activities and environmental advertising	Time of using (hr)	16	4.900.667	306.291,69
Activity for monitoring environmental impact	Number of internal control (no.)	6	4.500.000	750.000
Activity for environmental training of employees	Time of training sessions (hr)	8	3.600.000	450.000
Activity for environmental improvement such as	Distribute proportionally based on revenue (VND)	5.266.666.667	30.781.574	0,0058

Environmental activity	Activity driver	Total activity driver	Total cost (VND)	Unit cost per activity driver (VND)
nature conservation, tree planting, beautification and landscape preservation				
R&D activity to develop products that contribute to environmental protection	Time of research and development	70	1.600.000	22.857,14
R&D activity to curtail environmental impact in production stage	Time of research and development	70	1.600.000	22.857,14
Another R&D activity to curtail environmental impact at the distribution stage and marketing stage of products	Time of research and development	70	1.600.000	22.857,14
Activity for environmental improvement, including nature conservation, tree planting, beautification and landscape preservation	Distribute proportionally based on region space (m2)	0	0	0
Activity related to donation or financial support of environmental groups	Distribute proportionally based on revenue (VND)	0	0	0
Activity associated with financial support for environmental conservation of local community	Distribute proportionally based on revenue (VND)	0	0	0
Activity to restore the natural environment back to its original state	Volume of waste water (m3); Volume of contaminated ground (m2)	5.266.666.667	3.500.000	0,0007
Activity for compensating environmental damages	Volume of waste (tons)	384,83	20.000.000	51.971
Provisions or insurance fee to cover environmental incidents	Number of incidents (no.)	5.266.666.667	2.319.167	0,0004
Total			262.970.722	

Source: Brick production factory in Lam Son Company

After defining unit cost per activity driver, total cost of building brick and face brick are calculated following by activity driver (showed in table 3).

Table 3. Define environmental costs for each product

Activity	Activity driver	Unit cost per activity driver (VND)	Building brick		Face brick	
			Activity driver	Total cost (VND)	Activity driver	Total cost (VND)
Activity for disposal of emissions, dust	870.746	24,73	749.809	18.540.200	120.937	2.990.356
Activity for disposal of waste water	384,83	85.284,02	320,69	27.349.731	64,14	5.470.117
Activity for disposal of solidwaste	56.530	943.87	48.679	45.946.456	7.851	7.410.293
Activity for using water effectively	0	0	0	0	0	0
Activity for using energy effectively	0	0	0	0	0	0
Activity for recycling industrial waste	179.521	344,41	170.046	58.565.543	9.475	3.263.285
Activity for recycling harzardous waste	0	0	0	0	0	0
Green material purchasing procurement and methods	0	0	0	0	0	0
Additional activity for supplying environmentally conscious products	0	0	0	0	0	0
Additional activity for reducing the environmental impact of containers and packaging	3.000.000	0,74	2.583.333	1.923.148	416.667	310.185
Activity for the collection, recycling, resale and proper disposal of used products	0	0	0	0	0	0
Activity for the implementation and maintenance of environmental management system	208	80.769,23	98	7.915.385	110	8.884.615
Activity for disclosure of environmental information associated with business activities and environmental advertising	16	306.291,69	8	2.450.334	8	2.450.334
Activity for monitoring environmental impact	6	750.000	3	2.250.000	3	2.250.000

Activity	Activity driver	Unit cost per activity driver (VND)	Building brick		Face brick	
			Activity driver	Total cost (VND)	Activity driver	Total cost (VND)
Activity for environmental training of employees	8	450.000	4	1.800.000	4	1.800.000
Activity for environmental improvement such as nature conservation, tree planting, beautification and landscape preservation	5.266.666.667	0,0058	4.391.666.667	25.667.547	875.000.000	5.114,027
R&D activity to develop products that contribute to environmental protection	70	22.857,14	35	800.000	35	800.000
R&D activity to curtail environmental impact in production stage	70	22.857,14	35	800.000	35	800.000
Another R&D activity to curtail environmental impact at the distribution stage and marketing stage of products	70	22.857,14	30	685.714	40	914.286
Activity for environmental improvement, including nature conservation, tree planting, beautification and landscape preservation	0	0	0	0	0	0
Activity related to donation or financial support of environmental groups	0	0	0	0	0	0
Activity associated with financial support for environmental conservation of local community	0	0	0	0	0	0
Activity to restore the natural environment back to its original state	5.266.666.667	0,0007	4.391.666.667	2,918,513	875.000.000	581.487
Activity for compensating environmental damages		51.971	320,69	16.666.580	64,14	3.333.420
Provisions or insurance fee to cover environmental incidents	5.266.666.667	0,0004	4.391.666.667	1.933.862	875.000.000	385.305
Total cost				216.213.012		46.757.710

Source: Brick production factory in Lam Son Company

Table 4. ABC Method and traditional costing method

Production	ABC method (VND)	Traditional costing method (VND)	Difference (VND)
1. Building brick	216.213.012	131.485.361	84.727.651
2. Face brick	46.757.710	131.485.361	(84.727.651)
Total	262.970.722	262.970.722	-

Source: Brick production factory in Lam Son Company

5. Conclusion

Table 4 showed that in traditional costing method, building brick and face brick get same environmental costs. This might be an incorrect way to allocate some typical environmental costs. For example, hazardous waste disposal costs which may be high in building brick and low in face brick that applies fewer hazardous materials. In this case, the allocation of disposal costs according to traditional costing method would be inaccurate. If managers use information by traditional costing method, it will reduce motivation to make decisions toward to cleaner production.

In ABC method, environmental costs in building brick are more than in face brick because activity driver of building brick create less. Therefore, environmental costs of products in ABC method are more precise and managers in enterprises define activities which make environmental impacts more fully and correctly. As a result, they will make internal decision related to product pricing, investment, product design and technique changes.

Applying ABC method require staff who have high qualify and much experience. Besides, it is required to the close connection between management accounting department and environmental management department in collecting, measuring and allocating environmental costs. Therefore, to use the method effectively, it is necessary to conduct some following suggestions:

** Training management accounting and environmental management department*

Training not only provide the knowledge and skills to fully implement business operation but also ensure that the value of the organization is integrated into the thinking of the members. With the function of collecting, analyzing and providing environmental cost information, management accountants play a very important role in deciding the success of enterprises. Management accounting system can help to improve both financial and environmental performance. However, it is pointed out that the lack of active participation of accountants in the management of environmental activities led environmental costs not to collect and provide sufficiently and detailed. This can be explained by the limited knowledge and skills of ABC method.

Therefore, to practice ABC method, it is required that management accounting department have a thorough understanding of the ABC method otherwise the collection of information may be impeded. Even if the information is collected, it can not be used

effectively. Raising awareness and understanding of the management accounting department on environmental management is a very important mechanism for developing ABC method in brick production enterprises. Therefore, a standard definition of environmental costs as well as the ABC method framework should be clear understood from management accountants. They also needs to consider non-traditional activities such as research on manufacturing processes and activity of treating and managing wastes in the factory. Training not only creates opportunities for interaction among members of management accounting but also facilitates the exchange of knowledge with other departments and increases the understanding of the importance of sustainable development.

To help ABC application succeed, departments also have a common understanding of importance and usefulness of ABC method. Therefore, training program for all members in enterprises should be prioritized to help them better understand the link between business growth with environmental efficiency and establish a more detailed plan for ABC method practice.

** Improving the connection between accounting and environmental management department*

Findings show that the more closely accounting department and environmental management department are connected, the higher ABC application in brick production enterprises is. Therefore, a team of professionals should be established that includes environmental managers and management accountants, cost controllers to get a complete picture of environmental performance and related environmental costs. Because environmental staff are much knowledge about environmental issues such as flow of materials, information related to treating, handling and controlling environment. However, they have little knowledge of how to reflect those issues into the accounting system. In contrast, management accounting department play an important role in accessing and analyzing data, but they often have little understanding of the environmental issues that the enterprise is facing. As a result, management accountants do not often provide environmental information for decision-making fully. And it is clear that a closely linked relationship between management accounting and environmental management department is essential to track, calculate and allocate environmental costs accurately and completely.

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Using Management Accounting Information to Enhance Competitive Advantage for Enterprises in Vietnam

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Abstract

Management accounting information has an important role in supporting the managers to executive functions of planning, control, and decision - making. From there, managers will manage the resources of the firms better to enhance the competitive advantage to achieve outstanding firm performance than competitors. This study was carried out for the purpose of checking the relationship between the use of management accounting information and the competitive advantage of Vietnamese enterprises based on Resource-Based View. Results of data analysis from 279 enterprises in Vietnam shows that the use of management accounting information with the broad scope, timeliness, aggregation, and integration has a positive effect to the competitive advantage of the businesses in Vietnam. Since then, we have proposed several recommendations to enhance competitive advantage for Vietnamese enterprises in the next time.

Keywords: *Competitive advantage; Resource-Based view; The use of management accounting information; Vietnamese enterprises*

JEL codes: M41

1. Introduction

The Resource-Based View is an important theoretical framework to understand how the enterprises achieve the competitive advantage and how the advantage can be maintained stably over time (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993; Teece et al., 1997; Barney et al., 2001). More than 30 years, Resource-Based View has become a theoretical framework which has a strong influence on the development of the firm strategy. Therefore, the

accumulation of resources to promote the competitive advantage has become a platform for strategic thinking of many managers and scholars all over the world (Wu, 2010).

However, we find that there is little research which applied Resource-Based View in the field of management accounting information to explain that the use of management accounting information will contribute to improving competitive advantage for the firm. With the effort of searching, the authors found the research of Henri (2006) providing empirical evidence which shows that there is an indirect relationship between using the performance measurement system in a flexible manner and firm performance through boosting the capacity of the company (market orientation, organizational learning, entrepreneurship, and innovativeness). Based on Resource-Based View, the research results of Nguyen (2018) also shows that intermediary role of the level of using of management accounting information in the relationship between market orientation and the firm performance. However, the result variables in the previous studies are the firm performance. The relationship between the use of management accounting information and performance also has been demonstrated in several studies based on the Contingency theory (Mia and Chenhall, 1994; Chia, 1995; Chong, 1996; Chenhall and Langfield-Smith, 1998; Abernethy and Brownell, 1999; Agbejule, 2005 ; Cadez and Guilding, 2008; Doan, 2016; etc.). It is obvious that competitive advantage has been studied a lot in the studies of strategic management, but is rarely mentioned in the research of management accounting (Bruggeman and Van der Stede, 1993), except the research of Bruggeman and Van der Stede (1993) tried to explain the importance of the design of management accounting control system matching the strategy to create competitive advantage. Thereby, we found that the relationship between the level of using of management accounting information and competitive advantage is a research gap which has not been clarified. Therefore, this study will attempt to examine the direct relationship between the level of using of management accounting information and competitive advantage based on Resource-Based View.

In addition, there is little research which have been conducted to measure all four dimensions of management accounting information (including broad scope, timeliness, aggregation, and integration) which is proposed by Chenhall and Morris (1986), except the researchers of Agbejule (2005); Soobaroyen and Poorundersing (2008); Nguyen (2018). In fact, this is one of the main limitations of the majority of previous management accounting system studies, whereby they focus on one or two management accounting information dimensions. The scope was the most researched dimension because it supposedly represented an important aspect in the supply of management information to decision-makers, i.e. historical internal-focused vs future- and external-oriented. Some studies learnt about the relationship between management accounting information with broad scope and firm performance such as Mia and Chenhall (1994); Chong (1996); Mia and Clarke (1999); Naranjo-Gil and Hartmann (2007).

Some other studies only explored two of the four dimensions of the management accounting information. For instance, the research of Gul and Chia (1994), the authors only

focused on the two dimensions of management accounting information including scope and aggregation. Similarly, Fisher (1996) and Tsui (2001) chose to focus on the scope and timeliness of management accounting information. Therefore, this study will have the significant contribution to the system of management accounting information studies which still has many limitations of measuring the dimensions of management accounting information.

The remainder of this paper is structured as follows: Section 2 presents the theoretical framework, hypothesis development and research method. Section 3 discusses the research results. Finally, section 4 presents the conclusions and limitation of the study.

2. Theoretical Framework and Methods

2.1. The concepts

The use of management accounting information

Chenhall and Morris (1986) were first formalized the four main characteristics of management accounting information which are used in firms. Based on the four main characteristics, Agbejule (2005) adjusted into four dimensions to assess the level of using management accounting information in enterprises. The four dimensions are the scope (from narrow to wide), timeliness (from slow/standard to fast/customized to requests), aggregation (from aggregation to detail) and integration (from information of only a part to information integrated from many different parts and departments). In particular:

Firstly, the scope of management accounting information referring to the aspects of the concentration, measurement, and time (Larcker, 1981; Gordon and Narayanan, 1984). Management accounting not only provides information related to the external environment in economics (such as GNP, the total of market revenues and the market share of the company) but also provides the non-economic information (such as demographic factor, consumer taste, the action of competitors and the advancement of technology). Besides the monetary measurement, management accounting information with broad scope will include non-monetary measurement (Gordon and Miller, 1976). In addition, management accounting information with broad scope will provide the estimation of the probability of happening events in future (Chenhall and Morris, 1986).

Secondly, the timeliness of management accounting information refers to the period and the frequency of reporting information as the request of the managers systematically (Chenhall and Morris, 1986). Management's ability in quick responding to the events can be affected by the timeliness of management accounting information. In other words, the system of management accounting information which makes sure the timeliness will provide information about the latest events that occurred. This will help the management judge quickly and has the right decision-making.

Thirdly, management accounting information can be provided in many different aggregation forms from the supply of raw data without treatment to many different sets in the period or the concerned fields such as responsibility center or functional areas. An additional type of aggregation refers to summation in formats consistent with formal

decision models such as discounted cash flow analysis for capital budgeting, simulation and linear programming in budgetary applications, cost-volume-profit analysis, and inventory control models (Chenhall and Morris, 1986). In this study, the aggregation information is time and function aggregation (such as sale area, cost center, marketing and production parts) and the information is created specifically which is suitable to formal decision models in the enterprises.

Finally, integration refers to the interaction between the parts and departments in the enterprise through the sharing of information (Chenhall and Morris, 1986; Agbejule, 2005; Soobaroyen and Poorundersing, 2008). The exchange and sharing of information between departments are necessary because to make a decision, the management of part needs not only the information of their department but also the information of other departments (Chenhall and Morris, 1986; Calantone et al., 2002).

Competitive advantage

Competitive advantage is often conceptualized as the implementation of a strategy that does not simultaneously be made by any existing or potential competitors to facilitate cost reduction, the exploitation of market opportunity and/or avoidance of threats (Barney, 1991; Newbert, 2008). Refers to the competitive advantage, Barney (1991) and some other scholars such as (Smith et al., 1996; Wang and Ahmed, 2007) emphasized the sustainable competitive advantage. The authors agreed with the view of Li and Liu (2014) in suggesting that sustainable competitive advantage is difficult to achieve in the dynamic environment with the ongoing global financial crisis, climate change, and other worldwide problems. Therefore, in the study, the competitive advantage is seen as a state in which organizations face a dynamic environment and continuously provide products or services to satisfy customers better compared to competitors.

2.2. The Resource-Based View

Understanding the sources of competitive advantage has become a major area of research in strategic management. The Resource-Based View said that strategic resources are heterogeneously distributed across firms and that these differences are stable over time (Wernerfelt, 1984; Mahoney and Pandian, 1992; Amit and Schoemaker, 1993). Based on this assumption, the researchers gave hypothesis that when the companies own the resources that are valuable, rare, inimitable and non-substitutable (referred to as VRIN attributes), they can gain the sustainable competitive advantage by implementing the strategies of creating the new value which is different from competitors (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993; Conner and Prahalad, 1996).

The research applied the Resource-Based View to argue and prove that management accounting information (broad scope, timeliness, aggregation, and integration) is resource satisfying VRIN attributes. Therefore, enterprises which use information provided by management effectively will contribute to improving the competitive advantage of the business on the market.

2.3. Research hypothesis

The management accounting literature makes strong claims about the importance of how managers design and use management accounting system to support the implementation of organizational strategies (Kaplan and Norton, 1996). Abernethy and Brownell (1999) proposed that it is important to understand the style in which top management uses the management accounting system strategically. According to the research of Simons (Simons, 1990, 1994), some studies examined the positive role of management accounting information in the planning and implementation of strategies (Bromwich, 1990; Abernethy and Brownell, 1999; Chenhall and Langfield-Smith, 2003; Bisbe and Otley, 2004; Langfield-Smith, 2006). The studies all suggested that management accounting information has an important role in supporting management in the implementation of the functions of planning, control, and decision-making. From there, the management will manage their resources better in order to enhance the competitive advantage to achieve superior firm performance than competitors. It is the information with the *broad scope, timeliness, aggregation, and integration* (Chenhall and Morris, 1986).

Resource-Based View is the dominant perspective in the strategic literature (Newbert, 2008) and it tries to explain the difference in the firm performance among different companies in the same industry (Zott, 2003). Accordingly, the researchers argued that when the companies own the resources that are valuable, rare, inimitable and non-substitutable, they can gain the sustainable competitive advantage by implementing the strategies of creating the new value which competitors cannot easily achieve, thereby achieving outstanding firm performance compared to competitors in the same sector (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993; Conner and Prahalad, 1996). Is management accounting information with the broad scope, timeliness, aggregation, and integration considered as resource of the enterprise satisfying VRIN attributes?

Firstly, management accounting information is a valuable resource. Because management accounting supplies broad scope information including historical information and information-oriented future, financial and non-financial information related to the functional parts of the enterprise. From there, the managers at all levels can process information and learn to transform information into knowledge. The Knowledge-Based View suggests that learning in an organization is a valuable resource which can lead to competitive advantage (Grant, 1996). Moreover, according to Barney (1991), the resources are considered valuable to create a competitive advantage when it helps companies exploit opportunities and avoid threats. Clearly, management accounting provides not only internal information but also external information about markets, customers, and competitors etc. (Chenhall and Morris, 1986; Agbejule, 2005) to help the management analyze the opportunity and threats to bring out the right executive decisions. In other words, the use of broad scope information will support effectively for the management to make diverse decisions as strategic planning, product innovation, marketing strategy etc. to cope with situations in the environment of high volatility (Larcker, 1981; Gordon and Narayanan,

1984; Chong, 1996; Baines and Langfield-Smith, 2003). From the analysis above, we can assert that management accounting information is a valuable resource of the enterprise. Therefore, the first research hypothesis is proposed:

Hypothesis H₁: The use of broad scope management accounting information has a positive effect to the competitive advantage of the enterprises.

Secondly, management accounting information is a rare resource. Accounting information is inherently not rare but once the information is shared within the enterprise and developed into knowledge through learning is a unique resource of the enterprise which can create competitive advantage (Smith et al., 1996), from there it satisfies the rare condition. In the information age nowadays, the speed is the resource of rare competitive advantage for enterprises (Stalk, 1988). The former chairman of Intel, Andrew Grove said, “The speed is the only weapon we have” (Li and Liu, 2014). For example, when there is a sudden increase in the need of customers or the appearance of a new revolutionary technology, companies which have the ability to make timely decisions higher can catch these opportunities faster than the competitors; therefore, they can gain the greater competitive advantage. The second research hypothesis is proposed:

Hypothesis H₂: The use of timeliness management accounting information has a positive effect to the competitive advantage of the enterprises.

Thirdly, management accounting information is an inimitable resource. The Resource-Based View suggests that the longevity of competitive advantage depends deeply on the inimitable attribute of the resource (Barney, 1991). Although Barney (1991) argued that the management accounting techniques can easily be copied by competitors, he also said that the process of applying such techniques to generate information as well as the transition of management accounting information to knowledge depends on many other resources such as the experience of management, the culture of information sharing within the enterprise, etc. (Barney, 1991). These are the inimitable resource; therefore, companies can fully gain competitive advantage from the application of these management accounting techniques. The third research hypothesis is proposed:

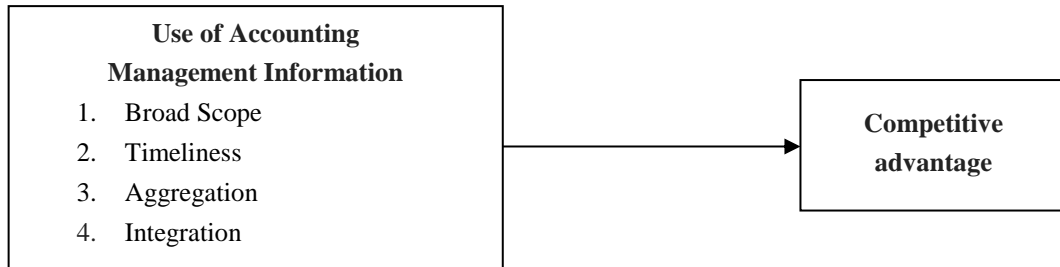
Hypothesis H₃: The use of aggregation management accounting information has a positive effect to the competitive advantage of the enterprises.

Fourthly, management accounting information is a non-substitutable resource. According to the Contingency Theory, there is not a management accounting information which is best for all enterprises (Gordon and Miller, 1976; Waterhouse and Tiessen, 1978; Otley, 1980; Chenhall and Langfield-Smith, 2003; Otley, 2016). The design of management accounting information depends on many contextual factors such as organizational size, organizational structure, production technique, business strategy, organizational culture, competitive pressure. (Waterhouse and Tiessen, 1978; Otley, 1980; Harrison, 1992; O'Connor, 1995; Langfield-Smith, 2006). This proves that management accounting information is a non-substitutable resource. Therefore, the fourth research hypothesis is proposed:

Hypothesis H₄: The use of integration management accounting information has a positive effect to the competitive advantage of the enterprises.

From the analysis above, we can see that the management accounting information is valuable, rare, inimitable and non-substitutable which contributes to create the competitive advantage for enterprises.

Fig.1. Research model



(Source: Authors' synthesis)

2.4. Research method

Sample

In the context of Vietnam, this study conducts to collect data through survey method. The extensive literature review is the basis for developing an initial list of items to measure the components of the concepts. Then, in order to modify the measurement items, this study carries out interviews three CEOs and three chief accountants from six different firms. For the pre-test, firstly, we choose five lecturers who have expertise in management accounting from the universities to examine whether these revised measurement items are both necessary and sufficient. And the next step is conducting a pilot study involving 35 firms (each firm with one respondent) to test the efficiency of the questionnaire.

After we had completed the questionnaire, we sent to the respondents. The respondents were selected through the convenient sampling method. With the research needs, the respondents should be middle or senior managers (including the CEO, CFO, general manager, the head and deputy of departments) and chief accountant, general accounting and accountants who have been working in the Vietnamese enterprises for over one year to ensure a full understanding of the firm, helping to enhance data quality. Firstly, the authors email the questionnaire to the respondents that the authors know or know through other social relationships. Besides, the authors collect email addresses on the companies' website and send the link of the questionnaire to them. We sent the questionnaire survey to more than 500 email addresses in which for each enterprise, we chose only one representative who is manager or accountant of enterprise. Before sending them the questionnaire survey, we made a call for informing. Every three weeks, we continue to send an email of the reminder to the email addresses which have not responded to remind them to answer. After four times of reminder, we have collected 283 respondent emails, in which 279 surveys were completed forms and were used for data analysis. Regarding 279 respondents, managers account for 65.6% and accountants make up 34.4 %. The number of respondents who are managers are more than accountants. This result is suitable because the

study finds out about the relationship of using accounting management information and competitive advantage of firm. Thus, manager is the person who is most suitable representative to answer the questionnaire survey. In terms of type of enterprises, private enterprises account for 24.7%, limited liability companies make up 33%, joint stock companies are amounted to 42.3%. With regard to the size of enterprises, large size enterprises is approximate 25%, the remainder is small and medium enterprises. As regards operation time, there is more than 80% enterprises has been operating over five years.

Variable measurement

As mentioned in section 2.1, the proxy for characteristics of management accounting information is developed by Chenhall and Morris (1986) and also used by, among others, Mia and Chenhall (1994); Chong (1996) etc. Many years later, Agbejule (2005) adjusted the scale of Chenhall and Morris (1986) to more suitable in measuring the level of using management accounting information in enterprises in developing countries. The scale of Agbejule (2005) was used by Soobaroyen and Poorundersing (2008) and Nguyen (2018) to measure the level of using management accounting information in enterprises. Accordingly, the level of using of management accounting information consists of 4 dimensions: the broad scope, timeliness, aggregation, and integration. Therefore, in this study, we inherit the scale adjusted by Agbejule (2005) to measure the level of using management accounting information in Vietnamese enterprises. In particular, the broad scope information (labelled BROA) is measured by four items; timely information (labelled TIME) is measured by four items; aggregated information (labelled AGGR) is measured by three items; integrated information (labelled INTE) is measured by four items (the details can see in Table 2).

Previously, most studies used secondary data to measure competitive advantage in which ROA and Tobin's Q are common proxy (Li and Liu, 2014). However, some studies indicated that competitive advantage can be measured by subjective data (Dess and Robinson, 1984; Powell, 1992; Spanos and Lioukas, 2001). The fact that in Vietnam, on one hand, to get such series data is somewhat difficult for the lack of such database; on the other hand, firms may be not willing to provide their financial data. Therefore, this study measures competitive advantage (labelled ADVA) through the designed available questionnaire. Specifically, respondents were asked to give their assessment of 6 items (both financial and non-financial) compared to competitors in the same industry including the higher growth rate of profit, the higher growth rate of sales revenue, the lower operating costs, the better product and service quality, the increase of market share, the attraction of more new customers (Newbert, 2008; Li and Zhou, 2010; Chang, 2011) (the details can see in Table 2).

All the items were included in the questionnaire survey with the Likert scale of 5 levels which indicate the level of agreement of the respondents with the statements. In particular: (1) Completely disagree; (2) Do not agree; (3) Be neutral; (4) Agree and (5) Completely agree.

3. Results and Discussion

3.1. Assess the reliability of scale

The reliability test result of Cronbach's Alpha shows that the scale of the factors achieves reliability (Cronbach's alpha coefficient greater than 0.7). The item-total correlations of the scales are higher than allowed (greater than the cut-off value 0.3). Thus, all scales are included in the exploratory factor analysis (EFA) in the next step.

Table 1. Cronbach's Alpha

	<i>N of item</i>	<i>Cronbach's Alpha</i>	Corrected Item-Total Correlation
BROA	4	0.756	0.471
TIME	4	0.771	0.454
AGGR	3	0.859	0.704
INTE	4	0.733	0.467
ADAV	6	0.848	0.514

(Source: The result of data analysis)

3.2. The exploratory factor analysis (EFA)

The result of the exploratory factor analysis of the independent components from 15 items with Varimax rotation extracts 4 components. The total variance explained (TVE) is 63.947% (with Eigenvalues = 1.381 > 1) which indicates that the 4 components can explain 63.947% the variability of the data. The Kaiser- Meyer-Olkin (KMO) index = 0.884 satisfies the condition of $0.5 \leq \text{KMO} \leq 1$. The Bartlett test with the significance level of 0.000 less than 0.05 shows that the exploratory factor analysis of the independent components is appropriate.

Table 2. Rotated Component Matrix^a

	Item	Component			
		1	2	3	4
TIME4	Reports are provided frequently on a systematic, regular basis, e.g., daily reports, weekly reports.	.772			
TIME3	There is no delay between an event occurring and the relevant information being reported to you.	.760			
TIME1	Requested information arrives immediately upon request.	.705			
TIME2	Information supplied to you automatically upon its receipt into information systems or as soon as processing is completed.	.703			
AGGR2	Information on the effects of events on particular time periods (e.g., monthly/quarterly/annual summaries, trends, comparisons, etc.		.897		
AGGR1	Information in forms, which enable you to conduct what if analysis.		.868		
AGGR3	Information in formats suitable for input into decision models (such as: discounted cash flow analysis or incremental/marginal analysis).		.841		

	Item	Component			
		1	2	3	4
BROA3	Non-economic information, such as customer references, relations, attitudes of government and consumer bodies, competitive threat.			.830	
BROA4	Information that relates to possible future events			.775	
BROA2	Non-financial information that relates to production and market information such as growth share etc.			.688	
BROA1	Information on broad factors external to your organization, such as economic conditions, population growth, technological developments, etc.			.584	
INTE2	Presence of precise targets for each activity performed in all sections within your department.				.825
INTE3	Information that relates to the impact that your decisions have on the performance of other departments.				.730
INTE4	Information on the impact of your decisions through out your business unit, and the influence of other individual's decision on your area of responsibility.				.664
INTE1	Cost and price information of departments of your business unit.				.662

(Source: The result of data analysis)

Do the same with the dependent variable, the analysis result shows that the Kaiser-Meyer-Olkin (KMO) index of the competitive advantage is 0.797 with the significance level of the Bartlett test is 0.000. This indicates that the exploratory factor analysis of the dependent component is suitable. The total variance explained (TVE) is 57.741% (with Eigenvalues = 1.381 greater than 1), so it explains quite good the variability of the data.

Table 3. Component Matrix^a

	Item	Component
		1
ADVA6	Compared with our competitors, we have more new customers	.847
ADVA4	Compared with our competitors, we have the better product and service quality	.805
ADVA5	Compared with our competitors, we have the increasingly higher market share	.781
ADVA3	Compared with our competitors, we have the lower operating costs	.758
ADVA1	Compared with our competitors, we have the higher profit growth rate	.705
ADVA2	Compared with our competitors, we have the higher sales revenue growth rate	.646

(Source: The result of data analysis)

3.3. The result of regression analysis

The result of regression analysis as follows: R-Square is 0.358 and adjusted R-Square is 0.348. this means that the characteristics of management accounting information explained 34.8% of the variation of the competitive advantage. The Durbin-Watson statistic is 1.897 ($1 < 1.897 < 3$) implies no autocorrelation in the model.

Table 4. Coefficients^a

Model	Unstandardized		Standardized		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1 (Constant)	.386	.263			1.470	.143		
BROA	.188	.067	.160		2.824	.005	.730	1.369
TIME	.309	.057	.298		5.395	.000	.768	1.302
AGGR	.216	.044	.248		4.927	.000	.925	1.081
INTE	.154	.054	.156		2.874	.004	.797	1.254

a. Dependent Variable: ADVA

(Source: The result of data analysis)

The result in Table 4 shows that the use of management accounting information with the broad scope, timeliness, aggregation, and integration has a positive effect on the competitive advantage of the enterprises in Vietnam. The result is entirely consistent with our initial expectation when we analyze the Resource-Based View theory and is similar to the results of the studies conducted by Mia and Chenhall (1994); Chia (1995); Chong (1996); Agbejule (2005); Soobaroyen and Poorundersing (2008); Doan (2016) etc. The order of level influence of the factors on the competitive advantage as follows:

Firstly, the use of management accounting information in time has the strongest positive impact on the competitive advantage with $\beta = 0.298$ (sig. greater than 0.05). The research result again confirms the important role of providing timely management accounting information because the ability of management in the quick responding to the volatility of the market is affected by the timeliness of management accounting information (Chenhall and Morris, 1986). In the environmental uncertainty, the management needs to react quickly. Therefore, the information with timeliness is an important factor leading to the increase in firm performance (Chenhall and Morris, 1986; Soobaroyen and Poorundersing, 2008).

Secondly, the use of management accounting information with aggregation has the second strongest positive impact on the competitive advantage of enterprises with $\beta = 0.248$ (sig. greater than 0.05). Indeed, the use of aggregated information helps the management to process information adequately and effectively to cater for the planning, control, and decision-making (Soobaroyen and Poorundersing, 2008). Using aggregated information helps businesses make a decision quickly, reduce the cost of information processing, be more accurate in decision-making, from there it brings enterprises more advantages in decision-making compared to competitors.

Thirdly, the use of management accounting information with broad scope has the third strongest positive impact on the competitive advantage of enterprises with $\beta = 0.160$ (sig. greater than 0.05). Using both information of the events in the past and the events forecasted in the future, both financial and non-financial information, both internal enterprise information and external enterprise information related to the market, customers and competitors etc. will support usefully for the management to make diverse decisions such as planning, strategy, product innovation, marketing strategy, etc. to respond to the environmental uncertainty with high volatility (Gordon and Narayanan, 1984; Chong, 1996; Baines and Langfield-Smith, 2003).

Finally, the use of management accounting information which is integrated from many different parts and departments also has a positive impact on the competitive advantage of enterprises with $\beta = 0.156$ (sig. greater than 0.05). The exchange and sharing of information between departments are necessary because to make a decision, the managers of a part need the information of not only their department but also other departments (Chenhall and Morris, 1986; Calantone et al., 2002). For example, the experience of the marketing department of the customer can be valid for the research and development department in the development of products or services which are suitable to the taste of customers (Moorman and Miner, 1998).

4. Conclusions and Policy Implications

Based on the Resource-Based View, research has analyzed and confirmed that management accounting information is the resource which satisfies VRIN attributes. According to Barney (1991), these enterprises which use efficiently VRIN resources will likely improve the competitive advantage in the market. From the result of the study, to enhance competitive advantage in the intense competition and high volatility environment today, businesses need to have a plan to build and perfect the system of management accounting information to provide information with the broad scope, timeliness, aggregation, and integration. This helps the management make the decisions of business activities control rightly. Thus, the study result once again confirms the role of management accounting information in supporting the management to perform the functions of planning, control, and decision-making. In addition, the study result also contributes to the filling of the research gap on the relationship between the use of management accounting information and competitive advantage of Vietnamese enterprises.

Any studies will exist some certain limitations and our study is the same. Firstly, the sample size is quite small ($n = 279$) and is chosen through the convenient method, so it may not be high representative for the population. Secondly, this study only considered the relationship between the use of management accounting information and the competitive advantage of enterprises basing on the view of Resource-Based View. Some studies in the future may combine both the Contingency theory and the Resource-Based View to study the use of management accounting information which is suitable to types of various business strategies to bring competitive advantage for Vietnamese enterprises. Thirdly, this study does not include firm control variables which can affect the relationship between the use of

management accounting information and competitive advantage. Thus, the further studies may examine to the control variables such as size, firm age, corporate ownership, industry category, geographical region and so on. Fourthly, the respondents' perceptions of enterprises have an advantage over their competitors in the same industry, which is not assess accurately about their competitive advantage. The next researchs will be more meaningful if researchers use the actual data on the company's financial statements and compares it with the competitor. Finally, this study employs static and cross-sectional data, which has inevitable drawbacks in reflecting the function and evolution of the use of management accounting information and competitive advantage. The use of panel data may be the future direction of following-up studies.

In summary, however, we believe that the results of the empirical study reported in this paper support the importance of management accounting system and suggest that the managers should use management accounting information with the broad scope, timeliness, aggregation, and integration in order to enhance the competitive advantage of their firms. Furthermore, we believe that the Resource-Based View is useful to explain that management accounting information is VRIN resources and it is an antecedent of the competitive advantage of the firms on the market.

5. References

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Realising Organizational Benefits from Enterprise Resource Planning: Which Stage is Important?

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Abstract

Over the past several years, the concerns about Enterprise Resource Planning (ERP) is huge in terms of both academic and practical in Viet Nam. Despite the widespread adoption of ERP systems, many companies can not achieve the expected benefits from ERP. This might result from the fact that most concerns about ERP in Vietnam have focused on the implementation stage, and ignore the post-implementation stage in which the actual benefits and performing improvements are realised. This paper tries to investigate the important stage in ERP cycle to realise the benefits to help the organization achieving the expected benefits from ERP. In this paper, the descriptive statistics of quantitative methodology are used to analyse data from a survey of 58 CFOs and chief accountants in the companies which have implemented the ERP for more than one year. The expected contribution of this paper to the current literature of the benefits of ERP systems is finding out which stage is important to realise organizational benefits from ERP.

Keywords: *ERP, Implementation stage, Organizational benefits, Post-implementation stage*

JEL codes: *M15, M41*

1. Introduction

Enterprise Resource Planning (ERP) systems have been confirmed as a useful tool for improving and maintaining competitive advantage of companies in the globalised market under ever increasing competition. ERP systems integrate and support all the major

processes of a company such as accounting, finance, manufacturing and human resource management, by providing an unified platform of database and business applications (Chang, 2006). Most market-leading ERP systems are usually equipped with best practices so that, by simply implementing the systems properly, the companies can effectively improve their business processes (Amoako-Gyampah and Salam 2004).

For the above reasons, ERP has been the most popular choice for information system at companies in over the world. However, the implication of ERP market is 10 to 15 years later in Vietnam than the market in Europe and America. For over the years, most of ERP projects in Viet Nam have been focused on ERP functionality such as Finance, stock control and purchase control, and mainly been implemented by large companies. Currently, the ERP market in Vietnam has developed rapidly and been implemented by companies in the same sector. Many companies have implemented ERP in the Beverage industry, such as Hue beer company, Carlsberg beer company; Confectionery industry as Kinh Do, Bibica; in the Textile industry as the Garco 10 JSC, Savimex company; in the Retail industry as Mobile World Corporation, Tran Anh... A lot of companies have implemented ERP and greater competition will facilitate the development of ERP.

With this popularity, there have been many academic studies about ERP from various perspectives in the world (Moon 2007, Tingting Huang and Kazuhiko Yasuda 2016). In Viet Nam, there has few studies about ERP, most of articles about ERP are to summarize the experience in implementing ERP, discuss about determinants of the success or failure of implementing ERP in Viet Nam, or find out the impact of ERP systems on the management and business performance of the company.

However, despite the practical and academic interests in ERP, many companies still suffer from not being able to gain the expected benefits from it. Some companies even face the threat of bankruptcy from the huge capital investment and unsuccessful implementation (Stein et al. 2003, Muscatello and Parente 2006). A study by Deloitte also pointed out that, in a survey of 64 Fortune 500 companies, 25% suffered from poor performance of ERP in the post-implementation stage (Muscatello and Parente 2006). In Viet Nam, many companies can not achieve the expected benefits from ERP, although consuming a lot of cost, time and human resource for this system.

To address the problem, this paper attempts to elucidate ERP benefits realisation along the ERP stages. According to literature review, most articles about ERP benefits focus on implementation stage, and ignore the post-implementation stage. Although the post - implementation stage in which the actual benefits and performance improvements has been realised (Muscatello and Parente 2006), not much attention has been paid to research here (Moon 2007, Tingting Huang and Kazuhiko Yasuda 2016). For example, the study by Moon (2007) shows that of all the surveyed articles on ERP published in 79 journals between 2000 and 2006, the majority deal with either implementation issues or specific areas in the use of ERP. The other study similarly which based on articles from Google Scholar, Science Direct, ACM, IEEE Xplore, and JSTOR, also points out that investigation of ERP at the post-

implementation stage is very scarce (Tingting Huang and Kazuhiko Yasuda 2016). It is especially difficult to find articles that provide benefits and how to realise these benefits in the post-implementation stage of ERP. Hence, this study aims to show empirically that additional efforts are required for finding out the implementation has decided entire organizational benefits received from the ERP system or not? Does the post - implementation play a role in realising the benefits of ERP?

This article is structured as follows. First, we present the literature review of the article. Second, we describe the theoretical background on ERP benefits and ERP life - cycle. Before analysing the results, the research methodology is presented in the third part. Finally, we present some conclusions and further work.

2. Literature review

Benefits realisation management is an important approach to ensure that projects and programs deliver what they promise. However, in IS research, little attention has been paid to this important step. In this step, we will introduce the trend of researches in ERP and the articles about an ERP benefits, ERP stages.

The trend of researches in ERP

According to Moon (2007), base on a review of work published in various journals on the topics of Enterprise Resource Planning (ERP) between January 2000 and May 2006, with a total of 313 articles from 79 journals, the major research topics in ERP are (1) implementation, (2) using ERP, (3) extension, (4) value, (5) trends, and (6) education. Therein, the number of articles categorised as “Implementation” is the most, over 40% of the total. The number of articles categorised as “ERP value” is quite few, only 24 articles equivalent 7,6% of the total.

Another research of Tingting Huang and Kazuhiko Yasuda (2016), total 86 literature reviews have been accumulated and categorized into three main categories and five sub-categories of literature reviews. Among 86 papers, 14 papers belong to the category of overall, ten papers belong to the category of assorted, and the category of dedicated contains 62 papers. Among the 62 papers, 22 papers go to critical factors, nine papers go to SMEs, four papers go to field approach, 24 papers go to operating themes, and three papers go to type of ERP. In ERP research field, the topics in the post-implementation phase are heating up recently but still in its initial stage. Although more and more research mentions the post issues, few of them will take post issues as their major research object.

Therefore, we can see that the research about ERP benefits, especially in the post-implementation stage, is the research area need to conduct.

An ERP benefits

Because of benefits to organizations, many businesses have spent the big expenses for ERP system and hope to receive benefits in the future. However, according to Petra Schubert and Susan P. Williams (2009), identifying the benefits from the implementation of the ERP system is still a significant challenge for both research and practice. The authors

pointed out that although many framework about the benefits of ERP have been taken into consideration, such as the framework of Peter B Shari Shang & Seddon (2002), O'Leary (2004), Lorraine Staehr (2007); there exists certain restrictions in these frameworks. Specifically, these frameworks do not clarify the different contexts, the type and nature of the benefits of ERP and the changes that may occur from this benefit. Therefore, the research on the benefits ERP brings companies is always an interesting topic.

Spathis and Constantinides (2004) suggested that the most important benefits for accounting due to ERP implementation were increased flexibility in information generation, increased integration of accounting applications, improved quality of reports – statement of accounts, improved decisions based on timely and reliable accounting information and reduction of time for closure of annual accounts. The other research has focused on the benefits derived from ERP adoption has shown that the implementation of these systems is usually followed by improvements of the decision-making process and enterprise integration (Colmenares, 2009). Furthermore, Brazel and Dang (2008) suggested that ERP implementation appears to reduce reporting lags. Gattiker and Goodhue (2004) analyzed the benefits that a company which had implemented an ERP system was experiencing. They pointed out that the system resulted in many benefits for the organization such as improvements in coordination within the enterprise, and eliminations of reports and data entry chores.

In this research, we will apply the framework about the benefits of ERP in Peter B Shari Shang & Seddon (2002) as the theoretical foundation for our study. It is a framework is cited a lot in researches about ERP. Based on an analysis of the features of enterprise systems, on the literature on information technology (IT) value, on data from 233 enterprise systems vendor-reported stories published on the Web and on interviews with managers of 34 organizations using ES, the framework provides a detailed list of benefits that have reportedly been acquired through ES implementation. The ERP benefits found were classified into five benefit categories:

- (1) operational;
- (2) managerial;
- (3) strategic;
- (4) IT infrastructure; and
- (5) organisational

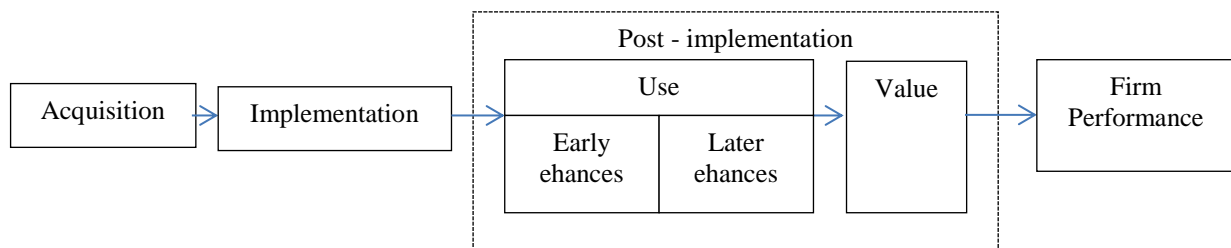
Therein, Operational benefits arise from the automation of business process. Managerial benefits arise from better planning and management of organizational resources and better monitoring of financial performance of products, for example. Strategic benefits result from the ERP system's ability to support business growth and competitive advantage. IT infrastructural benefits mainly come from the reduction of IT costs related to the maintenance of legacy systems. The organizational benefits are related to the system enabling business learning and staff empowerment.

However, in this framework, the ERP benefits are not linked to the reasons for implementing ERP, or to determine at what point in time the various benefits are expected to materialise.

ERP stages

Many studies have tried to find out the stages of the life-cycle of the ERP system. The phases of the ERP life-cycle consist in the several stages that an ERP system goes through during its whole life within the hosting organization. They are the following: adoption decision phase, acquisition phase, implementation phase, using and maintenance phase, evolution phase and retirement phase (Jose M. Esteves and Joan A. Pastor, 1999).

Fig. 1. The stages of the ERP life-cycle



Source: Jose M. Esteves and Joan A. Pastor, 1999

In the other studies, the process of achieving additional benefits from an ERP implementation is referred to as “second wave” implementation (Deloitte, 1999). Deloitte (1999) believed that there are a number of phases that occur post-implementation. In the “stabilise” phase, companies familiarise themselves with the implementation and master the changes which have occurred. The “synthesise” phase is where companies seek improvements by implementing improved business processes, adding complimentary solutions, and motivating people to support the changes. The final stage, “synergise”, is where process optimisation is achieved, resulting in business transformation.

The notion of different stages of ERP implementation is reinforced by Nolan and Norton Institute (2000), who grouped implementations into levels of maturity. They argued that when evaluating costs of an ERP implementation, the company’s previous experience with ERP systems should be considered. Their maturity classifications were:

- beginning – had implemented SAP in the past 12 months;
- consolidating – had implemented SAP for between one and three years; and
- mature – had implemented SAP for more than three years.

Therefore, we can see the post - implementation stage includes using and maintenance phase, evolution phase till the retirement phase, is the “second wave” implementation and would be either in the “consolidating” or “mature” stages. In this stage, the actual benefits and performance improvements resulted from the ERP system are realised. Unfortunately, many researchers focus on the implementation stage and ignore this stage. The basic underlying premise of most of these studies is that the success of ERP is largely determined by the initial implementation.

To fill the gap in literature, this study focuses on the post-implementation stage, while it does not deny the importance of the initial implementation success. The implementation does play a very important role, because it can determine the quality of the installation and affect the atmosphere of the organisation (Hong and Kim 2002). The failure of the implementation can result in run over of budget and time, unstable installation or an unfavourable organisational attitude towards the system.

The study will investigate which stage is important to realize organizational overall benefits from ERP, the implementation stage or the phases of the post-implementation stage include the stabilise phase, the synthesise phase and the synergise phase.

3. Theoretical framework

Chaos theory

Chaos theory relates to some non-linear, dynamical systems that exhibit apparently erratic or random behavior even though the system has limits and contains no random variables. Chaotic systems are generally noted for their sensitivity to initial conditions that result in vastly different outcomes.

Chaos is somewhat counter to the notion of complete determinism, that every event or action is an inevitable result of preceding events or actions - and can be predicted, in advance, with absolute certainty. With the fundamental principle that no real measurement can be infinitely precise, chaotic systems will have unpredictable outcomes because initial conditions cannot be specified with infinite accuracy. Moreover, initial condition imprecision in dynamic systems will grow at an exponential rate. This sensitivity to initial conditions is generally called chaos in mathematics and physics.

Chaotic systems are deterministic within limits and not forever expanding or contracting; they tend to “orbit” around one or more points, called attractors. A related area of chaotic systems involves fractals.

A practical implication of chaos theory is that two nearly-identical sets of initial conditions for the same system may result in significantly different outcomes, albeit within limits.

Adopting Chaos theory to this research, benefits which an ERP system brings to companies is not an inevitable result of preceding initial implementation success. In different stages of an ERP system, the benefits received might be different. Moreover the benefits maybe is not as companies expected in the beginning in the post-implementation stage. Therefore, finding out the benefits which ERP system brings to the companies in each stage is very important.

4. Methodology

Data collection

In line with the goal of the study, the companies have implemented the ERP system for more than one year were considered as the targets of data collection. Questionnaires were

sent to 150 companies. It was required that the questionnaire should be answered by a person working for ERP at CFO or chief accountant position in the companies. Each company has only one questionnaire. E-mails were sent to the target companies. The response rate was very high, about 40%. In total, 62 answers were collected. From the 62 samples, 4 companies were excluded because they have been running ERP for less than 1 year at the time of the questionnaire. Data from the remaining 58 samples were used as the data for this study.

Data analysis

The descriptive statistics was used. Using likert scale 5 points, where 1 means ‘low’ and 5 ‘high’, people surveyed were asked to rate their perception, the authors check an average ERP benefits percentage for each benefit dimension in each ERP stage: implementation stage and the phases of the post-implementation stage include the stabilise phase, the synthesise phase and the synergise phase.

5. Results

Table 1. Descriptive Statistics

Descriptive Statistics					
ERP benefits dimension	N	Implementation stage	Post-implementation stage		
			Stabilise phase	Synthesise phase	Synergise phase
1. Operational	58	2.80	3.33	4.80	4.80
2. Managerial	58	3.33	4.70	4.90	4.90
3. Strategic	58	2.00	3.80	4.00	4.90
4. IT infrastructure	58	4.80	4.80	4.80	4.80
5. Organisational	58	2.80	3.33	4.50	4.80
Valid N (listwise)	58				

Table 1 displays the results of our survey, presenting the each ERP benefit demension realisation percentage in each stage. Comparing with the research objectives in the Introduction section, we can conclude that the implementation stage has not decided entire organizational benefits received from the ERP system, it just realises IT infrastructure benefits dimension. The findings suggest that all the ERP benefits dimensions are realised in the post-implementation stage, especially in the synthesise phase and the synergise phase. So, the post-implementation stage plays the most important role in realising the benefits of ERP.

Next, we discuss each of these ERP benefits dimensions in more detail:

- Operational: the benefits from the automation of business process have just been realised in the Post-implementation stage, but mainly in the synthesise phase and the synergise phase of the Post-implementation stage. In the Implementation stage, we could not see these benefits.

- Managerial: the benefits from better planning and management of organizational resources and better monitoring of financial performance of product could be seen clearly in all phases of the Post-implementation stage. In the Implementation stage, the opinion of people surveyed is neutral. Some companies see these benefits at the beginning after initial implementation success while the others have to wait for the Post-implementation stage to realise it.

- Strategic: The findings suggest that benefits from the ERP system's ability to support business growth and competitive advantage are realised in the Post-implementation stage. In the Implementation stage, we could not see these benefits.

- IT infrastructure: the benefits from the reduction of IT costs is these only benefits realised in 2 stages: Implementation stage and Post-implementation stage.

- Organisational: The findings suggest that in this dimension, all the organisational benefits are realised in the Post-implementation stage, but mainly in the synthesise phase and the synergise phase of the Post-implementation stage. In the Implementation stage, we could not see these benefits.

6. Conclusion

This research study tries to find out the important stage in ERP cycle to realise the benefits to help the organization achieving the expected benefits from ERP. The findings from our paper have shown us the post-implementation, especially the synthesise phase and the synergise phase, is the most important stage in realising the benefits from the ERP system, not the implementation stage.

This analysis suggests that ERP benefits realisation dimensions are interconnected, and business managers should perceive ERP benefits realisation as a continuum cycle along the ERP cycle. They should not only focus on the implementation stage, although the success of the initial implementation is very important, the benefits of ERP system cannot be seen at this stage, most of the benefit is in the Post- Implementation.

This study also contributes to the existent theory and practice on IS evaluation by taking into account a time perspective on benefits realisation. The limitation of this study is small data and we have just used the descriptive statistics, a simple statistics tool. In future work, we will use a bigger data and statistics tools which are more intensive to make clear about this subject. In practical terms, the result of this study can help many companies in Viet Nam and developing countries like Viet Nam where ERP is still a new subject realise the right important stages to gain the expected benefits from the ERP system, such as if the companies want to reach the benefits in operational dimension, they need to focus on the synthesise phase and the synergise phase in the post-implementation stage, if they want to reach the benefits in IT infrastructure dimension, the success of the initial implementation will bring it.

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Evaluation of Knowledge and Skills of ULSA Accounting Graduates in the Globalization Period

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Abstract

Facing the challenges of global economic integration, the quality of accountants is considered a prominent issue in schools having bachelor's in accounting programs. Equipping students with accounting knowledge and skills is critically essential to enable students to find jobs, increase their competitiveness and meet the requirements of integration. The research was conducted on 482 fourth-year accounting students of the University of Labour and Social Affairs (ULSA) to assess the current state of accounting knowledge and skills of students in relation to the output standard, compared to the National Qualifications Framework of Vietnam and the Standards framework of Southeast Asian countries. The results showed that, basically, the knowledge and skills of the accounting students of the ULSA are at the level of applicability. However, they need to acquire additional knowledge to catch up with international standards such as preparing and presenting international financial statements, professional ethics, social responsibilities. Additional skills need to be acquired by students to adapt with globalization are respecting others' cultures, adaptability in multicultural environment, independent and professional working style.

Keywords: *Accounting graduates; Integration; Knowledge; Skills.*

JEL code: A

1. Introduction

Joining the ASEAN Economic Community (AEC) of Vietnam poses many challenges in terms of supplying highly qualified human resources to compete with other countries in the region. Improving the quality of human resources training to meet the needs of employers is a matter of primary concern of universities and training institutions. According to statistics from the National Institute for Vocational Education and Training,

Vietnam's exported labor force currently has low and medium skills compared to that of the AEC while the AEC community only focuses on highly skilled workers. In addition to professional knowledge, the ability to communicate in foreign languages, using computers and other soft skills such as teamwork, information processing, reporting are essential in the workplace. According to a report of World Bank (2014), the most lacking skills of high-level human resources in Vietnam is the ability to work in groups, communicate and use English.

In AEC integration, accounting is one of the field having transitional service agreements. Given the challenges of economic integration in general, AEC in particular, the quality of accounting human resources is considered a prominent issue in order to improve competitive capacity with highly qualified labor in the region and the world. Thereby, bachelor's in accounting programs in universities needs to make changes to meet the requirements of highly qualified accounting personnel in integration period. Recognizing this problem, schools having bachelor's in accounting programs need to adjust the content and training programs in order to improve knowledge and focus on developing skills for students to meet work requirements. In this context, equipping students of ULSA with the accounting knowledge and skills is critical to prepare students for job search, increase the prestige of the university.

The research was conducted on 482 fourth-year accounting students of the University of Labor and Social Affairs to assess the current knowledge and skills of students, compared to the National Qualifications Framework of Vietnam and the standards framework of Southeast Asian countries.

2. Theoretical Framework and Methods

2.1. Theoretical Framework

Knowledge refers to theoretical and practical understanding of a certain subject (HR Sharly Lauby). People can acquire knowledge from the process of education, training and from the processes of life. For students, knowledge emphasizes the product obtained through the training processes at schools. Schools, basing on the necessary knowledge for students, divide the knowledge into specialized knowledge and other knowledge. With accounting students, specialized knowledge is accounting knowledge. The specialized knowledge of accounting students is equipped to carry out the organizing of the accounting information system. In addition to specialized knowledge, other knowledge such as social knowledge, economics are also essential for students.

Skills are proficiencies or special abilities of an individual in one or more aspects used to deal with situations emerging in life. Hard skills are competence, professional capacity or, in other words, the amount of knowledge students accumulate when they are trained in their accounting profession. Soft skills are skills that help people manage, lead themselves and interact with the people around them to make their lives and jobs become efficient.

Vietnam joined the Asian Economic Community (AEC) showing the deeper international economic integration that poses many challenges in accounting bachelor training. Thus, studies on the quality of bachelor's training in the globalization period attracted much attention from scholars.

Dang Ngoc Hung et al. (2016) conducted a study on accounting training at Hanoi University of Industry on aspects such as training programs, teaching staff, facilities, graduation results, the proportion of graduates who have immediate employment. With feedbacks from 55 accounting students, in which, 48 students with immediate employment are the basis for a good assessment of the knowledge and skills of the training program. The authors also proposed suitable solutions for accounting training in Vietnam when attending the AEC.

In other research of Truong Thanh Hang et al. (2016), basing on the opinions of 100 university accounting teachers, the results show that the training programs and teaching methods were the main subjects that lectures are interested and need to be adjusted to meet accounting training in the trend of integration.

With the same result, Doan Ngoc Phi Anh, Le Thi Na (2016) suggested that the training programs and teaching methods are important factors in professional accounting and integration training. The training program should be based on international training standards, supplementing the learners' actual access. Innovative teaching methods contribute to the additional soft skills for students. The research on the quality of training accounting bachelors in the integration period is receiving great attention in Vietnam.

In the trend of integration, the knowledge and skills of accounting graduates should be acquired in accordance with the National Qualifications Framework of Vietnam, with reference and compared to some countries in Southeast Asia such as Malaysia, Indonesia, Philippine. Details are explained as follows:

In term of knowledge: Accounting graduates must meet the requirements of basic knowledge in following areas (i) Social sciences, political sciences and laws; (ii) Practical and theoretical knowledge in the field of accounting, including core technical background (basic knowledge of the major) and advanced technical knowledge (specialized knowledge); (iii) Knowledge of information technology; (iv) knowledge of planning, organizing and monitoring in the specific fields of activities; (v) Basic knowledge of management and operation of professional activities. Depending on the training objectives of each school, knowledge specifically developed in the training program must meet the following general requirements:

- Knowledge of general sciences: General socio-economic knowledge such as politics, socio-economic development policy of the country; Knowledge of using key economic analysis tools and indicators.

- Basic knowledge of the major: Basic knowledge in economics, business administration, monetary finance, business law, competition law, labor law, international environment and international harmony in accounting.

- Specialized knowledge: Knowledge of Accounting Law, Accounting Standards; Methods and techniques for collecting and processing information to meet users' needs; Knowledge to help managers make decisions, manage the business effectively; Organizing the accounting system; Corporate audits; Professional ethics.

In term of skills: Meeting personal, occupational skills, and qualities; Communication skills; Skills of initiating ideas, implementing and operating the system in the business and societal context, in particular:

- Hard skills: Accounting graduates are required to possess professional skills; communicate in English (Level 3 out of 6 of the Vietnamese Foreign Language Proficiency Framework); be proficient in office software, accounting software; be able to work as a team in a dynamic business environment and international integration.

- Soft skills: High sense of responsibility at work; capability of forming ideas, designing, deploying and implementing plans in the context of competition and international integration.

2.2. Methodology

2.2.1. Sample

The survey was conducted on 482 fourth-year accounting students, graduates of bachelor of accounting programs, and students in the graduating process. Total number of ULSA fourth year students of Accounting Faculty is around 700, based on the formula of 95% confidence, error of 5%, sample size needed is 249. Number of students actually answer the questionnaire is 482, satisfying the condition and ensuring overall representativeness (Hair et al., 1998).

The questionnaire consists of 3 parts: (i) Assessment of knowledge; (ii) Assessment of skills; (iii) Personal information. The results of the survey were sent to the students and processed through analysis tool SPSS 20 to assess the current status of knowledge and skills of accounting students, thus comparing with the required level in accordance with the National Qualifications Framework, the ASEAN Framework and Owlia et al. (1996). The structure of the survey sample by gender is shown in Table 1.

Table 1. The structure of Survey sample by gender

Characteristics		Number of students (SV)	Percentage (%)
Genders	Female	290	60.2%
	Male	192	39.8%
Total		482	100%

(Source: survey results)

Among 482 fourth-year students participating in the survey, 290 students were female, accounting for 60.2%, male students accounted for 39.8%. The survey was conducted when all those students had completed their specilized subjects and were in the

internship period so that the research objects were appropriate to evaluate the knowledge and skills equipped by the school.

2.2.2. Description of scales

The scales measuring knowledge of graduating students according to current standard of the school are 6-point scale in which 0 = Having no knowledge, 1= Having knowledge; 2 = Understanding; 3 = Ability to explain; 4 = Ability to analyze, synthesize; 5 = Ability to evaluate. Similarly, evaluation of graduates' skills is measured by Likert 5-point scale: 1= Ability to imitate; 2 = Ability to participate in practice; 3 = Ability to apply; 4 = having done practice or implementation; 5 = Ability to guide others. The meanings of measurement scales are shown in Table 2.

Table 2. Meanings of measurement scales of knowledge and skills

Scales	Level	Meanings of knowledge's measurement scales	Meanings of skills' measurements scales
0	Having no knowledge	Having no relative knowledge	Having no knowledge of certain skills
1	Having knowledge	Ability to recall information acquired before	Ability to imitate
2	Having understanding	Understanding the meaning of information, and be able to explain, infer, summarize.	Ability to participate in practice
3	Ability to explain	Ability to apply known information to a new situation or new conditions.	Ability to apply
4	Ability to analyze and synthesize	Ability to analyze information to show relationship between details and the whole	Having done practice or implementation
5	Ability to evaluate	Ability to give comments, judgment to information based on standards, criteria	Ability to guide others

(Source: Hanoi University of Industry)

First, means of Likert 5-point scales were calculated, then description statistics was conducted by evaluating means as follows: $Distance = (Maximum - Minimum) / n = (5-1) / 5 = 0.8$

Meaning of each level is explained as follows:

1.00 – 1.80: Having knowledge

1.81 – 2.60: Having understanding

2.61 - 3.40: Ability to apply

3.41 - 4.20: Ability to analyze and synthesize

4.21 - 5.00: Ability to evaluate

According to the National Qualifications Framework of Vietnam and referring to frameworks of the Southeast Asian countries, the attainment level of knowledge and skills of Accounting graduates must be achieved through the training process are shown in Table 3.

Table 3. The levels of knowledge and skills used for assessment

Contents	Basis of comparison
I. Knowledge	
1.1. General socio-economic knowledge	
Legal general knowledge	Level 3 (Mean = 2.61-3.40)
The policy direction and development orientation of Vietnam	
Knowledge of tools and indicators of economic analysis	
1.2. Basic knowledge of the sector	
Business law, economic law, labor law	Level 4 (Mean = 3.41-4.20)
Basic knowledge of finance, currency, statistics	
Knowledge of marketing, business culture, investment	
Knowledge of corporate governance	
1.3. Specialized knowledge	
Vietnamese and international accounting laws, accounting standards	Level 5 (Mean = 4.21-5.0)
Methods of collecting and processing information to meet users' needs	
Information analysis supporting decisions making of managers	
Knowledge of organizing accounting system, accounting information	
Knowledge of information technology application in accounting	
Knowledge of corporate audits	
II. Skills	
2.1. Socio-economic skills	
Accessing to specialized sciences in accordance with the level of training	Level 4 (Mean = 3.41-4.20)
Applying law in solving economic problems	
Applying natural sciences in solving basic economic problems	
2.2. Skills of implementing enterprises' activities	
Financial planning skills, compiling statistics, taxation in business operations	Level 4 (Mean = 3.41-4.20)
Skills related to marketing, business culture, establishing, monitoring business activities	
Skills related to corporate governance	
2.3. Accounting skills	
Conforming with the accounting laws and accounting standards	Level 5 (Mean = 4.21-5.0)
Providing information in accordance with the accounting laws and accounting standards	

Contents	Basis of comparison
Implementing an accounting information system that meets the requirements of corporate governance	
Skills of using accounting software	
Skills of joining and coordinating with audit organizations	
2.4. Perceptual skills	Level 4 (Mean = 3.41-4.20)
Skills of writing and presentation of reports	
Basic computer skills and using office applications	
Foreign language skills	
Analysis skills: discovering and analyzing problems, problem solving skills	
Assessment skills: self-assessment of knowledge, required skills at work	
Ability to participate in studying, continuous learning at work	
2.5. Behavioral skills	Level 4 (Mean = 3.41-4.20)
Ability to adapt to new circumstances, having action plans, thinking creatively	
Cooperating with colleagues, negotiating, discussing and defending personal views	

(Source: compilation of authors)

Evaluation of knowledge

General socio-economic knowledge: Accounting graduates need to acquire general socio-economic knowledge at a minimum level of 3 which means "Ability to explain". At this level, students have gained the understanding and can explain the basic legal issues in general, directions and development policies of Vietnam, improve the ability to contribute effectively to the development of the community.

Basic knowledge of the sector: This is foundation for students to continue their basic and specialized subjects. The minimum level of basic knowledge of the sector that each student needs to achieve is level 4: "Ability to analyze and synthesize". At level 4, students have a solid background to continue studying and researching basic and specialized subjects.

Specialized knowledge: Accounting graduates need to acquire specialized knowledge at level 5: "Ability to evaluate". Accordingly, each graduate student must master accounting knowledge and apply knowledge to solve problems arising in the accounting work of enterprises or other organizations. At this level of proficiency, students can apply the knowledge they have learned to work independently, instruct others to do the identified tasks.

Evaluation of skills

Skills of each accounting graduate are also assessed through scales that reflect the attainment levels of skills. Similar to the indicators of knowledge, the indicators of skills are derived from the National Qualifications Framework of Vietnam and Southeast Asian countries including personal skills, occupational skills and qualification of an accounting graduate.

Socio-economic skills: Accounting graduates applying and practicing in accordance with the level of training, should reach level 4 "Ability to analyze and synthesize".

Skills related to implementing activities of enterprises: With these skills, accounting graduates need to achieve level 4 "Ability to analyze, synthesize", in which, there may be skills in performing specific tasks and skills needed solve complicated issues.

Accounting skills: Accounting graduates should reach level 5 "Ability to evaluate", namely ability to communicate problems and solutions to others in the workplace, ability to evaluate the quality of work after completion and performance of team members.

Perceptual skills: Accounting graduates should be at level 4 which is "Ability to analyze and synthesize", in which there are ability to practice and implement, having foreign language skills of 3/6 according to foreign language framework of Vietnam

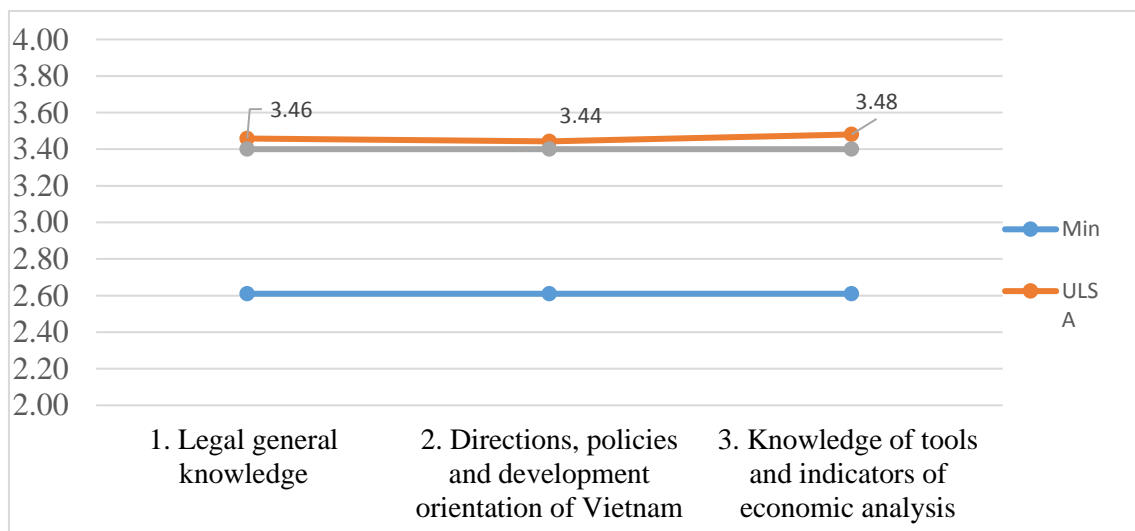
Behavioral skills: Accounting graduates should be at level 4 which is "Ability to analyze, synthesize" with practical skills, using alternatives in changing environmental conditions.

3. Results and Discussion

3.1. Evaluation of knowledge

General socio-economic knowledge

Fig. 1. Comparing attainment levels of general socio-economic knowledge



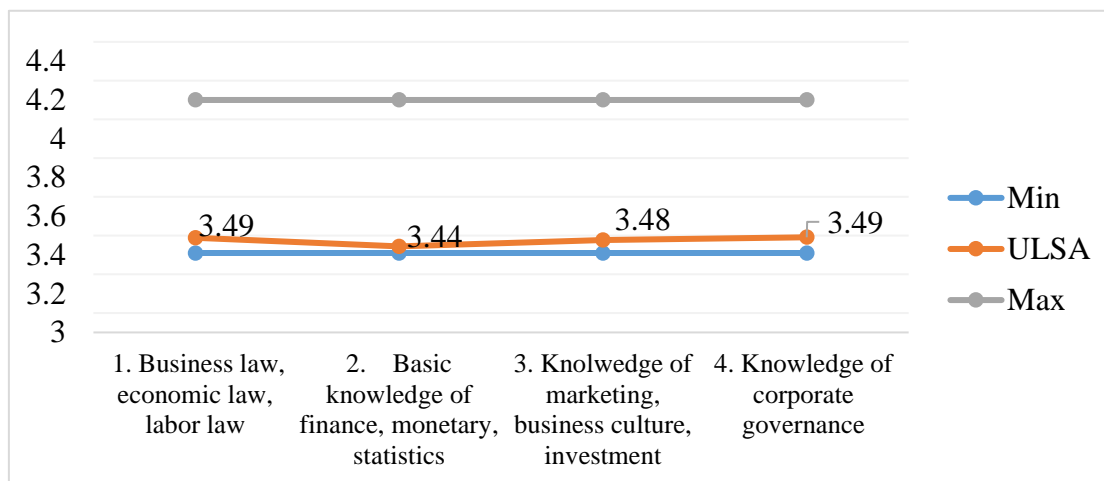
(Source: Compiling from the research results)

According to National Qualifications Framework of Vietnam and ASEAN, knowledge should be acquired at level 3 "ability to apply" (mean from 2.61 to 3.40). The students of ULSA achieved the higher level (mean from 3.44 to 3.48). This result showed

the focus in training of the university in order to equip students with general socio-economic knowledge, supporting their future career.

Knowledge of implementing enterprises' activities

Fig. 2. Comparing levels of achieving knowledge of enterprises' activities

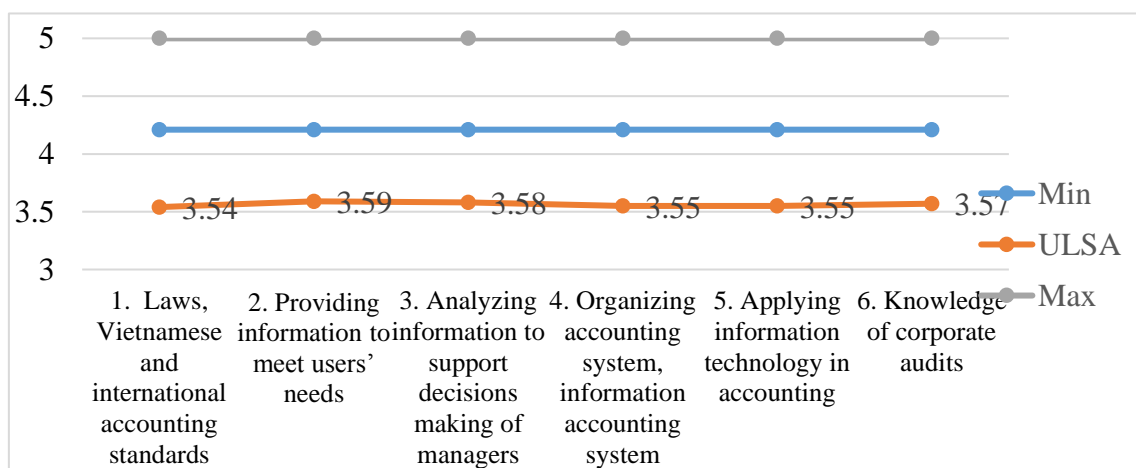


(Source: Compiling from the research results)

Figure 2 shows that the requirement of the National Qualifications Framework of Vietnam and ASEAN is level 4 in terms of basic knowledge of the sector which means "ability to analyze and synthesize" with the mean from 3.41 to 4.20. In fact, the attainment level achieved by accounting students of ULSA ranged from 3.44 to 3.49, within the range of level 4. Although students achieved higher level of attainment in corporate governance and business law, however, in general, students have reached the minimum level of attainment in analysis and synthesis according to National Qualification Framework of Vietnam and ASEAN. This shows that the trend of focusing in knowledge of implementing enterprises' activities of Vietnam and ASEAN in training programs to meet the requirements of integration.

Accounting knowledge

Fig. 3. Comparing attainment levels of accounting knowledge



(Source: Compiling from the research results)

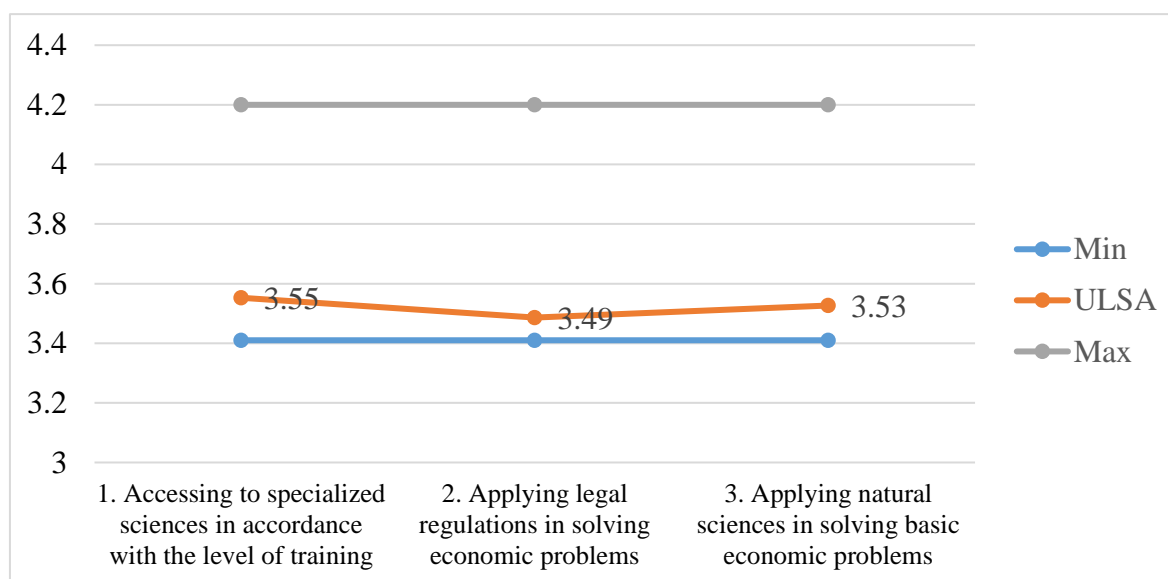
The attainment level in accounting knowledge of ULSA's students compared with the National Qualifications Framework of Vietnam and ASEAN in Fig. 3 shows that the requirements of Vietnam and ASEAN about the attainment level of specialized knowledge are relatively high. Students should be able to make judgments, comments about information based on norms and regulations (Level 5), while students of ULSA only reached the level of analysis and synthesis (mean from 3.47 to 3.54).

In general, students of ULSA were able to apply general knowledge and knowledge of implementing enterprises' activities. With specialized knowledge, students were able to analyze and synthesize. When comparing these results with the National Qualifications Framework of Vietnam and ASEAN, students got higher attainment level in understanding and applying general knowledge, attainment level in the basic knowledge of the sector is acceptable but attainment level in accounting knowledge is lower. Specially, students lacked of some specialized knowledge which is necessary to catch up with integration trend such as preparing financial statements according to international standards, preparing consolidated financial statements, professional ethics and English.

3.2. Evaluation of skills

Socio-economic skills

Fig. 4. Comparing attainment levels in socio-economic skills



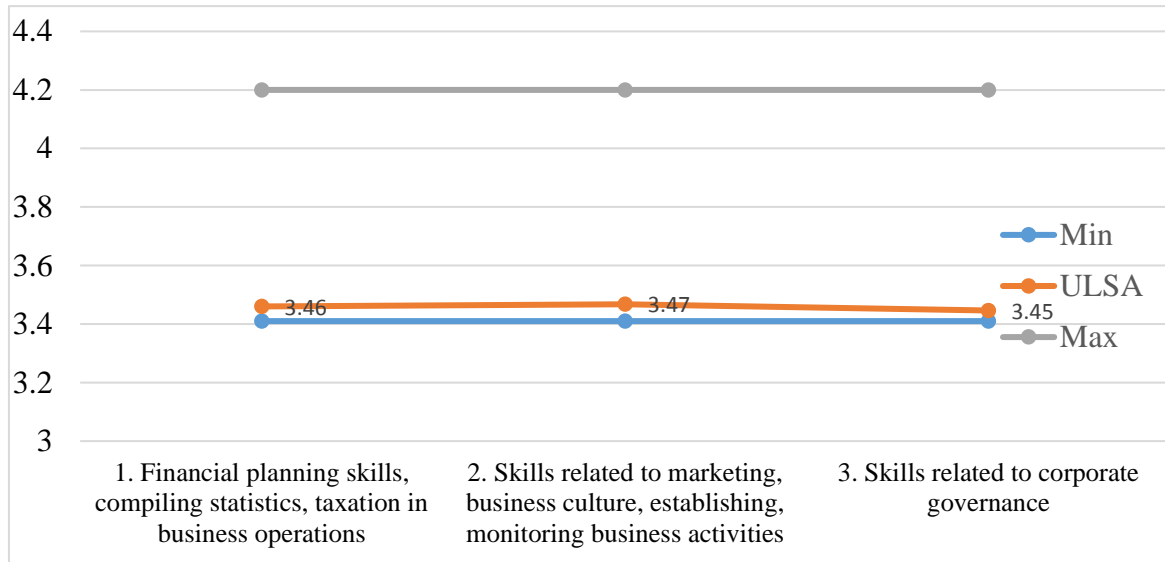
(Source: Compiling from the research results)

Regarding the current state of socio-economic skills of students, Figure 4 shows that the standard level in these skills of the National Qualifications Framework of Vietnam and the ASEAN's Framework is Level 4 (having done practice or implementation with mean from 3.41 to 4.2). The level achieved by ULSA's students satisfied this level and ranged from 3.49 to 3.55. Skills of applying legal regulations in solving economic problems varied the most with mean = 3.49 while skills of accessing to specialized sciences in accordance with the level of training had the least variation with mean = 3.55.

Skills of implementing enterprises' activities

Compared with the National Framework of Vietnam and the ASEAN's Framework, students of ULSA achieved level 4, which means level of having done practice or implementation. However, mean's value is relatively modest, closed to the minimum, mean from 3.45 to 3.47 (Fig. 5).

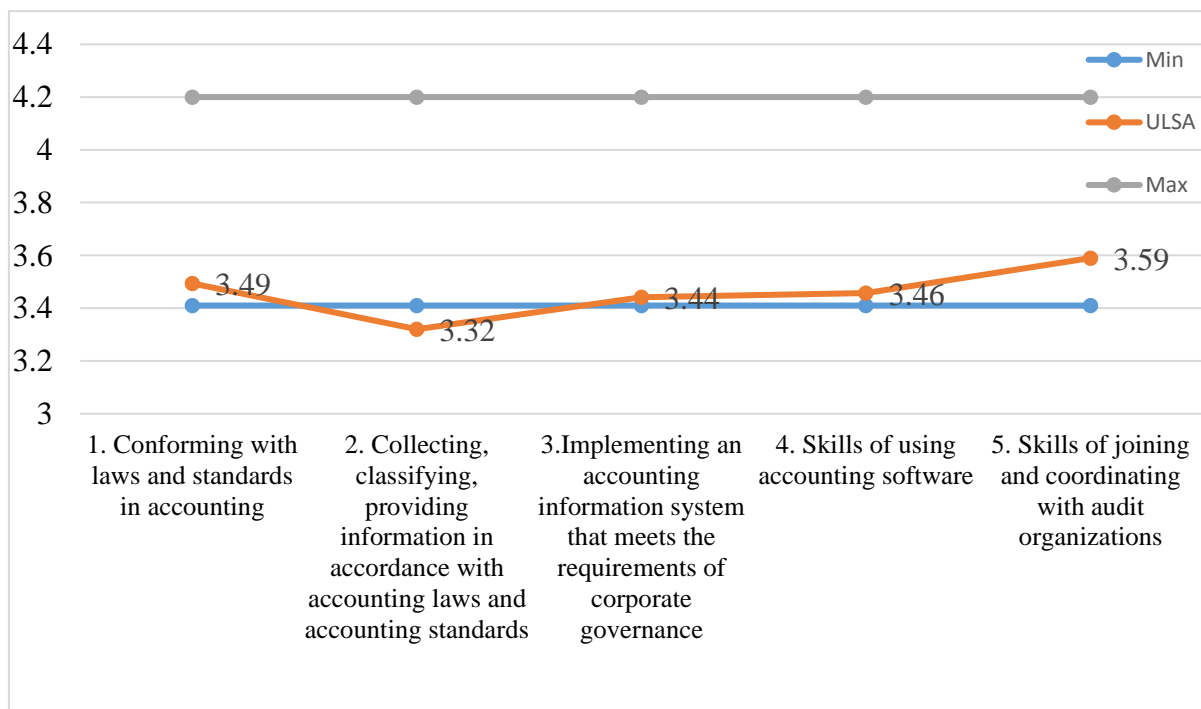
Fig.5. Comparing attainment levels of skills related to implement enterprises' activities



(Source: Compiling from the research results)

Accounting skills

Fig. 6. Comparing attainment levels of accounting skills

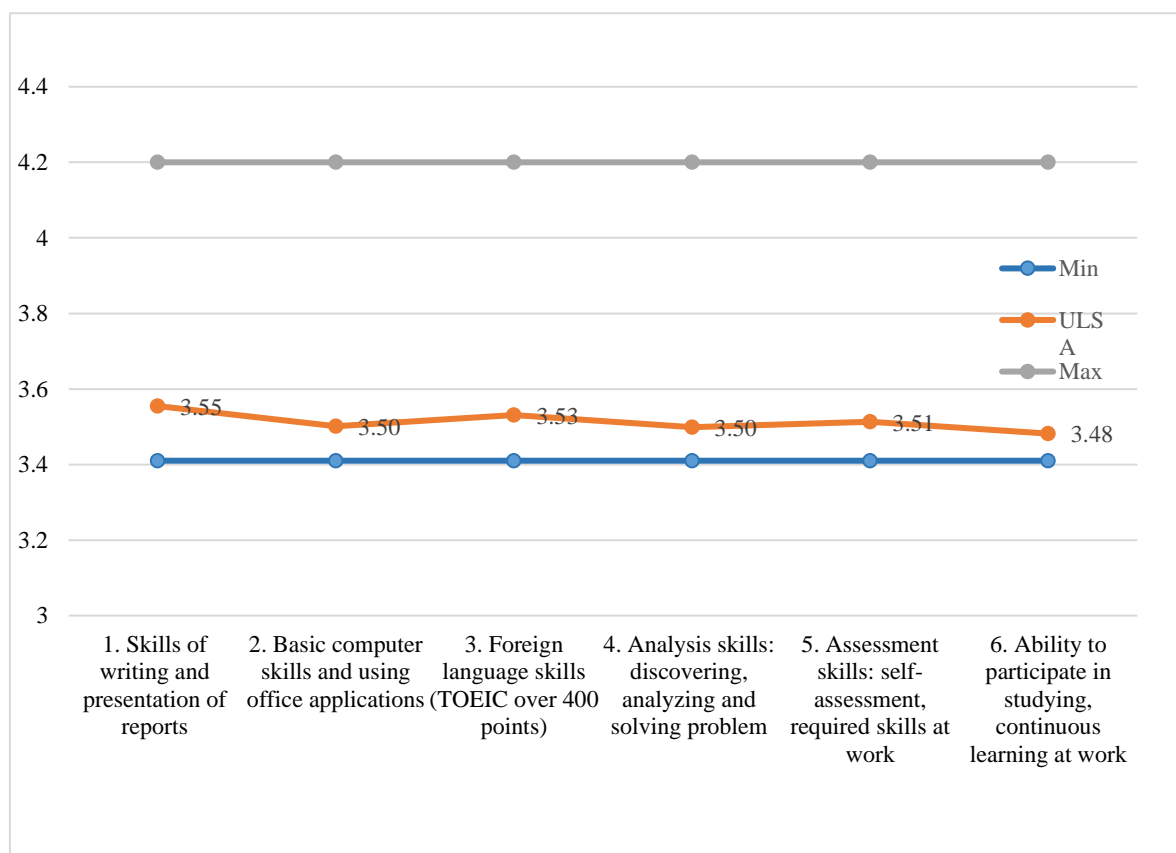


(Source: Compiling from research results)

The National Qualifications Framework of Vietnam and the ASEAN's Framework require accounting skills to be level 4 (having done practice or implementation with mean from 3.41 to 4.2). Compared with the attainment level of accounting students of ULSA, it can be seen that students has reached this level, with a mean from 3.44 to 3.59. However, the level of practicing and implemetation has value of mean near the lowest level. The highest variation is the skills of collecting, classifying and organizing accounting information in accordance with the laws, accounting standards (mean = 3.32), reaching level 3 "ability to apply" and the lowest variation is the skills of collaborating with the audit organizations (mean = 3.59).

Perceptional skills

Fig. 7. Comparing attainment levels of perceptional skills

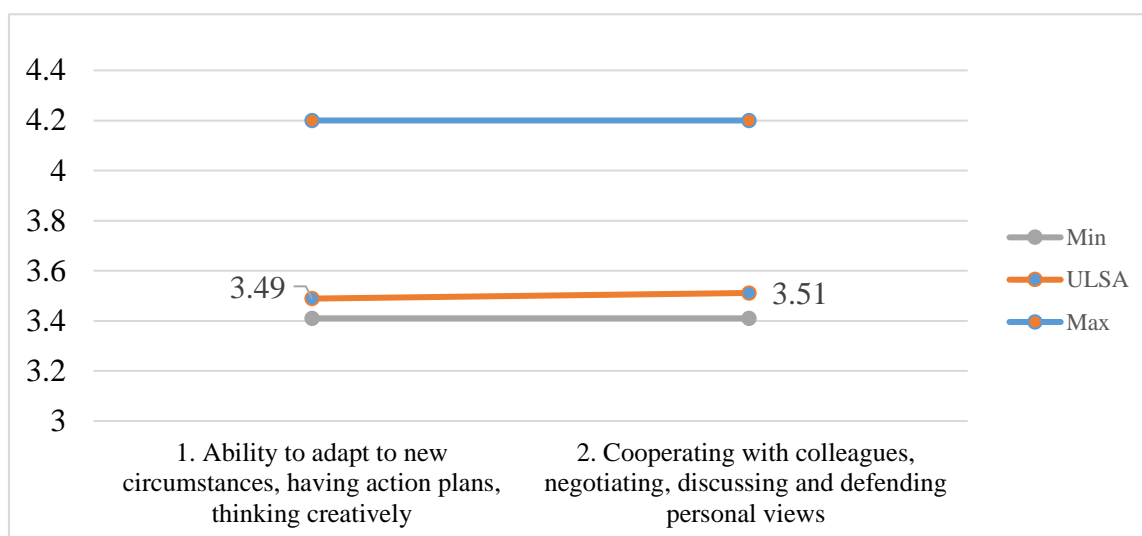


(Source: compiling from research results)

According to National Qualifications Framework of Vietnam and frameworks of ASEAN, computer skills, foreign language, writing skills, presentation of report is required at the 4 which means having done practice and implementation (mean from 3.41 to 4.2). With these skills, students of ULSA have achieved the required attainment level, however, it were close to minimum value, mean from 3.48 to 3.55. Writing skill and presentation skills got the highest mean which was 3.55. With kills of learning from the job, accounting students of ULSA got the lower levels with mean of 3.48.

Behavioral skills

Fig. 8. Comparing attainment levels of behavioral skills



(Source: Compiling from research results)

In terms of behavioral skills, the attainment levels of accounting students of ULSA were 3.49 and 3.51, consistent with Level 4 which means “having done practice or implementation” by the National Qualifications Framework of Vietnam and Framework of ASEAN, but the mean’s value was close to the minimum value.

Thus, in term of skills, students of ULSA achieved the highest attainment level in socio-economic skills and soft skills with mean of having done practice or implementation. However, students achieved lower attainment levels in skills related to accounting and enterprises’ activities, mostly at application level. When compared with National Qualifications Framework of Vietnam and Framework of ASEAN, students of ULSA achieved the required levels which is level 4 “having done practice or implementation”, except “skills of collecting, classifying and creating accounting in accordance with accounting laws and accounting standards” had mean = 3.32, achieved level 3 “ability to apply”, lower than level 4 as requirement of National Qualifications Framework of Vietnam and Framework of ASEAN. Apart from skills required in output standards, other necessary skills that graduate students of ULSA do not have such as professional manners, social responsibilities of, respecting cultural differences, adaptability in different organizations.

4. Conclusions and Policy Implications

Based on the survey results of attainment level of knowledge and skills of the ULSA’s students compared with the output standards, and the National Qualifications Framework of Vietnam and Frameworks of ASEAN, following solutions are proposed:

Adjusting output standards

Firstly, the university needs to identify training objectives as the basis for developing the output standards. The identification of training objectives and development of output standards should be based on the required standards of highly qualified human resources according to international standards so that trained students are not only qualified to work in

Vietnam but also have the ability to work in countries in the AEC region. The output standards must meet international standards for academic competence, career skills, ability to communicate in English and computer skills.

Secondly, the university needs to put additional time and requirements for subjects including English and Information Technology to ensure that students are able to communicate in English fluently and use English in research and preparing reports in specialized English, at least achieving intermediate level 3/6 (equivalent to B1 in European framework). Using office applications and some popular accounting software is critical. Thereby, the university needs to supply additional knowledge to meet integration requirements such as preparing of consolidated financial statements, international financial statements and professional ethics. Students are required to achieve such knowledge at minimum level of ability to analyze and synthesize.

Thirdly, the university needs to enhance the skills to help students adapt in integrated environment. Skills that need to be supplemented include: organizational adaptation, commitment to the public interests, professionalism in the workplace, social responsibilities of the accountants, respecting cultural differences among countries, professional working style, independence and confidence in the competitive environment. These skills need to be achieved at the minimum level of having done practice or implementation.

Adjusting contents, training programs

Firstly, Training programs should be designed in open-ended direction. The contents of the training program need to be updated so that learners will access modern and practice knowledge through the programs

Secondly, Training programs must increase the opportunities of professional practice, practicing soft skills so that graduate students can meet market demand.

Thirdly, the university needs to increase time and enhance subjects' contents to meet requirements of integration.

Fourthly, the university needs to supply additional subjects to meet integration requirements: accounting standards of international financial statements, training standardized professional ethics of accountants.

Training skills

Firstly, according to training programs of the university, lecturers need to direct objectives and attainment levels in required skills for students in subjects.

Secondly, the university should organizes and train self-study skills, self-practice for students

Thirdly, to enhance practical exposure of students, the university needs to organize visits to enterprises. *Fourthly*, the university should promote development of clubs, enhance extra-curricular activities to develop skills. Youth Union, Student Union can create a playground for students to develop their presentation skills such as speaking contests, creativity contests, talent contests.

In short, in the process of equipping students with knowledge and skills, universities recently need to focus more on skill development, softening knowledge and hardening skills through practice, practice in the learning process.

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Application of Diffusion Theory of Innovation and the Model of Technology Acceptance in Analyzing Factors Affecting to the Use of Balanced Scorecard in Vietnamese Hospitality Firms

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Abstract

Applying Roger's Theory of Diffusion Innovation (1962) and Davis's Model of Technology Acceptance (1986), this study examines the factors that influence the decision-making of the enterprises in application of balanced scorecard in Vietnamese hospitality firms. An analysis of the 315 hotel managers indicates that managers' perceptions of usefulness and ability to acquire new knowledge significantly influence the decision to use the balanced scorecard in Vietnamese hospitality firms. The paper contribute lessons to literature and some valuable experiences of the BSC application to reality for not only firms in Vietnam but also ones in international jurisdictions.

Keywords: *Theory of diffusion innovation, Model of technology acceptance, Balanced scorecard, Vietnamese hospitality firms.*

1. An introduction

The Balanced Scorecard (BSC) has been used extensively in countries around the world, including Vietnam, because it effectively combines financial and non-financial measures for management control and performance evaluation (Kaplan & Norton, 1992; Hoque & James, 2000; Evans, 2005). The BSC allows managers to look at four different important perspectives: finance, customers, internal business processes, learning and growth (Kaplan & Norton, 1996). It also provides managers with a more balanced view of the overall performance of the organization, helps leaders to manage and evaluate performance, and to

implement the strategy in a truly complete and comprehensive manner. It also links short-term activities with the organization's long-term strategy and vision.

Especially the BSC has been used widely in the service sector. Harris and Mongiello (2001) and Doran et al. (2002) examined a number of key indicators that hotel managers found helpful in managing recognition of BSC values. Many other studies research on hospitality firms in various countries and report many lessons (for instance Evan (2005) for the UK; Chen et. al (2011) for China; Bergin-Seers and Jago (2007) for Australia, etc. However, the numbers of hotels applying the BSC in Vietnam is still very low, thus the research on the BSC in Vietnamese hospitality firm is quite modest. Therefore, the objective of this study is not trying to cover all aspects of the BSC but will focus on determining the managerial factors influencing the decision to apply the BSC in Vietnamese hospitality firms.

2. Theoretical framework and hypothesis

2.1. Theoretical framework involved the BSC application

Based on the research objective, we applies the Stakeholder Theory, the Theory of Innovations by Rogers (1962) and Technology Acceptance Model by Davis's (1986). The following sections briefly describe those theoretical frameworks.

Stakeholder theory was initiated in Freeman's (1984) study named "A Stakeholder Approach". This is the theory of corporate governance and business ethics. According to Freeman (1984), stakeholders are any group or individual that can influence or be affected by achieving organizational goals. This definition is modified in Freeman (2004) in that the stakeholders consist of very important groups for the survival and success of organizations. The main groups of stakeholders are: customers, employees, local communities, suppliers, distributors, shareholders. In addition, other groups and individuals are considered stakeholders such as: previous generations (founders of the organization), competitors, union representatives or trade associations, creditors, government, regulators, policymakers, etc. (Friedman and Miles, 2006).

From an organizational point of view, businesses have a duty to treat all stakeholders equally, from a managerial point of view, to assess the importance of meeting the needs of stakeholders, and strategic objectives of the enterprise. Consequently, the theory of stakeholders is used to explain the reasons behind the use of not only financial indicators but also non-financial measure for performance evaluation in firms and organizations. That can be the reason for the current trend of application of the BSC.

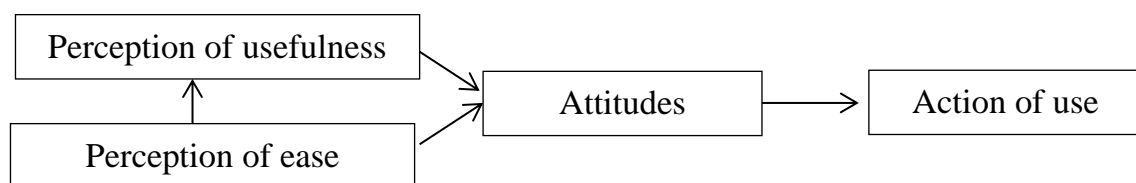
According to Rogers (1962), three factors affect the decision of choosing one management system like the BSC by an organization including: (1) personal characteristics of the manager- the commitment and support to implement an innovation; (2) Organizational characteristics- the important implications for the spread and implementation of new ideas and plans. An organization that connects, shares, communicates, among good departments is conducive to the diffusion of innovations and vice versa; (3) The external characteristics,

that is, beside the internal characteristics of the organization, external characteristics also have a significant impact on the acceptance of innovation, for instance, the highly competitive environments might lead firms to apply new initiatives like the BSC.

Applying this theory, the study investigates the factors that influence to the firms' managers in relation to the application of the BSC.

The Technological Acceptance Model (TAM) introduced by Davis in 1986. TAM has undergone some changes since it was built. The original TAM proposed by Davis (1986) outlines three factors that affect the adoption of technology, including: the perceived usefulness of the technology, the perception of ease of technology application, and the attitude of the user for use.

Figure 2. Technology Acceptance Model (Davis, 1986)



The Technology Acceptance Model (TAM) is a widely used theory in the study of adoption of new technology. This model is also useful in behavioral studies for general acceptance (Bui Thi Hai Van, 2009). The author uses the modified TAM in 1996 to study the factors influencing the decision of using the BSC. Applying this model, the author took into account the effects of perception on usefulness and perceptions of the ease of the BSC application in the research model. According to Davis, those are two main factors that influence decisive behavior.

Based on the literature review of previous studies, our paper proposes five factors that affect the decision to implement the BSC in hospitality firms in Vietnamese context. These factors include: (1) the management control system which is being used in the firms; (2) the managers' ability to acquire new knowledge; (3) the managers' methods applying to evaluate subordinates; (4) the perception of the usefulness of the BSC; and (5) the ease of use of the BSC perceived by the managers. The detailed discussion for these factors are represented in the following sections.

2.2. The research hypothesis

2.2.1 The management control system being used in firms

Up to date, the balanced scorecard has been described in a variety of ways. The BSC is believed differently, including a performance management system; a management information system; a strategic management system, or a management control system. Otley (1999) argues that most organizations use a management control system and the BSC is a management control tool. It has been said that employees are affected by the organization's control system via behavioral control, personal control, and cultural control. Controlling people

behaviors is defined as the rules and procedures to guide the actions of employees to achieve specific desired outcomes, controlling the emphasis on selecting employees when recruiting to achieve high performance and control of culture is building a good culture for the organization. According to Sandelin (2008), the BSC is a control system for results and is used in conjunction with other management tools such as behavioral control systems, personal control, and culture control. Thus, the authors hypothesizes:

H1: In an organization where control management systems (behavioral control, personal control, cultural control) are being used, it positively influences the utility of the BSC.

2.2.2. The managers' ability to receive new knowledge

According to Wiersman (2009), managers who are capable of receiving knowledge from the new accounting information system will be more likely to use the BSC. Study on managerial behaviors, Baird et al. (2004) argued that managers who are more creative and open mind with new ideas will be easy to accept new accounting management systems such as the BSC. Moreover, Baird et al. (2004) also documented that firm's creative manager firm in turn to build the creative culture for their environment. And as a result the firm will have quick approval for new management system, like the BSC. Thus the authors hypothesizes:

H2: *The ability of the manager to absorb new knowledge has a positive influence on the intention of the BSC application*

2.2.3. The managers' methods applying to evaluate subordinates

According to Otley (2000), the manner of which managers use to evaluate subordinates will influence on the extent and level of firms' management control system. When managers have a rigid evaluation approach, they might have problems with BSCs because this system presents a lot of information and it is difficult to aggregate them in a benchmark. On the contrary, when using BSCs in addition to financial measures, managers can also measure on the basis of non-financial measures. Consequently, the managers' assessment influences the way of BSC application. Managers who value non-financial information are expected to use more BSCs because it provides both financial and non-financial information for making a decision.

H3: *Managers with flexible subordinate assessment methods will positively influence the BSC application*

2.2.4. The perception of the usefulness and the ease of the BSC

We use two factors drew from the Technology Acceptance Model (TAM) including the usefulness and ease of BSC usage to evaluate the intended use of the BSC. Because when users are aware of the usefulness of using BSCs they will improve their productivity, they will surely use it more often. And when they are aware of their ease of using BSC users want to use it, especially senior managers who have very little time to learn how to use the BSC (Tanyi, 2011). Thus, we have propose the two following hypothesis:

H4: Managers' perception of the usefulness of the BSC positively influence the application of the BSC

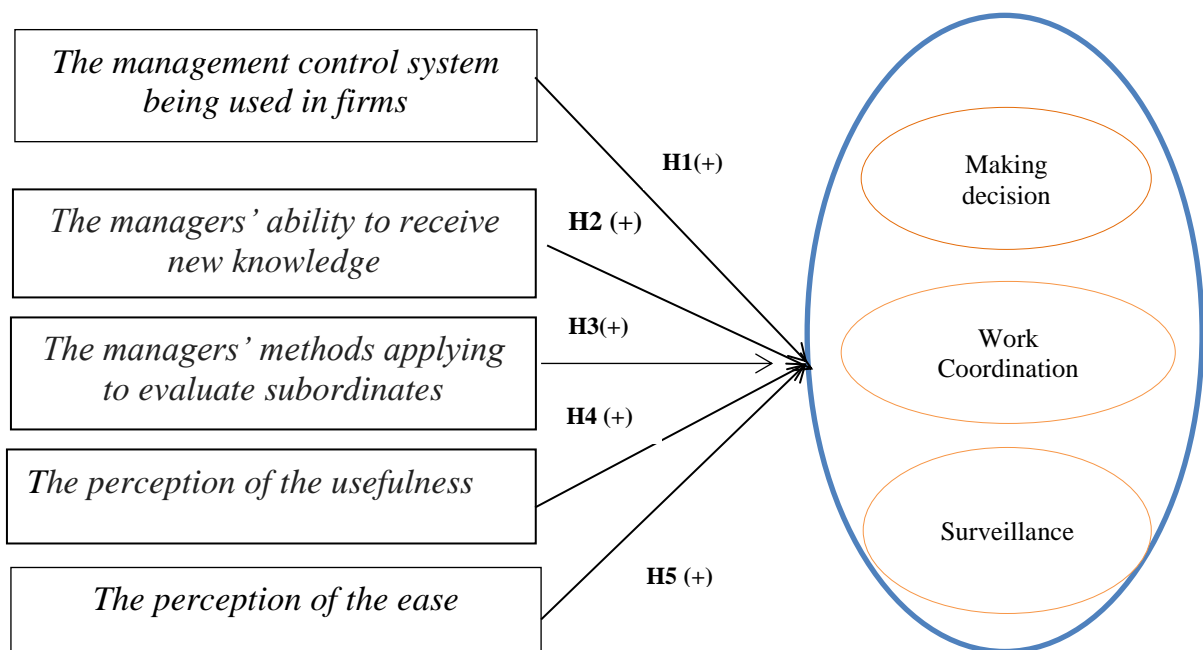
H5: Managers' perception of the ease of the BSC application positively influence the application of the BSC

2.2.5 Decision of using the BSC

According to Kaplan and Norton (2001), BSC primary purpose at the organizational level is to interpret the strategy and implement it. At the individual level of managers Chenhall (2003) argued that managers first use to assess whether decisions are consistent with the company's strategy. Regarding this purpose, managers receive feedback from the BSC to help them evaluate whether the strategies are effective and whether they can develop new, improved strategies. Second managers use BSC to communicate information, both horizontally and vertically. Accordingly, managers create information sharing with members of the organization. However, as a manager, according to Wiesman (2009), managers use the BSC to help make decisions and get feedback on those decisions, rather than communicating with others and using the BSC to coordinate the work and monitor the performance of the individuals.

In summary, BSC can be used for a variety of purposes. In this paper, the purpose is to test the purpose of using BSC at the individual decision-making level, coordinate work and monitor individual performance.

Figure 2.1. Research model



3. Research methodology

3.1. Variables and measurement

There are five concepts used in this study as independent variables, including: the management control system being used in the organization; the managers' ability to receive new knowledge; the managers' methods applying to evaluate subordinates; the perception of the usefulness; and the perception of the ease of the BSC. And the managers' decision to use the BSC is representative as dependent variable. The management control systems are measured by variable named from KS1 to KS5; The managers' ability to receive new knowledge is measured through variables from KT1 to KT2; The managers' methods applying to evaluate subordinates variables from E1 to E4; the perception of the usefulness measured through variable HI1 to HI4; the perception of the ease of the BSC measured through the variable, SD1 to SD5. The decision to use the BSC is dependent variable and represented by three variables: decision making, work coordination, and performance evaluation. These scales are measured on a 5 point Likert scale: Absolutely not affected, Not affected, Normal, Influential, Very influential.

3.2. Research sample

The study was conducted by quantitative research. The questionnaire has been built with 50 questions representative for five independent variables and one dependent variable. The questionnaire is then distributed to 315 managers randomly chosen from Vietnamese hotels, 3-star to 5-star ones. In these, there are 25 directors and vice directors, the remaining managers are heads of departments of 3-5 star hotels.

In relation to sample size, it is accepted that for the EFA exploratory factor analysis, the sample size is at least 5 times the total number of observations (Hair et al., 2006, cited in Nguyen Dinh Tho, 2013). For multivariate regression analysis: the minimum sample size to be calculated is $n = 50 + 8 * m$ (where m is independent variable) (Tabachnick and Fidell, 2007, cited in Nguyen Dinh Tho, 2011). For our paper, the factors influencing the use of BSCs are five independent variables (25 scales) and three dependent scales (15 scales), sample size is at least 175, the content of the system of indicators MPA has 4 factors corresponding to 39 scales, sample size is at least 195 samples. So, the sample size is at least 195. This means that the sample size satisfying requirements for statistical test.

4. Research results

4.1. Evaluation of scale reliability

The Cronbach alpha method was used to evaluate the reliability of the scale and the exploratory factor analysis (EFA) was used to evaluate the convergence value and group the scale. The Cronbach alpha results indicate that the scales meet the reliability requirement. Specifically, the management control system being used in the organization has a Cronbach alpha coefficient of 0.861, Cronbach alpha coefficient for the managers' methods applying to evaluate subordinates is 0.883; the perception of the usefulness has Cronbach alpha of 0.851; and the perception of the ease of the BSC has 0.875. The EFA results show that five factors were extracted with a total variance of 72.463%. The variable SD1 has two load factors less than 0.3, so the variable SD1 is removed. All other measurement variables have a high load

factor (greater than 0.5) on the concept they measure. Thus, the scales achieve convergence and discrimination. The details are represented in the following table 1.

Table 1: Summary of the results of independent variables

Variable	Measurement	Factor loading
KS	The management control system being used in the organization: $\alpha = 0.861$	
KS1	Rules, procedures that specify the tasks in the organization will be implemented	.748
KS2	Regulations, procedures that regulate the way of doing things very closely	.825
KS3	The rules and procedures in the organization are useful to motivate people to do their task at best and make the BSC unnecessary.	.787
KS4	The rules, procedures and regulations on recruitment will replace the performance evaluation by the BSC	.837
KS5	The rules, procedures and regulations on recruitment will be used concurrently with the BSC to effectively serve the functions of measurement, reward assessment, assignment of authority and responsibility in the organization.	.774
DG	The managers' methods applying to evaluate subordinates: $\alpha = 0.883$	
DG1	To assess subordinates, financial indicators are more appropriate to present than non-financial indicators	.903
DG2	To assess subordinates, financial indicators are used more than non-financial indicators.	.824
DG3	For subordinate reviews, quantitative information is needed more than qualitative information.	.808
DG4	If the results do not match expectations, you will adjust the rating the subordinates	.852
HI	The perception of the usefulness: $\alpha = 0.851$	
HI1	BSC is useful for performing my task.	.864
HI2	BSC is useful for measuring performance.	.813
HI3	BSC is useful for controlling, managing, and executing strategies.	.766
HI4	Using BSC helps me to have more skills	.788
SD	The perception of the usefulness: $\alpha = 0.875$	
SD2	Easy to communicate strategy through BSC	.811
SD3	BSC makes it easy for me to do my job	.910
SD4	Learning how to use BSC is quite easy	.664
SD5	BSC is a versatile application to use	.912

4.2. Regression for relationship of variables

Using multivariate regression analysis with the support of SPSS 22 software to test the hypothesis of the relationship between independent variables and dependent variables. Specifically, this step will be performed in turn with three dependent variables drawn from the literature review.

The regression analysis showed that there are four managerial factors that influence the use of the BSC: the management control system being used in the organization; the managers' ability to receive new knowledge; the managers' perception of the BSC's usefulness; and the perception of the ease of the BSC, and all 4 factors are positive influence. Among these, the perception of the usefulness has the greatest impact on decision making and performance monitoring, and the perception of the ease of the BSC have the greatest impact on using BSC for work coordination. Thus the hypotheses H1, H2, H4, H5 are accepted. The variable indicate the managers' methods applying to evaluate subordinates performance was not statistically significant, so the hypothesis H3 was not accepted. The detailed results are represented in the following table.

Table 2: Summarize the results of the research on the factors affecting the use of BSC

Variables	Making decision		Work coordination		Surveillance	
	β	Sig	β	Sig	β	Sig
The management control system being used in the organization	.308	.000	.196	.000	.179	.000
The managers' ability to receive new knowledge	.291	.000	.196	.000	.203	.000
The managers' methods applying to evaluate subordinates	.019	.652	.051	.271	.054	.253
The perception of the usefulness of the BSC	.309	.000	.262	.000	.391	.000
The perception of the ease of the BSC	.123	.004	.281	.000	.079	.105

5. Conclusion

The research has provided theoretical and practical contributions to the use of the BSC in Vietnamese hotels.

In theory perspective, research has successfully applied research models and research theories in other countries to Vietnam. Specifically, the decision of the BSC application can be explained by both theoretical theories. The first is the theory of Diffusion Innovation by Rogers (1995) which documents three factors affecting to new management system in firms, including (1) managers' characteristics; (2) organizations' characteristics; and (3) organizations' external factors. And the second theory is the *Model of Technology Acceptance by Davis (1986)* which is theoretical framework applicable to new technology acceptance. It is believed that this model is very useful in the researches of behavior

acceptance. Our research result is consistent with Davis (1986) and Bui Thi Hai Van, (2009) that the managers' perception of usefulness and perception of the ease of the BSC are major factors affecting to application of the BSC in firms. Moreover, the findings also confirms the role of managers in deciding to apply BSC. We believe that the level of involvement and support of managers are the most powerful factor for the success of the BSC application.

In practice, the research results will help managers to realize their role in the decision process to apply the BSC. The result also suggests some practical recommendation for Vietnamese hotels in applying the BSC in their operation aiming to improve performance and competitiveness.

This research has shown that the usefulness factors, the ease of use, the ability to acquire new knowledge, and the management control system in use are influencing the implementation of the BSC. Based on these we suggest some following instructive points:

The managers should know the usefulness of the BSC and this evaluation system is not very difficult to apply. This system can integrate with the existing measurement and management systems which the organization is using. Therefore, the members of the organization can be easily used if being trained, not only the managers. This reality should be diffused intensively and broadly so that the level of BSC acceptance in the organization will increase, facilitating the application process.

In addition, the managers' ability to receive new knowledge is also decisive to use the BSC application, so the hotel when recruiting should choose the managers who are creative, and always support innovation. Our study advocates behavioral attitudes at the individual level, influenced by organizational behavior, so when a manager sets goals for innovation, leaders must organize training and support. Employees have the necessary skills and knowledge to realize the innovation and send messages to other employees.

The management control system being used in the organization is also critical for the intended use of the BSC. Research results show that management control tools are used in conjunction with the BSC to improve management efficiency and performance, so when deploying and implementing the BSC hotels should use the BSC concurrently with other the management control tools in a proper manner.

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Management Accounting Information Systems in the Context of The Fourth Industrial Revolution

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Abstract

The Fourth Industrial Revolution, with outstanding scientific achievement based on technological advances from the 3rd Industrial Revolution, is expected to make significant changes to all fields. The purpose of this article is to evaluate influences of The Fourth Industrial Revolution on Management Accounting Information System. First, the paper provides overview of The Fourth Industrial Revolution. Then, the paper discusses concepts and components of management accounting information system. Based on how the fourth revolution took place, the article will assess their impact on the management accounting information system from the perspective of components of the system. The understanding about that will help the business in Vietnam give policies and strategies to catch up with the 4th industrial revolution happening in the world.

Keywords: *4.0 Industrial revolution, Information system, Management accounting*

JEL codes: *M41 (Accounting)*

1. Introduction

The past industrial revolutions have resulted in great scientechnological achievements for human beings. Specifically, thanks to these revolutions, the production process based on manual labor with outdated technology has changed to mass production with modern technology. In the latter advancement, electronic and information technology has been applied in place of human exploitation as the work force (both physically and manually). In the early stage of the forth industrial revolution-4.0 industry, with the

background inherited from the third industrial revolution, the digital industry attached with hardware, software and internet system would become more complicated, which is established with more integrated aspects and puts wider impacts on the global economy.

Under the context of the fourth industrial revolution, managers at different levels in business field have always been facing challenges in continuously improving their business performance. They should always make great efforts to give appropriate and timely decisions in order to obtain business success. For this purpose, these managers are extremely in need of systems providing essential information for their decision making process. Currently, one of effective systems helping decision makers in business is the management accounting information system. The information provided by management accounting would be a competitive advantage for the business to assure a firm position in the market oriented economy with numerous changes. As a result, under the context of the fourth industrial revolution, it is necessary for the management accounting information system to be integrated with new adaptations and innovations so that the quality of information supplied for business managers can be improved. Then, this paper helps to clarify different components of management accounting information system and forecast impacts of the fourth industrial revolution on these components.

2. Theoretical Framework

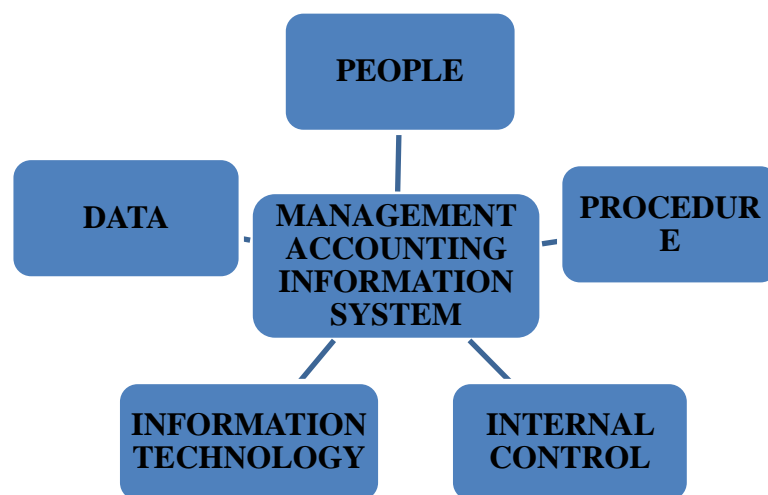
2.1. Management accounting information system

According to Horngren et, al (1999), management accounting information system is an information system including financial and non-financial information used by a particular business. Hansen & Maryanne (2007, 4) supposed that "*Management accounting information system refers to the collecting process of activities from measurement, storage, analysis, report to management of information*". Hansen & Maryanne (2007) also announced the purposes of management accounting information system, which are (1) Providing information serving the calculation of expenditures for service, products and other expected objectives' management; (2) Providing information relating to planning, control and continuous innovation; (3) Providing information helping decision making.

In order to obtain the goal of providing useful information, the management accounting information system should operate based on interactive components. From the perspective of Jame A. Hall (2011), management accounting information system includes 6 components, namely (1) End users, (2) Data sources, (3) Data collection, (4) Data processing, (5) Database management, (6) Information generation, (6) Feedback. Sharing the same opinion of 6 components, however, Marshall B. Romney and Pau J. Steinbart (2012) indicated that the management accounting information system should cover (1) People, (2) Procedures and instructions, (3) Data, (4) Software, (5) Information technology infrastructure, (6) Internal controls and security measures. According to Đặng Thị Thúy Hà, management accounting information system should be comprised of 5 components: (1) People, (2) Documents - accounts – books and accounting reports, (3) Accounting procedures, (4) Information technology infrastructure, (5) Internal control. Despite agreeing

with the idea given by Marshall B. Romney and Pau J. Steinbart (2012), she demonstrated that the fourth component “software” and the fifth one “Information technology infrastructure” are two different aspects in the field of information technology. Therefore, it is proposed in this paper that these two components should be combined as one named “Information technology”. Besides, the authors also suppose that the components of management accounting information system introduced by Marshall B. Romney and Pau J. Steinbart (2012) are precisely components of this system. Then, the management accounting information system is identified with the following components (1) People, (2) Data, (3) Procedures, (4) Information technology, (5) Internal controls.

Fig.1: Components of Management accounting information system



(Source: compiled by the authors)

The People component

People are always considered as the fundamental and significant component, which plays the key role in a fast and sustainable development in manufacturing activity of any business. Jame A. Hall (2011) pointed out that people in accounting information system are the End users, including internal and external users of the business. The external group should be lenders, shareholders, control agencies, tax departments, suppliers, customers, etc. The internal group should include managers at different levels. Marshall B. Romney and Pau J. Steinbart (2012) related the component People in the accounting information system to the system users. They supposed that the first users of management accounting information system would be *management accounting staff*, who perform their tasks on the application of management accounting information system of the business. The second users should be *business managers*, who utilize outputs of the management accounting information system to perform their responsibilities. The staff of information technology should not be the system users, but are supporters, in other words, they play their role in ensuring the security

and control of the management information system in general and the management accounting information system in particular.

The Data component

Data is an important element as a contributor deciding the quality of information supplied by the management accounting information system. The data suppliers might be either department of accounting or other departments of the business or even external sources. These sources are divided into two types:

+ Internal data source: This is the data internally collected from department of accounting. Based on level of processing, the internal data is classified into different levels as the followings:

Level 1: Raw data. At this level, data refers to raw and primary documents which have not been processed at any stage (original documents).

Level 2: Secondary data. Now, the primary data is processed on a simple basis. This kind of data is the comprehensive document system.

Level 3: Tertiary data. This kind of data is processed more scientifically and logically than the secondary data. The tertiary data is accounting book system.

+ External data source: This is the source collected from external sources of the accounting department. Then, this source covers business's inventory storage policy; supplier's sale policy; human resource policy, salary policy, etc; policies and regulations by relevant authorities, etc.

The component procedure

Procedure of management accounting information system is a collection of methods, orders and techniques that management accounting should follow in order to gather, storage and process the management accounting information. Management accounting procedure might be either prepared and presented in hard copy version or coded in management accounting information system software, which helps subjects directly using the management accounting information system explore instruction and steps on their own. The procedure of management accounting information system would propose methods and steps to collect, storage and process the following contents:

- Cost identification
- Implementation measurement and control
- Analysis serving decision making
- Supply of management accounting report
- Feedback on management accounting information

The component information technology

In today's world, information technology has been developed in fast pace, which expands its influences and distractions in almost all areas of life, economy and society.

Regrading management accounting information system, although information technology cannot replace people, it can hugely assist people in collecting, processing and providing information as well as decision making. Businesses moved from simply applying information technology into certain basic accounting sections to upgrading and developing it to a system with linkages among different stages and elements, including management accounting information system. Information technology in management accounting information system might cover the following contents:

- + Hardware: this includes physical, tangible parts of an electronic device with 6 basic elements of Input, Output, Memory, ALU, CU, and External memory. These elements would help to quickly and accurately collect, process and communicate the information. Electronic devices with common hardware nowadays are computer, laptop, ipad, smartphone, etc.

- + Software: this covers diversified programs created by programming language to perform tasks required by users. Software appliances are divided into two types, which are applicable software and systematic one.

- + Communication network system: This is the connection among information technology components in order to share resources. Communication networks used in management accounting information system are divided into Local Area Networks, which connect computers in operating area of the business and Wide Area Networks, which has LAN located at different places globally.

The component of Internal control

Management information system in general and management accounting information system in particular are two really important information sources for business, which are required to be kept completely confidential. However, in the implementation process of the system, there might be either errors of these two sources which are subjectively and objectively caused or purposeful dangers which are internally and externally brought about. In today's world of highly developed information technology, these dangers easily appear, especially in the case of a system with integration of different business's elements. In order to minimize and prevent errors and dangers related to management accounting information system, the business needs to establish its internal control. Bodnar & Hoopwood (2010, 138) affirmed that "Internal control is the process designed to ensure the appropriateness linked with the achievement of different items, which include reality of financial statement, effectiveness of activities, implementation of law and current regulations".

Based on control scope, internal control is divided into:

- + General control: this covers policies and procedures on effect in the whole system.
- + Application control: this includes policies and procedures which only put impact on a particular belonging system or a specific part of applying section.

Based on purpose of control, internal control is comprised of:

- + Preventing control: this is the approach to prevent faults and fraud

- + Identifying control: this is the approach to find out faults and fraud
- + Correcting control: this is the approach to fix and minimize the identified faults and fraud.

2.2. The forth industrial revolution (4.0 industry)

The forth industrial revolution is a concerning issue for numerous leaders, speakers and business managers in different forums and conferences such as World Economic Forum (WEF) taking place on January 20th, 2016 in Switzerland, the 10th summer Davos forum with the theme "The 4th Industrial Revolution and its impacts" opening on June 27th, 2016 in China, conference "Competitive capability and coverage development in the forth industrial revolution setting" happening on November 17th, 2017 in Vietnam. The Fourth Industrial Revolution has been considered as the digital revolution based on the background of the third industrial revolution. Consequently, the technology and techniques brought about by the forth industrial revolution would be outstanding achievements, science-industrial breakthroughs that change the whole society as well as the global economy.

According to Prof. Klaus Schwab, chairman of the World Economic Forum, Industry 4.0, in other words, the forth industrial revolution, is a concept covering a wide range of modern auto-technology appliances, data communication and engineering. The forth industrial revolution is defined as "a terminology for different types of technology and a concept of organization in the value chain". It is attached with physical systems in cyberspace, Internet of Things (IoT) and Internet of Services (IoS).

It was analyzed by the National Agency for Science and Technology Information (2016) that the nature of the forth industrial revolution was based on the digital technology, the integration of intelligent technology with both real and virtual systems, Internet of Things (IoT) and Internet of Services (IoS). This foundation aims to optimize the effectiveness of manufacturing process and method. Then, the business's operation and manufacturing would be automatized completely thanks to the way different kinds of equipment labelled according to levels of modules to signalize their problems' self-resolutions and procedures. These various kinds of equipments would run in a cooperative system through wireless internet or cloud computing.

The forth industrial revolution has been bringing about numerous opportunities for every country, especially a developing one like Vietnam because it helps to improve productivity and shorten the development gap. Under the context of Vietnam's intensive integration into the world economy with its completion of large-scale free trade agreements such as TPP, FTA with EU, Euroasian Economic Union (EAEU), etc, it is such an urgent demand for this country to access to achievements of new manufacturing revolution to effectively join global value chain and foster its industrialization and modernization process. At conference "Competitive capability and coverage development in the forth industrial revolution setting" on November 17th, 2017 in Vietnam, Deputy Prime Minister Vuong Dinh Hue demonstrated that due to its historical conditions, Vietnam missed its involvement in stages of three previous industrial revolutions. Also, he stated that "Vietnam has a great opportunity in the forth industrial revolution, then, it should seriously, comprehensively and

focusingly prepare for its participation so that it can successfully take this chance to develop the country”.

3. The impacts of the forth industrial revolution on management accounting information system

The forth industrial revolution would strongly influence business performance. From the perspective of management accounting information system, 4.0 industry puts an impact on every components of the system including people, data, procedure, information technology and internal control.

3.1. The impact on People component of the management accounting information system

Defeating counterpart would become quicker than ever before due to creativity and sensitivity in applying digital technology into the whole business operation, including management accounting information system. The capability of receiving demand and meeting demand will quickly appear. Then, managers should always make decisions to improve effectiveness, immediately response to the market change and face with competitiveness in terms of not only their products but also appliances of high technology.

In 4.0 technology setting, devices considered as inanimate ones will become smart because they are inserted with sensor and they can “communicate” with each other without human support. This means that the forth revolution aims at improving productivity and reducing labor. We will change individual environment and specialization of employee. In particular, these excellent individuals used to be key elements deciding prosperity and success of the business. 4.0 industry will also change the role of management accountants in management accounting information system. Smart devices will gradually reduce the necessity of management accountants. Then, they will take another role in consulting rather than performing their usual accounting tasks, which should be done by smart devices. This reveals a step by step change in the role of management accountants. Initially, they are simply management accounting practitioners. After that, due to appliances of information technology, they have to equip themselves with knowledge and skill of systematic software because their role now will be bot practitioners and consultants. In higher level, when information technology thrives with great advantages, they will work as consultants only.

The role of information technology staff will be appreciated when information technology devices are applied into management accounting. They should have skill of hardware, software, network and knowledge of systems like systematic integration and systematic development methods.

3.2. Impact on Data component of management accounting information system

Due to the influences of 4.0 industry, data of management accounting information system will be an indispensable part from other systems of the business. It will be completely integrated with other departments. The data will be stored in a place that every department and branch can access to the information to analyse it. This results in avoiding differences in different reports in the same business, saving cost and time for gathering and

systematizing data in each specific area. The forth industrial revolution will bring about a huge amount of data, of which the collection, analysis and processing will help to build up new kind of knowledge, assisting decision making and creating competitive advantage.

Data storage might work under two forms which are paper-based and file-based. 4.0 technology will foster file-based storing, which avoid overlapping and at the same time, improving data control capability. However, security and safety of computer network is another issue that should be paid attention to.

3.3. Impact on Procedure component of management accounting information system

Procedures of management accounting information system include the sequence and techniques to identify cost, measure the implementation and control, analyze data for decision making, provide management accounting report, give feedback on management accounting. All of these stages will be quickly performed through an automatic system of modern and smart equipment. Traditional management accounting techniques will be replaced by modern ones because they are no longer effective in meeting the demand of strong business changes. There will be emerging techniques like operation-based accounting, operation-based management, target cost, Kaizen costing, balanced scorecard, strategic management accounting, etc. In my opinion, it is impossible to perform those new techniques without the integration of information technology. Thus, in addition to the business environment, information technology is another factor that has huge impact on changing the process and techniques of management accounting. Changes in terms of information technology would have an impact on management accounting in regard of new accounting measurements. Thanks to the forth industrial revolution, it is certain that the advanced development of information technology will involve the process and technique of new management accounting to meet the demand of continuously providing information for business managers.

3.4. Impact on Information technology component of management accounting information system

Information technology covers hardware, software and network, which will not be performing tools of management accounting staff anymore, but become smart equipment. The supercomputers will be programmed to work automatically from collecting to processing, analyzing data and providing information required by the managers. The computer system will be inserted with sensors, which makes it possible to give response as a “human”. The hardware and software will be integrated thanks to internet connection. The cloud-based internet system will create excellent opportunities for storing and effectively using big data established by the forth industrial revolution. The cloud-based solutions will be more and more important to the forth industrial revolution.

3.5. Impact on Internal control component of management accounting information system

Internal control in business under the context of 4.0 industry is the cooperation between business operation control and strict information control. In management

accounting information system, 4.0 industry will help to reduce the burden of controlling management accounting practice. The reason for this is that smart facilities will replace humans in controlling management accounting. Therefore, there will be no more faults in inserting data like missing data, inserting incorrect data. At the same time, information security will be extremely important. Wireless revolution will increase dangers of invading information and business tips. Problems of network security, information confidentiality will be more significant to ensure perfectionism of business operation. Network attacks might paralyze the manufacturing process of any business at any time.

4. Conclusions

The fourth industrial revolution sets a big challenge but also a great opportunity for businesses in Vietnam. In regard of management accounting information system in business, the fourth industrial revolution has impacts on every component including people, data, procedure, information technology and internal control. In order to make these impacts become motivations for business development, each business itself has to step by step study from and cooperate with others to apply modern information technology in the world on a strong and wide basis. At the same time, knowledge and skills to utilize information technology should be improved by all individuals in the system, including managers and management accounting staff. It is necessary for the business to establish a working environment that encourages staff to self study, improves themselves and develops their adaptability. This is a really important factor in transforming business culture, which is digital-based. The awareness of impacts of 4.0 industry would help businesses in Vietnam to get ready for welcoming both opportunities and facing challenges to create breakthrough in their operation.

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Effects of Organization Size and Level of Manager Education on Responsibility Accounting: The Case of Vietnamese Cement Enterprises

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Abstract

Responsible accounting is important content of management accounting. This is an accounting system provides the flexible information, timely and accurately that help administrators to win in the drastically business competitive environment at present. This research have shown effects of organization size and level of manager education on responsibility accounting in Vietnam cement enterprises. This research aims to identify the development of responsibility accounting, from four primary elements of initial responsibility accounting (Hansen & Mowen (2005)[1] developed into seven elements (Gharayba, Fatena, Debi, Ma'Moon, &Nasar, 2011)[7] and developed into 43 scales matching seven elements (Hanini, 2013) and some new items in this paper. In this paper, SPSS (Statistical Product and Service Solutions) 22 was used to collect and analysis data by distributing 103 questionnaires on managers and head of departments from Vietnamese cement manufacturers.

Keywords: *Cement, Management, Manager education, Organization size, Responsibility accounting*

JEL codes: *M41 (Accounting)*

1. Introduction

When our country's economic integration with the regional economy and the world, competition between enterprises was very intense. Therefore, in order to survive and develop, enterprises must continuously expand their business and production activities. As the scale of business production increases, enterprises must implement decentralization and decentralized management, taking form of divisions that managers must be responsible for

the operation of such division. This is the premise and motivation to form an accounting system, which is responsible accounting (RA). However, responsible accounting in general and factors that effects on responsibility accounting is a very new content in both theoretical and Practice. Research have shown effects of organization size and level of manager education on responsibility accounting the Vietnam cement firms.

2. Theoretical Framework and Methods

2.1. Theoretical Framework of responsibility accounting

There are many different views about the responsible accounting, according to different purposes, professional researchers or administrators in enterprises with different angles of RA in the business different now. However, there is no unified concept of responsible accounting.

From the point of view of responsible accounting, we can draw some general nature of the liability of accounting as follows:

Firstly, responsible accounting is a basic content management accounting to generate financial information systems and non-financial related to the actual operation and planning, are used to control control activities and assess the performance of each division, head of department in the enterprise

Secondly, responsible accounting related to the organizational structure of the enterprise is decentralized and explicit authorization. A basic requirement for the implementation of responsible accounting is the existence of a realiably organizational structure. The complete line of power should be determined before responsible accounting is done. The managers at the decentralized level decision consistent with his management responsibilities in the operation of the business.

Thirdly, responsible accounting to provide information to help managers control business activities of subordinate managers. Accounting control responsibility by passing individual responsibility for the achievement of financial targets and non-financial enterprises. Accounting assign responsibility, set the powers and responsibilities for each department or individual and a system of indicators, reporting tools outcome of each department have control and responsibility respectively, thereby to control the operation and connect the parts and units within the enterprise ensures businesses operating activities according to plan

Fourthly, responsible accounting can based on decentralized organization and to divide the responsibility centers consistent with the organizational structure or accounting shall be based on the content in order to divide the contents specific details. In each content, RA using a mixture of cost accounting methods and methods of results evaluation, particularly modern methods for recognition, measurement and evaluation of performance achieved in Business Department.

Fifthly, responsible accountants establishes a reporting system providing financial and nonfinancial information for administrators to control operation according to defined objectives

Through the synthesis of views on different aspects, can be generalized *Responsible accounting is a information system based on decentralization, decentralization to the administrators, department within organization using a mixture of cost accounting methods and evaluation methods to record success, measure, evaluate operating results achieved in the organization in order to provide financial and nonfinancial information for managing the appropriate powers as assigned and responsibilities in parts, the center responsible for controlling parts and units in operation now in the right direction intended.*

2.2. Elements of responsibility accounting

Considering the perspective and approach of the organizational structure and the level of decentralization, the liability of accounting is divided into the central responsibility.

Centre shall be part of the organization, where executives responsible department operating results of its parts. Accordingly, based on the organizational structure and degree of decentralization, enterprise system centers corresponding responsibility. Currently, most researchers believe that there are 4 types of responsibility center that is responsible for the cost center, the center is responsible for revenue, profit center responsibility and responsible investment center.

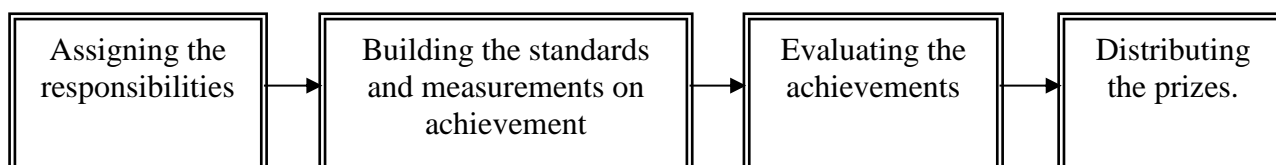
Considering the views and approaches of content, liability accounting has the following elements:

According to Hansen & Mowen (2005), Responsible Accounting included four essential elements (Don, R. Hansen and Marynne, M.Mowen (2005)):

- 1) Assigning the responsibilities
- 2) Building the standards and measurements on achievement
- 3) Evaluating the achievements
- 4) Distributing the prizes.

The basic elements work together in the order of 2.4 the following diagram:

Fig 1 : Basic elements of responsible accounting



(Source: Don, R. Hansen and Marynne, M.Mowen (2005))

From 4 basic elements as above, in his study, Gharayba and colleagues (Gharayba, et al. (2011)) developed into 7 factors and other authors as Hanini (Hanini, Al (2013)) ... used in research on accounting charge liability, responsible accounting has the following elements:

1) RA shall divide the organizational structure of the enterprise to its various responsibility centers based on the specific characteristics of such enterprises

2) Responsible Accountants decentralize power to the administrator at the center of responsibility with clear authority and administrator shall be responsible for the achievement of the central responsibility. The administrator should be authorized with power matching activities at the center of responsibility and accountability necessary to make decisions related to the responsibilities of the central and executive responsibilities treatment to achieve planned results.

3) Responsible Accounting shall divide the costs and revenues to the central responsibility as possibilities and limits the power of the center. Also, Responsible Accounting shall determine and calculate direct costs, indirect costs, revenue and internal transfer prices between central responsibility appropriately and accurately to identify clear responsibilities.

4) Responsible Accounting implementation link between the estimates with actual results at the center of responsibility. Accountants are responsible for encouraging all employees of each center are done drafting to ensure appropriate cost estimates, feasibility and can achieve the overall goals of the business.

5) Responsible accounting estimator used to control and measure results through the comparison with the actual results of each responsible center

6) Responsible Accountants prepare a report to analyze the difference of actual results with the estimates to determine who shall be responsible for the difference. All managers have to analyze the reasons for the difference between the actual results achieved and estimates made. Accounting reports shall be classified according to different levels of responsibility.

7) Responsible Accountants set up an incentive system which has a close relationship with the estimation results at the center of responsibility to limit undesirable disparities and promote good differences, and determine who is responsible for the difference in order to encourage employees to improve their achievement and the overall success of the entire enterprise

Content approach is suitable for the development of responsible accounting. Initial accounting responsibilities have 4 primary elements (Hansen and Mowen (2005) developed into 7 elements (Gharayba and colleagues). Later, AL Hanini developed into 43 scales matching element 7. in the next section, researchers will use content-based approach (the approach of 7 elements) and the use of Al Hanini 43 scale was developed based on seven elements to perform analysis the application of responsible accounting in Vietnamese Cement Manufactured Enterprises

2.3. Factors affected on responsible accounting

There is not a standard design and the best for management accounting system in general and responsible accounting in particular but dependent on the factors in organization. Many authors have put forward a lot of factors affected on the accounting system in general and responsibility accounting in particular such as: Type of self-proclamation and behaviour, scope of business (revenue, total of asset, number of employee) , position of administrator, human factor...

Kellogg (1962) studied the development of RA and looked at the relationship between RA with organizational structure, cost accounting, cost estimation, cost control. Accountants are responsible for presenting and defining the concept of management accounting in a more comprehensive way. Accountants responsible, organizational responsibility, cost accounting, operational budget control are combined to meet management requirements. Accountants have close contact with cost accounting. One of the main goals of accountancy is to control costs at the grassroots level. Any proposal to allocate costs to lower levels should be provided by special analysis reports (Kellogg, Martin N. (1962)).

In 2008, the author of Rowe Casey, Birnberg, Jacob G. and Shields, Michael G pointed out practical evidence of the design of accounting goals or redesign in general, accountability in particular depends on the level , goal and pace of organizational change. When there is a change in the level, purpose, speed of the organizational change process, the financial performance of the managers in the responsibility centers may change. The study also found that the use of accountancy to manage liability centers is an important method for achieving business goals, (Rowe, Casey, Birnberg, Jacob G., and Shields, Michael D. (2008))

In 1981, author Ahmed Belkaoui explored the relationship of self-disclosure and attitudes toward accountability, and explored the relationship between self-presentation and attitudes toward accountability. In this study, the author uses a quantitative method with 55 questionnaires sent to Canadian government officials. The author developed a self-published set of observations and measures of 32 variables. The results of factor analysis of self-presentation include five factors and self-expression that are directly related to attitudes and accountability (Belkaoui, Ahmed (1981)).

Joe E. Dowd (2001) explores the impact of products on accountability at power companies. To test the relationships, the author conducted an analysis of data collected from 31 Texas power companies. The results show that the more heterogeneous the product and the more varied the use of production technologies, the greater the level of collection and reporting costs, the more cost centers and The accounts cost more (Dowd, Joe E. (2001)).

In this study, the author uses enterprise size factors by Zahirul Hoque and Wendy (2000) to test the influence of these factors on responsibility accounting

2.4. Research Methods

Research on using the measurement scale included 43 variables on measuring the level of responsible accounting application of Hanini (2013) [4] and developing more new variable. In order to research on 43 these variables and new variables on developing more is realiable, suitable to Vietnam Cement Manufactured Enterprises whether or not, research will be applied with Cronbach Alpha verification on verifying the scale of measurement

In this study, the author uses enterprise size factors by Zahirul Hoque and Wendy (2000) and level of manager education to test the influence of these factors on responsibility accounting

This paper applies quantitative research by utilizing 210 responses of questionnaire sent to Vietnam’s business managers through hard copy and google form. These include members of management board, directorate, heads of different departments, construction leaders, etc in construction enterprises in Vietnam. There were 118 responses, accounting for 58%.

After collecting responses, the authors purified, coded and used SPSS 22 to anayze collected data.

3. Results and Discussion

The research used data from 210 copies of questionnaire sent to managers such as members of management board, directorate, heads of different departments, construction leaders of construction enterprises in Vietnam with 118 collected responses. After excluding invalid responses, the rest 103 ones were utilized with SPSS to give the following results:

Cronbach alpha analysis:

Table 1: Cronbach's Alpha result

Cronbach's Alpha	N of Items
,957	46

(Source: author’s data processing result)

Cronbach's Alpha analysis shows that Cronbach's Alpha = 0,957, which means variables are reliable and the result of general variable in table 2 proves indispensibility of these variables

Component analysis result:

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy,		,859
Bartlett's Test of Sphericity	Approx, Chi-Square	2141,499
	Df	91
	Sig,	,000

(Source: author’s data processing result)

Table 3: Component rotation results

	Component						
	1	2	3	4	5	6	7
A1				.947			
A2				.871			
A3				.838			
A4				.947			
A5				.947			
A6				.887			
A7				.900			
B1					.891		
B2					.840		
B3					.899		
B4					.933		
B5					.942		
B6					.942		
C1						.911	
C2						.916	
C3						.893	
C4						.898	
C5						.905	
C6						.905	
D1			.925				
D2			.916				
D3			.918				
D4			.922				
D5			.921				
D6			.938				
D7			.955				
E1							.902
E2							.902
E3							.892
E4							.867
E5							.835
F1	.952						
F2	.917						
F3	.915						
F4	.928						
F5	.950						
F6	.936						

	Component						
	1	2	3	4	5	6	7
F7	.915						
F8	.943						
G1		.948					
G2		.935					
G3		.929					
G4		.937					
G5		.936					
G6		.939					
G7		.955					

(Source: author's data processing result)

Result of varimax rotation clarifies data from 7 components

***Responsible accounting and training level of the administrator**

Table 4: Test ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Organizational structure divided	Between Groups	6.268	3	2.089	2.610	.006
	Within Groups	79.247	99	.800		
	Total	85.515	102			
Authority divided	Between Groups	12.557	3	4.186	3.827	.012
	Within Groups	108.278	99	1.094		
	Total	120.835	102			
Distribute cost and revenues	Between Groups	2.395	3	.798	.668	.004
	Within Groups	118.323	99	1.195		
	Total	120.718	102			
Prepare estimates budget	Between Groups	6.479	3	2.160	1.961	.012
	Within Groups	109.035	99	1.101		
	Total	115.515	102			
Use estimates budget	Between Groups	7.631	3	2.544	3.145	.029
	Within Groups	80.078	99	.809		
	Total	87.709	102			
Use reports	Between Groups	9.704	3	3.235	4.152	.008
	Within Groups	77.131	99	.779		
	Total	86.835	102			
Incentives system	Between Groups	10.712	3	3.571	3.819	.012
	Within Groups	92.550	99	.935		
	Total	103.262	102			

(Source: author's data processing result)

Testing results show that, according to the researching sample gathered p value = 0.000-much smaller than 0.05 level of significance, so the hypothesis of Ho is rejected, meaning that application of responsible accounting in the Cement Manufactured Enterprises have different training levels will vary in a statistical sense. Combined with the average value, we can see that the higher training level of administrators, the higher ability to apply with responsibility accounting in Enterprise

***Responsible accounting and average number of workers in enterprise**

Table 5: Test ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Organizational structure divided	Between Groups	.129	1	.129	.152	.007
	Within Groups	85.386	101	.845		
	Total	85.515	102			
Authority divided	Between Groups	.246	1	.246	.206	.001
	Within Groups	120.588	101	1.194		
	Total	120.835	102			
Distribute cost and revenues	Between Groups	1.296	1	1.296	1.096	.012
	Within Groups	119.422	101	1.182		
	Total	120.718	102			
Prepare estimates budget	Between Groups	.024	1	.024	.021	.006
	Within Groups	115.491	101	1.143		
	Total	115.515	102			
Use estimates budget	Between Groups	1.669	1	1.669	1.960	.015
	Within Groups	86.039	101	.852		
	Total	87.709	102			
Use reports	Between Groups	1.314	1	1.314	1.552	.026
	Within Groups	85.520	101	.847		
	Total	86.835	102			
Incentives system	Between Groups	1.408	1	1.408	1.396	.024
	Within Groups	101.855	101	1.008		
	Total	103.262	102			

(Source: author's data processing result)

Testing results show that, according to the researching sample gathered p value = 0.000-much smaller than 0.05 level of significance, so the hypothesis of Ho is rejected, that means the application with responsible accounting in Vietnamese Cement Manufactured Enterprise with an average number of workers is different, it will be different in a statistically meaningful way. Combined with the average value shows the higher number of workers in

average of Vietnamese Cement Manufactured Enterprises, the higher responsible accounting application will be in a statistically meaningful way.

***Responsible accounting and average revenue of Enterprise**

Table 6: Test ANOVA

		Sum of	df	Mean	F	Sig.
		Squares		Square		
Organizational structure divided	Between Groups	.846	3	.282	.330	.004
	Within Groups	84.669	99	.855		
	Total	85.515	102			
Authority divided	Between Groups	4.163	3	1.388	1.177	.032
	Within Groups	116.672	99	1.179		
	Total	120.835	102			
Distribute cost and revenues	Between Groups	2.449	3	.816	.683	.045
	Within Groups	118.269	99	1.195		
	Total	120.718	102			
Prepare estimates budget	Between Groups	1.404	3	.468	.406	.049
	Within Groups	114.111	99	1.153		
	Total	115.515	102			
Use estimates budget	Between Groups	1.750	3	.583	.672	.016
	Within Groups	85.959	99	.868		
	Total	87.709	102			
Use reports	Between Groups	9.971	3	3.324	4.281	.007
	Within Groups	76.864	99	.776		
	Total	86.835	102			
Incentives system	Between Groups	2.312	3	.771	.756	.022
	Within Groups	100.950	99	1.020		
	Total	103.262	102			

(Source: author's data processing result)

Testing results show that, according to the researching sample gathered as p value = 0.000-much smaller than 0.05 level of significance, so the hypothesis of Ho is rejected, that means the higher application of responsible accounting in Vietnamese Cement Manufactured Enterprises have different average turnover will vary in a statistically meaningful way. Combined with average values shows when the higher business revenue, the higher application with responsible accounting in enterprise.

***Responsible accounting and total of average asset of Enterprise**

Table 7: Test ANOVA

		Sum of	df	Mean	F	Sig.
		Squares		Square		
Organizational structure divided	Between Groups	9.224	3	3.075	3.990	.010
	Within Groups	76.290	99	.771		
	Total	85.515	102			
Authority divided	Between Groups	15.858	3	5.286	4.985	.003
	Within Groups	104.977	99	1.060		
	Total	120.835	102			
Distribute cost and revenues	Between Groups	11.191	3	3.730	3.372	.021
	Within Groups	109.527	99	1.106		
	Total	120.718	102			
Prepare estimates budget	Between Groups	6.087	3	2.029	1.836	.046
	Within Groups	109.427	99	1.105		
	Total	115.515	102			
Use estimates budget	Between Groups	8.638	3	2.879	3.605	.016
	Within Groups	79.071	99	.799		
	Total	87.709	102			
Use reports	Between Groups	19.272	3	6.424	9.413	.000
	Within Groups	67.563	99	.682		
	Total	86.835	102			
Incentives system	Between Groups	12.130	3	4.043	4.392	.006
	Within Groups	91.132	99	.921		
	Total	103.262	102			

(Source: author's data processing result)

Testing results show that, according to the researching sample gathered as p value = 0.000-much smaller than 0.05 level of significance, so the hypothesis of Ho is rejected, that means the application of responsible accounting in Vietnamese Cement Manufactured Enterprises have total assets of different average will vary a statistically meaningful way. Combined with average values shows the higher total assets of business, the higher ability to apply with responsible accounting in Enterprises.

Thus, results of testing on data in Vietnamese Cement Manufactured Enterprises shows:

- Training level of managers in Vietnamese Cement Manufactured Enterprises impacts on the responsible accounting, the higher training level of administrators, the higher ability to apply with the accounting in enterprises

- Size (Total assets, revenue, number of employees) of Vietnamese Cement Manufactured Enterprises have an impact on responsible accounting in a statistically meaningful way, the greater enterprises in scale the higher ability to apply with the aspects of responsible accounting

4. Conclusions and Policy Implications

As the business development of the business grows, the higher the level of decentralization and decentralization of the business unit. Research shows that as the size of the business grows, the application of accounting aspects of responsibility accounting becomes clearer. Once the powers and responsibilities are clearly defined, management structures will appear and each will create a range of responsibilities in which individuals can make their own decisions. Accountants provide information that helps executives accomplish their tasks assigned to achieve common goals of the business.

First and foremost, cement manufacturing enterprises should pay close attention to management accounting in general and accountability in particular. In addition to businesses that are interested in accountancy, there are also companies that do not pay sufficient attention to the tools of accounting management responsibility in the enterprise. This actually makes it difficult for the enterprise itself in the process of operating and managing the business. Therefore, accounting for corporate responsibility is very important for the survival and development of enterprises in the current competitive conditions as fierce.

The results of the study show that the higher the level of management, the higher the tendency to apply accountancy in order to improve the performance of enterprises, improve the competitiveness of enterprises. Therefore, raising the knowledge and training level of the managers in the cement production enterprises is very necessary. Therefore, Vietnamese cement manufacturers need to work closely with universities and training institutions in the training of students. Enterprises should cooperate to help schools to practice skills for learners, to create conditions for students to practice, to practice, even to work part-time. It is necessary to create conditions for students to study, study and practice right in the finance and accounting sections of enterprises. Cement enterprises should also be involved in teaching and learning activities in the school: To contribute ideas to the development of plans, programs for human resources training, accountancy and supply Data, actual data on accountability for training closely with the actual work of the business.

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Lean Accounting Modern Management Tools in Vietnamese Business

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Abstract

Keeping abreast with the industry revolution of 4.0 mentioned in every aspects of life, Accounting in general and Management Accounting in particular, are constantly evolving and integrating with modern industrial processes to help administrators for effective and reasonable means of management: Lean Accounting is a management model that focuses on utilizing the human or organization intelligence to minimize the prodigal cost. Lean management uses the system of tools and methods such as 5S, Kaizen, JIT, ... in order to reduce the costs in manufacturing. On the basis of Lean Manufacturing, Lean Management, the article does research on Lean Manufacturing, the system of tools and methods of Lean Accounting, from which some solutions are proposed to be applied in in Vietnamese enterprises.

Keywords: *Lean accounting, Lean management, Lean manufacturing*

1. Introduction

1.1. Lean Accounting Concept

Lean accounting is defined as an accounting model employed by enterprises applying streamlined production process. This model involves methods like organizing and maintaining value streams, changing the techniques of inventory valuation and adding some non-financial information into the company's financial statements.

Lean accounting is the accounting model applied to enterprises applying streamlined production process. This model includes methods such as organization and management of value streams, change of inventory valuation techniques and addition of some non-financial information into the company's financial statements.

Maskell's research provided the theoretical framework as an example for lean manufacturing companies who choose a lean accounting method in place of traditional accounting. The development of the 4-step accounting model has been one of the most valuable contributions: (1) maintain the current accounting system and control methods, but start cutting down costs that are clearly obvious and visible within the production process; (2) cut down on transactions as well as unnecessary expenses in the production review process as well as try to reduce the amount of unfinished products; (3) link waste minimization with the current accounting cycle as well as sales, production and distribution cycles to be performed in a more general manner; (4) progressively transitioning operations with new cost calculations in accordance with the steps set out above for complete production. This model suggests changes that need to be made in the accounting system along with lean changes being deployed at different points in the organization.

In line with lean manufacturing, management requirements and providing information to value chain managers, traditional accounting is no longer appropriate, requiring lean accounting to be established. Horngren (2009) and Garrison (2010) discussed and underlined the basics of lean accounting with such criteria as Inventory, Just in Time, Target Costing. The principles of lean accounting are very different from traditional accounting, with streamlining accounting's view of the value for customers rather than for the benefit of shareholders.

The difference between traditional accounting and lean accounting is streamlined by value chains rather than by functions. A value chain is a sequential order process from ordering to delivery. Designed by a value chain with diverse and extensible functions such as: manufacturing, engineering, maintenance, sales, after sales, accounting, human resources and delivery.

1.2. The purpose of Lean Accounting

- To submit to performance measurement and cost information to the value stream leaders to provide them that control effectively the flow of value and support continuous improvement

- To provide information for cost reporting and measurement of performance to senior employees

- To provide related cost information this will be recorded in accounting and the income statement

- Lean accounting aims to provide useful information for working actively to implement lean production manufacturing process and maintain.

1.3. Stages of Lean Accounting

Lean Accounting should be applied in parallel with consistently implementation of lean thinking and lean manufacturing techniques. For the transition to lean accounting firstly, need to know what path we are in the maturity stage of lean manufacturing and than a maturity path should be selected accordingly (Maskell & Baggaley, 2004)

2. Literature Review/ Theoretical Framework and Methods

Lean accounting is defined on the basis of lean production. Lean production is derived from the system of Japanese car manufacture industry in the 1970s – 1980s. Its main purposes are eliminating waste, reducing the demand for inventory management and optimizing the quality of management decision with the least cost in the output. A research for the performance in the car assembly plants had led to the widespread application of fine motor activities in many different industries (Womack and Jones, 1996; Liker, 1998; Hendersen and Larco, 1990). Using the lean ideas in many industrial fields, Womack and Jones found out 5 general, outstanding lean principles. This implementation supports the aims of waste elimination in non-value-adding work, attempt to reduce cost to reach the perfection by continuous improvement. These principles are identified as follows:

Customer Value: The main principle of lean manufacturing is defined by the final customer, value is evaluated in particular items, particular customer with particular price (Womack and Jones, 1996). As usual, product value is created by manufacturers, yet, with reference to this viewpoint, customers are the key to this value. All of the non-value work that doesn't bring about the adding value for customer, despite the manufacturers' view of its worth to customers, is regarded as waste and needs to be eliminated.

Value stream: It is the set of all specific activities necessary for specific products, through 3 management tasks: from the design to the final consumption, including order, material handling, production, and transportation (Womack and Jones, 1996). Lean Management eliminates the waste in every activities mentioned above.

Flow: Any wasteful operations will be eliminated, while the rest of them will be organized into a stream. Creating a continuous, fast and flexible flow of production in order to avoid or eliminate waste, thus, supply productivity and quality. This means to change from traditional organization towards a holistic organization.

Pull: When value steps are organized into flows, material flows are controlled by two Push-pull methods. Traditional production methods tend to push products through the system with the expectation that consumers will buy the product. Lean methods use pull method, only create materials when necessary, meeting the short-term needs of customers, not redundant.

Perfection: When a company selects lean production, it will be a continuous improvement process. Promoting the reduction of time, space, cost wasted, lean production is the philosophy of continuous improvement.

There are many associated tools and techniques, such as: Value stream mapping, 5S, Visual management, cellular manufacturing, Just in Time, kanban (pull) systems, preventative maintenance and kaizen (continuous improvement) activities (Bicheno, 1998; Rother và Shoot, 1998). Adopting a lean manufacturing promises significant improvements in productivity, quality and delivery, resulting ultimately in substantial cost savings. Furthermore, companies are now beginning to realise that traditional costing and

management accounting methods may conflict with the lean initiatives they are implementing (Womack và Jones 1996).

3. Results and Discussion

Based on foreign research, the article systematizes some of the tools used in lean accounting and factors affecting the use of lean accounting in the enterprise. From that, the article proposes some solutions to the problems in using lean accounting in Vietnamese enterprises, as well as the base for further research related to the author's area of interest - lean accounting.

3.1. Instrument of Lean Accounting

Yvonne Ward & Andrew Gaves (2012), research and examines the costing and accounting requirements for Lean New product Introduction, Lean Manufacturing and Extended Value Stream:

Figure 1: Tools of Lean Accounting

New product Introduction	Manufacturing	Extended Value Stream
<ul style="list-style-type: none"> • Life-cycle costing • Target costing 	<p><i>Product costing and overhead allocation</i></p> <ul style="list-style-type: none"> • Activity-based costing (ABC) • Product costing in cellular environments • Time-based costing • Value stream costing <p><i>Operational control</i></p> <ul style="list-style-type: none"> • Non-financial performance measures • Value stream box scores • Throughput accounting • Backflushing <p><i>Costing for continuous improvement</i></p> <ul style="list-style-type: none"> • Kaizen costing • ABC and costing reduction • Costing of waste and waste indices • Cost of quality • Inventory reduction 	<ul style="list-style-type: none"> • Activity-based costing for internal supply chains • Supply chain target costing • Supply chain kaizen costing • Total cost of ownership

Source: (Yvonne Ward & Andrew Gaves (2012), University of Bath, School of Management)

Two valuable techniques that can be applied with the aim of enhancing value and reducing product costs throughout the life-cycle are target costing and life-cycle costing.

Target costing is believed to be the most important development to support the commitment to low cost production (Sakurai and Scarborough, 1997). Target costing is a multi-disciplinary tool for reducing total costs and seen as being particularly applicable for multi-product, small-production-run firms (Monden and Hamada, 1991). It is applied at the

planning and design stages of new products with the involvement of R&D, Engineering, Production, Marketing and Finance.

Target costing = Market-driven Target Price *less* Desired profit Margin

Life- cycle costing: This method is suitable because the cost of the product includes not only the cost of procurement inputs but also the sum of all costs incurred during the life cycle of the product. In this stage, it is an effective tool to capture the full costs associated with high-valued products, from research, development, production, operation, maintenance and support; removal and processing. Besides, it is able to forecast the costs incurred during the entire operation to ensure the reasonable adequacy and to provide information to meet customer demand and make decision for the investor for the business.

According to Kaplan (1988), in this phase, management accounting has three goals: inventory determination for financial statements, product costs and operational control. With lean accounting, it is important to focus on three objectives: Product Costs, Operational Control, and Continuous Improvement. The accounting tools used are: operating expenses, component costs, cost over time and cost along the value chain. With the utilization of these cost management tools, it is possible to control, as well as allocate and determine the accrued costs of the product in a reasonable, accurate and complete manner. Ensuring effective information is to help interested parties as well as managers to make decisions and define business strategies for products and organizations.

Extended Value Stream: In this phrase, Activity-Based costing, Kaizen, in terms of aimed expense or total cost determination is carried out in accordance with supply chain. Therefore, it is essential to define a reasonably lean supply chain, cut down on the extravagant expenses and set up cost management tools on the basis of each activities like cost determination in delivery.

3.2. Factors that affect the implemenation of lean accounting

According to foreign research there are various barriers to implementation of lean accounting, Roya Darabi (2012) used questionnaire data to reseach. The results showed that cultural, technical, organizational and economic factory were barriers to implementation of accounting. Moreover, regarding the four groups of factors, technical factors had the highest degree of impeding and economic factors the lowest. Based on the results and findings of the study, the following suggestions are made:

Cultural: Cultural factors impede the performance of streamlined accounting, because different perceptions, beliefs, and behaviors can have different impacts on lean accounting. Cultural alteration is necessary to successfully implement lean accounting, which requires unity, solidarity from the leader to staff in conformity with cultural change, such as teamwork, for fully agreement. Lean environments with production cells that require people to be multi-skilled require only few, broadly defined pay grades.

Technical: Technical factors impede the implementation of lean accounting, so recommended that: Multi-purpose machinery and personnel with diverse skills should be used in production lines. For making senior executives and financial executives or staff aware of lean concepts, it is recommended to provide lean training inside the company.

Organizational: There is a great need to be aware of how traditional accounting is modified by lean accounting. It is essential to organize and carry out activities in the process of both material and information. The company should consider long-term strategies and long-term goals to ensure sustainable development.

Economic factory: Adequate resources for lean training should be considered in companies. Taxation laws or regulation should be administered in a way to encourage lean manufacturing executives to use the lean accounting. Customers should be made aware of their rights. In order to properly understand the cost of the lean system, it is suggested that the managers consider long-term goals of the companies and profit of the whole company during its lifetime and then decide about establishing lean.

Understanding the factors that affect the performance of lean accounting will help executives to implement lean accounting in the business successfully and avoid the risks and limitations which are not worth within the performance.

4. Conclusions and Policy Implications

The application of lean accounting in Vietnamese enterprises:

First of all, to use lean accounting in Vietnamese enterprises, administrators need to master the principles and thinking of lean production and lean management. Based on the lessons from many countries in the world, which have applied lean production, lean management and lean accounting, Vietnamese enterprises need to understand that the application of lean accounting is not merely the administrative tools but a whole process. To apply successfully, enterprises must set up mind, knowledge and understanding from the manager to the staff directly in producing and delivery services on the process of streamlining. Enterprises need to determine the use of lean requires the application of the process, organizational structure, corporate culture...

Lean accounting can be applied in many different fields of operations from production to services, indicators and methods built in accordance with the characteristics and practices of each enterprise. Depending on the different areas, the accounting lean is applied flexibly and appropriately. In the field of services, lean accounting should first aim to improve the process. Typically, the service delivery process is tailored to fit the resources and characteristics of the business, not to the customer. Therefore, it often takes customers a lot of time and does not bring much value to them. Lean accounting and its tools help businesses deliver customer-oriented services that are the basis for design, process development, and service delivery. In the field of production, it is necessary to build a lean production model based on the principles of: Creating value for customers, Manufacturing towards the needs of customers and Bring many desired values for Consumers; Cutting costs as well as non-value activities; Build up the value chain from research, product design,

manufacturing, ordering to customer service, maintenance... to ensure that costs or operations are not extravagant. Applying the pull method, customer orientation and customer demands are needed for design and manufacturing. Continual improvement is evolving towards continuous improvement throughout the implementation process. Accompanying the lean production process, lean administration is also set up, including lean accounting. With the appropriate use of modern accounting management tools such as: Account-Based Costing (ABC), Kaizen, Target Costs... at each phase to reduce wasted expense, create value for the customer and towards perfect improvement through value chain and pull method.

In order to apply lean accounting successfully and efficiently, enterprises should make preparations that require synchronization from production to administration, from management, thinking, methods and tools, direct implementation staff and service delivery. It is necessary to train staffs to understand and instill a lean thinking. Management officials commit to accompany the lean process, investing in systems from technology and human resources fit with each enterprise for implementation of lean process.

On the basis of inheriting, learning and drawing experience from the research as well as the reality of the enterprises that have succeeded or failed to apply lean accounting in Vietnam and in the world, administrators study the influencing factors as well as the barriers when applying lean accounting, combined with the characteristics of the real financial situation in the enterprise so as to build a suitable streamlined accounting with high efficiency. For example, with services such as banks and hospitals, when using lean accounting, it is important to improve the process by reducing the cost of wasting time, such as waiting times of clients, patients, repeated activities and prolix procedure. The goal of process improvement is to create uninterrupted flow, uninterrupted operations among employees so that the customers might not wait. To the manufacturing enterprises, this means reducing the extravagant waste, such as high levels of inventory goods, the cost of rotation, storage, cutting down on the wasted operations that do not create value, improving the efficiency, reducing production and delivery time. Businesses need to be aware of the issues to be dealt with promptly at every stage of the production process, from which appropriate and effective management tools are chosen.

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The Effect of Contingency Elements on Environmental Management Accounting Implementation in Manufacturing Firms in Vietnam

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Abstract:

This study aims to evaluate the effect of contingency elements on environmental management accounting implementation in manufacturing firms in Vietnam. The study used a questionnaire to survey 279 manufacturing firms in Vietnam and the use of structural equation modeling (SEM). Results show that the implementation of environmental management accounting is only at a moderate level (3.11 in the five-point Likert scale) and firms do not focus on the analysis of environmental information, and the implementation of internal reports on the environment is low. The awareness of business environmental uncertainty and the environmental strategy have positive effects on environmental management accounting implementation, and the task complexity adversely influences the implementation of environmental management accounting, at a 1% significance level. This evidence implies that in order to promote environmental management accounting implementation in manufacturing companies in Vietnam, they should encourage the implementation of the environmental strategy and increase the awareness of business environmental uncertainty and they are necessary to reduce the difficulties and complexities in the process of implementing environmental management accounting.

Keywords: *Business environmental uncertainty, Contingency theory, Environmental management accounting, Environmental strategy, Task complexity*

1. Introduction

As the world endeavours to respond to increasing pressure from various stakeholders to reduce the impact of its activities on the environment, the need for new techniques to assist managers in meeting the challenge of sustainable development. Environmental management accounting which appeared in the 1970s, is able to provide information to meet these requirements (Mohd et al., 2012). By providing data on the physical and monetary elements of environmental performance, it has been suggested EMA will provide information that can

be used by manager to assess opportunities for economic and environmental improvement (Schaltegger and Burritt, 2000).

Nowaday, theoretical explanations for the current state of EMA development and EMA implementation are still lacking (Qian et al., 2011). Recent studies have demonstrated contingency theory to have considerable potential to further current knowledge concerning EMA implementation (Bouma and Van der Veen, 2002; Qian et al., 2011). Drawing on contingency theory, a research framework was developed from existing literature. Based on documents related to EMA implementation, three main variables referred to organizational context were selected for the analysis of EMA implementation in manufacturing companies in Vietnam, namely: environmental strategy, awareness of business environmental uncertainty and task complexity. These variables are chosen due to their importance in previous studies or their significant impact on EMA implementation.

In Vietnam, according to research of Pham Thi Bich Chi et al. (2016), EMA is not yet popular in companies and only a few number of studies into EMA were carried out. These studies focus primarily on concepts, classifications, methods of environmental costs and incomes determination and accounting treatment for environmental costs, incomes, or lessons learned from other countries in order to form the guidelines on EMA, or these studies mainly focus on accounting treatment for environmental costs in companies operating in a specific field. In foreign countries, Ferreira et al. (2010); Chang and Deegan (2010); Qian et al. (2011); Al kisher (2013); Christ and Burritt (2013); Mokhtar et al. (2016) studied a large number of factors of organizational context that affect the technical and administrative improvements of companies. The results of some these studies had found revealed factors that affect the implementation of EMA in organizations. However, most of these studies ignored the indirect effect which factors may have on EMA implementation (Qian, 2007). The result is a significant gap in academic knowledge concerning EMA, and there is a clear need to develop a greater understanding of the variables that influence and drive EMA adoption at the organisational level.

Based a questionnaire survey this study sought to obtain a greater understanding of contingent factors influencing EMA in organisations, to extend current knowledge about the effect of contingency elements on EMA implementation.

The remainder of this paper is arranged as follows. Sections 2 contain discussion concerning the overview of EMA and the development of the research framework that was suggested. Sections 3 and 4 concerning the methods employed in the research, and the data analysis. Finally, the paper then concludes with discussion of the results and overall conclusions, including suggested directions for future research.

2. Theoretical background and the research model suggest

2.1 The overview of environmental management accounting

2.1.1 Definitions of environmental management accounting

The definitions of environmental management accounting are widely diverse (for example: Bennett and James, 1998; Bartolomeo et al., 2000; UNDSO, 2001; Jasch, 2003; Bouma and Correlje, 2003; IFAC, 2005; Staniskis and Stasiskiene, 2006). Although there are some differences in definitions of management accounting in terms of scope of application, most definitions explain that environmental management accounting is an additional information system for management accounting. It is not a separate system, but it helps to improve the management accounting system.

The definition provided by Bennett and James (1998) is chosen for the objectives of this research. Accordingly, “Environmental management accounting is an information system which provides monetary and non-monetary information to improve and evaluate economic and environmental efficiency of a company”. This definition highlights the importance of information generated by environmental management accounting in order to enhance the financial and environmental efficiency of an organization.

2.1.2 Subject of Environmental management accounting

According to IFAC (2005), subjects of environmental management accounting include:

- Accounting for environmental cost
- Accounting for environmental revenues and incomes
- Accounting for resource efficiency assessment

2.2 Contingency theory and basic elements of contingency theory

Contingency theory underscored by the assumption that organisational activity is a direct result of organisational context, contingency theory posits that when an appropriate match, or fit, between accounting activities and context is achieved, organisational performance is likely to be enhanced (Chenhall, 2003). Under contingency theory, an enterprise interacts with, adapts to and seeks to control its environment in order to survive (Thomas, 1991, p.40). Burrell and Morgan (1979, p.46) illustrated this when stating “contingency theory postulates that the effectiveness of the organization in coping with the demands of its environment is contingent upon the elements of (its) various subsystems being designed in accordance with the demands of the environment with which they interact”.

Based on documents related to environmental management accounting implementation, three main variables referred to organizational context were selected for the analysis of environmental management accounting implementation in manufacturing companies in Vietnam: awareness of business environmental uncertainty, environmental strategy, and task complexity. In which:

- Awareness of business environmental uncertainty is considered to be awareness of the inability to control or accurately forecast the future status of the business environment.

- Environmental strategy is a comprehensive plan related to the environmental performance of a company, with the purpose of deploying resources to establish a favorable environment for the company, including: complying with environmental regulations,

producing environmental protection solutions, aiming at providing environmentally friendly products and achieving environmental certification.

- Task complexity is perceived as the level of difficulty in the process of implementing environmental management accounting (in terms of cost, time, effort, the complexity to solve problems related to the task), and the requirements of knowledge needed to perform the task.

2.3 Hypothesis development

According to Abdel-Kader and Luther (2008), contingency theory provides the basis for explaining the influence of organizational context variables on the implementation of management accounting. Birkin (1996) argues that EMA is a further development of management accounting. Combining the two arguments of these two studies, Christ and Burritt (2013), in the study "Environmental accounting: the importance of Contingency variables for application" argues that the contingency theory provides an appropriate lens for examining the impact of organizational context variables on EMA implementation.

Business environment is a factor referred to organizational context in studies applying contingency theory (Chenhall, 2003). If an organization experiences considerable changes in business environment, it may need to reform the accounting system so as to provide more information for decision-making in order to minimize the impact of the business environment and manage related costs (Gul and Chia, 1994). Awareness of the business environmental uncertainty is found to be a great explanatory variable for implementing EMA in a number of studies like Chenhall (2003); Qian et al. (2011); Nguyen Thi Hang Nga (2018).

Parker (1997) suggests environmental accounting may be contingent on strategy for environmental management. Further support for the inclusion of environmental strategy within the research framework can be found in the studies of Nguyen Thi Hang Nga (2018); Qian et al. (2011) and Qian and Burritt (2009) who found the level of proactivity inherent in environmental strategies to have a direct impact on environmental accounting in local government waste management. Drawing on prior research it was reasonable to assume EMA implementation would be associated with the extent to which organisations were proactive and integrated the environment into their broader corporate strategic plans and goals (Lee, 2011; Parker, 1997).

The work of an organization (often referred to as organizational task) relates to the type of work done by an organization (Daft and Macintosh, 1978). As regards environmental management accounting, the findings of Woodward (1965); Chang and Deegan (2010); Qian (2007) indicate that environmental management accounting implementation has a strong relationship with task complexity. According to Keit (2011), Dikgwatlhe (2013), and Kotzee (2014), task complexity is perceived as the complexity associated with the implementation of environmental management accounting. Therefore, as the task complexity increases, it will hinder the implementation of environmental management accounting.

In addition to the three main elements of contingency theory that affect the implementation of environmental management accounting, According to Gupta and Govindarajan (1984), an organization can choose different strategies to adapt to business environmental uncertainty. So, business environmental uncertainty will affect a company's environmental strategy which, in turn, will affect the implementation of EMA.

As such this study considered the following hypotheses:

H1: Awareness of business environmental uncertainty has direct effect on environmental management accounting implementation.

H2: Environmental strategy has direct effect on environmental management accounting implementation.

H3: Task complexity has direct effect on environmental management accounting implementation.

H4: Awareness of business environmental uncertainty has direct effect on Environmental strategy.

H5: Awareness of business environmental uncertainty has indirect effect on environmental management accounting implementation, through the mediating role of Environmental strategy.

3. Research method

In order to explore the relationships hypothesised in the research framework. The study used a questionnaire to survey 279 manufacturing firms in Vietnam and the use of structural equation modeling (SEM). The questionnaire to survey was selected as it allowed for the collection of data from a large sample at a relatively low cost (Dillman, 2007).

The scale of implementation environmental management accounting is abbreviated to KTQTMT, was measured using an instrument adapted from Ferreira et al. (2010); Christ and Burritt (2013); Al kisher (2013); Jalaludin et al. (2016). The instrument incorporated nine items each measured on a five point Likert scale designed to gauge the extent to the environmental management accounting implementation. Respondents were asked to indicate the extent to which they agreed with each of the following statements (1 = never; 5 = always)

Table 1: The scale of environmental management accounting Implementation

Encode	Item
KTQTMT1	Identification of environment-related costs.
KTQTMT2	Estimation of environmental related contingent costs.
KTQTMT3	Identification of environment-related income.
KTQTMT4	Allocation of environment related costs.

KTQTMT5	Product life-cycle cost assessments.
KTQTMT6	Product material flow cost accounting.
KTQTMT7	Product impact analyses (assessment of the environmental effect of product)
KTQTMT8	Product environmental performance analyses.
KTQTMT9	Implementation environmental reports.

Source: Al kisher (2013)

The scale of awareness of business environmental uncertainty (abbreviated to MTKD) was measured using an instrument adapted from Chang (2007). The instrument incorporated five items each measured on a five point Likert scale designed to gauge the extent to the awareness of business environmental uncertainty. Respondents were asked to indicate the extent to which they agreed with each of the following statements (1 = strongly disagree; 5 = strongly agree)

Table 2: The scale of awareness of business environmental uncertainty

Encode	Item
MTKD 1	Government environmental policy will change in the future
MTKD 2	Environmental resources and services will be scarce in the future
MTKD 3	The demand for green products will increase in the future
MTKD 4	Green competition in the industry will increase in the future
MTKD 5	Environmental technology in the industry will improve rapidly in the future

Source: Chang (2007)

The scale of environmental strategy which is CLMT in short was measured using an instrument developed by Qian (2007); Chang (2007). The instrument incorporated five items each measured on a five point Likert scale designed to gauge the extent to which generic, ex ante environmental concerns were integrated with the corporate strategic planning process. Respondents were asked to indicate the extent to which they agreed with each of the following statements (1 = strongly disagree; 5 = strongly agree)

Table 3: The scale of environmental strategy

Encode	Item
CLMT 1	The company have a common policy on environment
CLMT 2	The company undertakes for environmental regulatory compliance
CLMT 3	The company provides environmentally friendly products
CLMT 4	The company have plan to obtain environmental certification
CLMT 5	The company have solutions to protect the environment

Source: Qian (2007)

The scale of the task complexity is abbreviated to NVTC, was measured using an instrument adapted from Keit (2011). The instrument incorporated four items each measured on a five point Likert scale designed to gauge the extent to the complexity of the task. Respondents were asked to indicate the extent to which they agreed with each of the following statements (1 = strongly disagree; 5 = strongly agree)

Table 4: The scale of the task complexity

Encode	Item
NVTC 1	Absence of guidelines to the implementation of EMA
NVTC 2	Implementing EMA takes a lot of time and effort
NVTC 3	Implementing EMA is costly (the cost of generating outweighed the benefits)
NVTC 4	Too hard to identify the environmental costs and environmental income

Source: Keit (2011)

After data collection, the study performed descriptive statistics analysis, Cronbach's Alpha reliability test, exploratory factor analysis, by SPSS.20 software. Next, the study used AMOS.20 software to confirmatory factor analysis, regressing and testing with structural equation modeling to assess the impact of contingency factors on the implementation environmental management accounting.

4. Research results

4.1. Describe the research sample

The finding shows that the majority of the respondents are from large enterprises (total assets over VND 100 billion) represents 41.94 percent of the overall respondents; respondents from small and medium enterprises constitute 58.06 percent. In which, super small enterprises (total assets of less than VND 20 billion) and small enterprises (total assets of VND 20-50 billion) represents 35.84 percent and medium enterprises (total assets of VND 50-100 billion) represents 22.22 percent (see Table 5)

Table 5: Total Assets of enterprises

Total Assets (VND billion)	Frequency	Percentage (%)
Less than 20 billion	46	16.49%
20-50 billion	54	19.35 %
50-100 billion	62	22.22 %
Over 100 billion	117	41.94 %
Total	279	100 %

Source: SPSS data processing results

Table 6 below reveals that 65.23% of the respondents were from the Processing sector, and 19% from the manufacturing sector. Of which the processing industry includes: food; drinks; cigarette; weaving; costume; wood and bamboo products, straw, plaiting materials; paper and paper products; chemicals and chemical products; medicines, pharmaceutical chemistry and pharmaceuticals; rubber and plastics; non-metallic mineral products, electronic products, computers and optical products, and electrical equipment. Manufacturing industries include: manufacturing machinery, metal products and repairing

machinery, metal products. Enterprises operating in other sectors which includes:: Mining and quarrying, Electricity, gas, steam and air conditioning supply, water supply; sewerage, waste management and remediation activities, represents 15.77%.

Table 6: Industry sector of enterprises

Industry sector	Frequency	Percentage (%)
Processing	182	65.23 %
Manufacturing	53	19.00 %
Others	44	15.77 %
Total	279	100 %

Source: SPSS data processing results

The enterprises with state capital for account for 50% or more, represents 22.58%. The enterprises with foreign invested capital, represents for 30.47%. The rest are enterprises with other capital.

Table 7: Ownership of enterprises

Ownership	Frequency	Percentage (%)
State-owned enterprises	63	22.58 %
Foreign-invested enterprises	85	30.47 %
Enterprises with other capital	131	46.95 %
Total	279	100 %

Source: SPSS data processing results

4.2. Descriptive statistics analysis

Descriptive statistics results show that in general, the level of environmental management accounting implementation of enterprises in the sample is moderate. The average of the Environmental management accounting implementation is 3.11 on the 5-point likert scale. In particular, the highest mean value of the observed variable is 3.78 which belongs to KTQTMT1 variable (*Identification of environment-related costs*) and the lowest mean value is 2.31 belonging to the KTQTMT8 variable (*Environmental performance analyses*).

Enterprises assess the awareness of the business environment uncertainty at a relative level. The average of the awareness of business environment scale (MTKD) is 3.48. In particular, the highest mean value of the observed variable is 3.66 which belongs to MTKD1 variable (*Government environmental policy will change in the future*) and the lowest mean value is 3.26 belonging to the MTKD5 variable (*Environmental technology in the industry will improve rapidly in the future*).

Environmental strategies of enterprises are evaluated to be over average and relatively equal. The mean value of the CLMT scale is 3.52. The observed variables have an average value of 3.24 and above, the highest mean value of the observed variable is 3.69

which belongs to CLMT3 variable (*The company provides environmentally friendly products*), and the lowest mean value belonging to the CLMT4 variable (*The company have plan to obtain environmental certification*).

The task complexity scale was rated to be the highest with an average of 3.55. Meanwhile, observed variables have an average value of 3.64 and above, with the exception of observed variable NVTC4 (*Too hard to identify the environmental costs and environmental income*) which is rated to be the lowest with a mean value of 3.20.

Table 8: The average of the scale

EMA Implementation		Awareness of business environmental uncertainty		Environmental strategy		The task complexity	
Variable	Mean	Variable	Mean	Variable	Mean	Variable	Mean
KTQTMT 1	3.78	MTKD 1	3.66	CLMT 1	3.61	NVTC1	3.72
KTQTMT 2	3.64	MTKD 2	3.56	CLMT 2	3.62	NVTC2	3.64
KTQTMT 3	3.61	MTKD 3	3.42	CLMT 3	3.69	NVTC3	3.64
KTQTMT 4	3.65	MTKD 4	3.50	CLMT 4	3.24	NVTC4	3.20
KTQTMT 5	3.04	MTKD 5	3.26	CLMT 5	3.46		
KTQTMT 6	2.54						
KTQTMT 7	2.51						
KTQTMT 8	2.31						
KTQTMT 9	2.95						
Average	3.11	Average	3.48	Average	3.52	Average	3.55

Source: SPSS data processing results

4.3 Scale Reliability Test and Exploratory Factor Analysis (EFA)

4.3.1. Scale Reliability Test

The study includes 4 scales with a total of 23 observed variables. According to Hair et al. (2010), the scales meet the requirement of reliability, if it has a Cronbach's Alpha coefficient greater than 0.6 and the Corrected Item-Total Correlation of each variable observed in each scale are greater than 0.3. The test results show that the scales meet the requirement of reliability, except that the observed variable CLMT5 of the CLMT scale has a corrected item-total coefficient of 0.148, less than 0,3, so the CLMT5 observed variable will be rejected off the scale. The final result consisted of 22 observed variables for the 4 scales taken into the confirmatory factor analysis.

Table 9: Scale Reliability Test

Scale	Encode	Corrected Item Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha coefficient
Awareness of business environmental uncertainty (MTKD)	MTKD 1	.470	.794	0.799
	MTKD 2	.624	.746	
	MTKD 3	.666	.732	
	MTKD 4	.638	.744	
	MTKD 5	.556	.777	
Environmental Strategy (CLMT)	CLMT 1	.677	.764	0.824
	CLMT 2	.680	.765	
	CLMT 3	.685	.760	
	CLMT 4	.556	.821	
The Task Complexity (NVTC)	NVTC1	.504	.752	0.772
	NVTC2	.680	.657	
	NVTC3	.649	.676	
	NVTC4	.477	.770	
Environmental management accounting Implementation (KTQTMT)	KTQTMT 1	.595	.863	0.874
	KTQTMT 2	.593	.864	
	KTQTMT 3	.591	.863	
	KTQTMT 4	.613	.861	
	KTQTMT 5	.514	.870	
	KTQTMT 6	.720	.853	
	KTQTMT 7	.713	.852	
	KTQTMT 8	.680	.855	
	KTQTMT 9	.547	.866	

Source: SPSS data processing results

4.3.2. Exploratory Factor Analysis (EFA)

Scales continue to be used to perform exploratory factor analysis before conducting confirmatory factor analysis. Results of exploratory factor analysis revealed that KMO = 0,916 with Sig value. = 0,000, the factor loadings are greater than 0,5 and the difference among factor loadings of variables are all less than 0,3; Eigenvalues value stops at the seventh factor, which was 1,141, greater than 1 and the total variance explained is 67,780%, higher than 50%. Consequently, the exploratory factor analysis is appropriate.

Table 10: Pattern Matrixa

	KTQTMT	MTKD	CLMT	NVTC
Environmental management accounting Implementation (KTQTMT)	KTQTMT6	.803		
	KTQTMT8	.764		
	KTQTMT4	.721		
	KTQTMT7	.697		
	KTQTMT1	.663		
	KTQTMT3	.656		
	KTQTMT9	.534		
	KTQTMT5	.510		
Awareness of business environmental uncertainty (MTKD)	MTKD3		.761	
	MTKD4		.743	
	MTKD2		.664	
	MTKD5		.640	
	MTKD1		.517	
Environmental Strategy (CLMT)	CLMT2		.806	
	CLMT1		.775	
	CLMT3		.702	
	CLMT4		.621	
The Task Complexity (NVTC)	NVTC2			.828
	NVTC3			.753
	NVTC1			.583
	NVTC4			.574

Source: SPSS data processing results

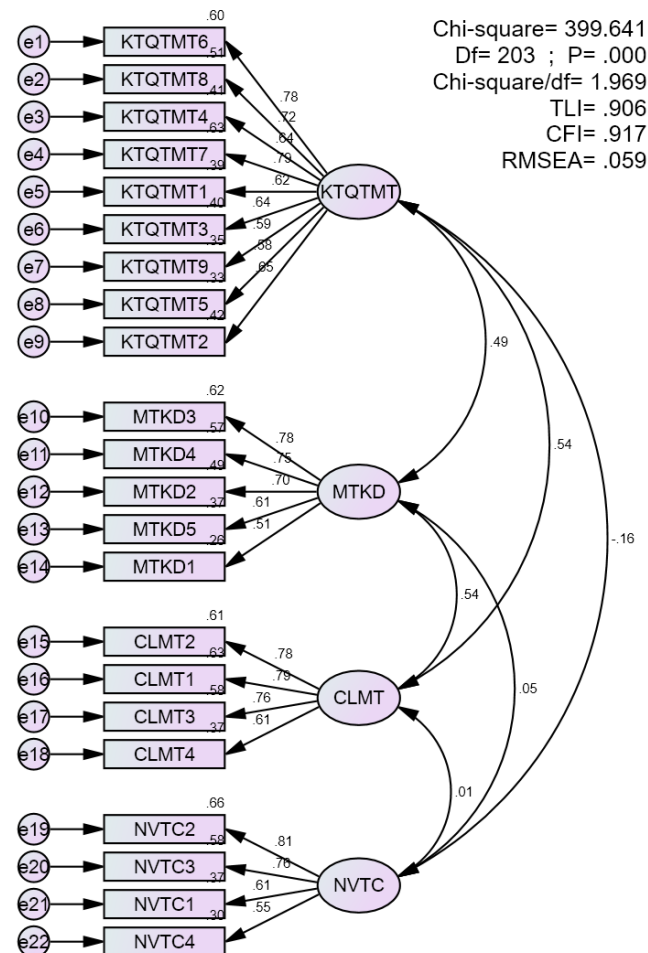
4.4 Confirmatory Factor Analysis (CFA)

Following the exploratory factor analysis, the 4 concepts with 22 observed variables will continue to be included in the confirmatory factor analysis. The standards used in this study when performing CFA are $CMIN / df \leq 3$, $TLI, CFI \geq 0.9$ and $RMSEA \leq 0.08$ (Hair et al., 2010) to estimate if the research model is in line with market data.

The result from the CFA analysis of the critical model indicates that the coefficients meet the requirement. Specifically, $CMIN / df = 1.969$ is less than 3; $TLI = 0.906$, $CFI = 0.917$, which are both greater than 0.9 and $RMSEA = 0.059$, which is less than 0.08. The minimum standardized regression coefficient is 0.512 and the maximum is 0.811 which are

therefore greater than 0.5 and are statistically significant at 1% due to the Sig value = 0.000. Thus, it can be concluded that the observed variables used to measure the concepts in the model are convergent and unidimensional.

Figure 1: The results of CFA analysis with the critical measurement model



Source: Amos data processing results.

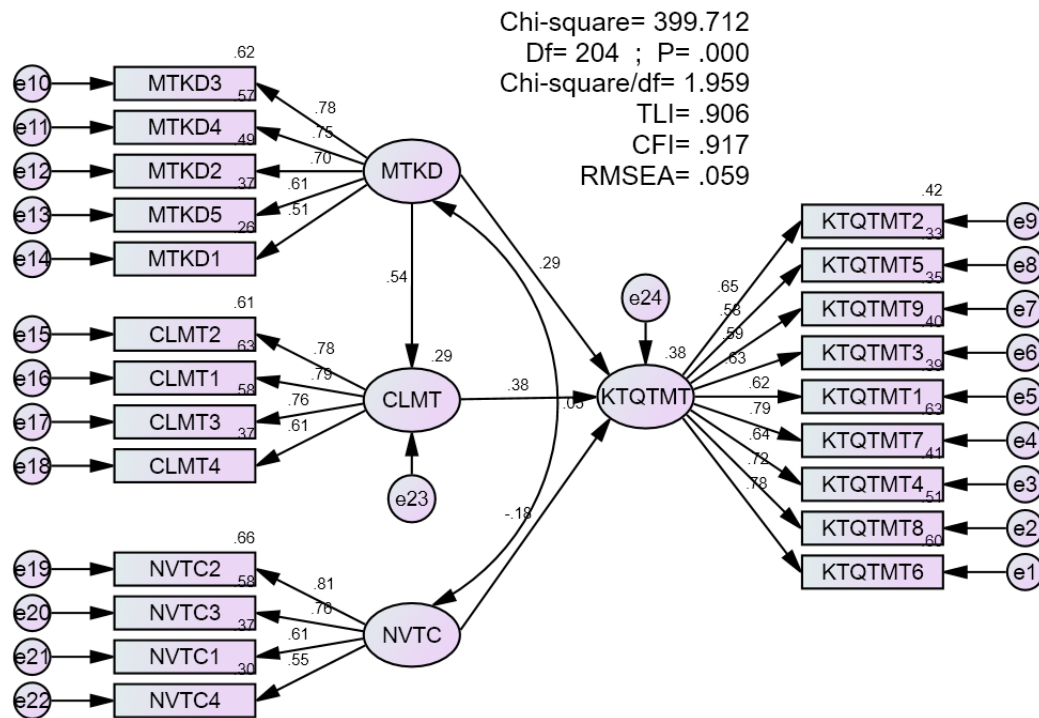
4.5 Structural Equation Modeling Analysis (SEM)

4.5.1 Theoretical model testing

After the CFA analysis meets the demand, the research conducted the test of theoretical model using the SEM model. The result of SEM model test shows that the model has df = 204 degrees of freedom, Chi-Square = 399.712; TLI = 0.906; CFI = 0.917 which means these are all greater than 0.9; RMSEA = 0.059 less than 0.08 and CMIN/df = 1.959 which is less than 3; P = 0.000. This result shows that the theoretical model is consistent with the research data. Estimation coefficients (beta coefficients) in the structural model are positive, which represents the positive relationships among the variables except for the NVTC variable which has negative beta coefficient representing a reverse relationship between NVTC and KTQMT. All of these relationships are statistically significant at the 1% level.

The standardized beta coefficients among relationships show stronger or weaker influences among variables in the research model. When considering the relationship between factors and environmental management accounting, the level of influence each factor has on environmental management accounting is arranged in decreasing order: CLMT ($\beta_{\text{standardized}} = 0.385$), MTKD ($\beta_{\text{standardized}} = 0.292$), NVTC ($\beta_{\text{standardized}} = -0.181$).

Figure 2: Result of SEM model test of standardized theoretical model



Source: Amos data processing results

4.5.2 Testing the hypotheses

✓ Tests on direct impacts

After analyzing and testing the goodness of fit of the SEM model, the next step is to test the hypotheses. Results of the estimation of causal relationship between the concepts in the research model are shown in Table 11.

Table 11: Results of testing the direct impacts

Hypothesis	Relationship		Unstandardized Coefficients	P-value	Result	
H1	MTKD	--->	KTQTMT	0.238	0.000	Accept H1 (1%)
H2	CLMT	--->	KTQTMT	0.191	0.000	Accept H2 (1%)
H3	NVTC	--->	KTQTMT	- 0.153	0.003	Accept H3 (1%)
H4	MTKD	--->	CLMT	0.566	0.000	Accept H4 (1%)

Source: Amos data processing results

The result in Table 11 shows that the relationships between direct impacts in the model are statistically significant at the 1% significance level. Moreover, there is a relationship with a negative beta coefficient showing the opposite effect, which is the relationship between NVTC and KTQTMT ($\beta = -0.153$). The remaining coefficients are greater than 0, indicating positive relationships among variables.

✓ **Tests on indirect impacts**

The results of testing intermediate impacts (indirect effects) are given in Table 12 as shown below.

Table 12: Results of testing the intermediate effects

	Hypothesis	Direct Impact (β)	Indirect Impact (β)	Result
H5	MTKD->CLMT->KTQTMT	0.191*	0.135*	Accept H5

Note: * is the 1% significance level.

Source: Amos data processing results

The findings of this study show that the contingency factors have significant impacts on the implementation of environmental economics in manufacturing enterprises in Vietnam. This result is consistent with expectations from contingency theory and is consistent with the findings of previous studies. For example, Fisher (1996) found that as business environment uncertainty increased, organizations were more likely to adopt environmental management accounting. The results of Parker (1997), Christ and Burritt (2013) find a positive relationship between business strategy and the implementation of environmental accounting. Qian (2007) also argues that the task complexity has direct effect on environmental management accounting implementation.

In addition, the indirect effect of MTKD on the implementation of environmental management accounting through the intermediary role of CLMT is also statistically significant at the 1% significance level (see Table 11). This result is in accordance with conclusions from the theory and results from previous studies. For example, Qian (2007) stated that CLKD plays a mediating role in the relationship between the awareness of business environmental uncertainty and environmental management accounting implementation.

As a result of this study, considering the relationship between factors and environmental management accounting implementation, the level of influence of each factor on environmental management accounting implementation is arranged in decreasing order: CLMT ($\beta_{\text{standardized}} = 0.385$), MTKD ($\beta_{\text{standardized}} = 0.292$), NVTC ($\beta_{\text{standardized}} = -0.181$). The impact of business environment uncertainty on lower-level environmental accounting practices (standardized regression coefficients of 0.181). This result implies that CLKD is the most important variable contributing to environmental accounting management implementation in manufacturing enterprises in Vietnam. Thus, to promote the implementation of environmental management accounting, the environmental strategy of the business should be the first issue to solve and improve. To do this, the first the enterprises

must set environmental objectives and policies, in addition, the enterprises must to providing environmentally-friendly products, and commitment to environmental compliance. The enterprises also must to provide the environmental protection solutions. In addition, to increase the implementation of environmental accounting, the enterprises also need to identify appropriate environmental strategies to adapt to the ever-changing business environment. Besides, the task complexity (NVTC) adversely influences the implementation of environmental management accounting at a significance level of 1%. Therefore, in order to promote environmental management accounting implementation, it is necessary to reduce the difficulties and complexities in the process of implementing environmental management accounting.

5. Conclusions

This study sought to investigate the level of environmental accounting management implementation in manufacturing enterprises in Vietnam. Drawing on contingency theory a research framework was developed incorporating the following contingent variables: the awareness of business environmental uncertainty, environmental strategy, and the task complexity. Overall, environmental strategy, the awareness of business environmental uncertainty and the task complexity were found to have a significant association with the implementation of EMA, as perceived by the respondents of the firms in the sample research. According to a sample of 279 manufacturing firms in Vietnam, the implementation of international environmental accounting was just average (3.11 on the 5 point likert scale) and the business only concentrated on collecting information on costs related to the environment. The analysis of information environmental and implementation of environmental reports is low level. The lowest mean value of the observed variables is 2.31 which belongs to KTQTMT8 variable (environmental performance analyses). In light of the results, which suggest many organisations are failing to engage with EMA activities, this research would be valuable to develop a deeper understanding as to why such lack of engagement is the case.

The findings of this study show that awareness of business environmental uncertainty, environmental strategy, and the task complexity have a significant impact on the implementation of environmental management accounting in manufacturing firms in Vietnam, at a 1% significance level. In addition, the impact of the awareness of business environmental uncertainty on the implementation of environmental management accounting is positive through the mediating role of environmental strategy. These results indicate that contingency theory have been very useful in explaining the implementation of environmental management accounting in manufacturing firms in Vietnam.

According to the results of this study, environmental strategy has the strongest influence on environmental management accounting implementation (the highest standardized coefficient which is 0.385). This result implies that CLMT is the most important variable contributing to environmental management accounting implementation at manufacturing companies in Vietnam. Thus, to promote the implementation of

environmental management accounting, the enterprises also need to identify appropriate environmental strategies to adapt to the ever-changing business environment.

The task complexity adversely influences the implementation of environmental management accounting, at a significance level of 1%. Therefore, in order to promote environmental management accounting implementation, it is necessary to reduce the difficulties and complexities in the process of implementing environmental management accounting. Thus, the relevant authorities should issue guidelines for environmental management accounting implementation and combine programs to analyze environmental information in the accounting software to reduce their time and effort of the accountant.

Notwithstanding the useful insight into factors that influence EMA implementation, this study's findings must be viewed in light of several limitations and be careful when attempting to generalise from these results. First, this study is subject to the normal limitations of survey based research (Neuman, 2013), because it is possible respondents in more roles in the present study may be unaware of the full range of environmental activities undertaken by their organisations. The second, given the study was limited in a sample in some provinces in Southern Vietnam, so the research does suffer from geographic limitations. Finally, further research should to develop the present framework through the addition of contingent variables, or the exploration of how the variables interact to influence the implementation of environmental management accounting in other contexts.

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Factors Affecting the Responsibility Accounting in Livestock Food Processing Enterprises: A Case Study of Binhdin Province

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Abstract

Responsibility accounting is an information system which is established according to the decentralization for managers, and other parts of the organization to record, measure and evaluate the achieved results. It provides not only financial and non-financial information for decentralized managers but also suitable responsibility for other parts or other responsibility centers to understand whether they work properly. Completing responsibility accounting in enterprises depends on many inner and outer factors. Hence, this research uses quantitative research method to analyze the factors affecting the responsibility accounting in livestock food processing enterprises (LFPE) in Binhdin province in term of responsibility accounting respects such as managerial decentralization, division the organization into responsibility centers, income and cost allocation, estimations, reality and estimation evaluation, reporting, rewarding, etc. and to offer suitable recommendations.

Keywords: *Binhdin, Livestock food processing, Factors, Responsibility accounting.*

1. Introduction

General accounting system and responsibility accounting can vary due to different environment. Therefore, responsibility accounting needs to be flexible to adapt to all changes of political environment, competition, culture, size, organization structure, technology or education level, etc. Hence, there is no need for a standard accounting system or responsibility accounting system. It depends on particular characteristics of each enterprise (Birnberg, Shields, Michael, 1989). Many researchers have indicated many factors affecting to general accounting system and responsibility accounting such as: company size (Zahirul, Hoque, Wendy, James, 2000), position of the manager (Nguyen Huu Phu, 2014), human (Horngren, Charles, Datar, Srikant anh Rajan, 2012), (Nyakuwanika, Moses, et al, 2012), announcement and attitude (Belkaoui, Ahmed, 1981). As a result, in this research, the

authors will both use factors of former research and discover new factors by quantitative research. The data collected from LFPE in Binh Dinh province is used to test whether those factors are significant in statistic.

As responsibility accounting is based on decentralization, standards, measures of achievement, evaluation, reward distribution, etc, there are many researchers in different countries, and different fields research on factors affecting the responsibility accounting, such as: Gharayba and et al (2011) study the application of responsibility accounting elements in industrial production enterprises; Joda and et al (2009) study on the application of responsibility accounting in Jordanian hotels; Al Hanini (2013) study on the application of responsibility accounting in banks, ...

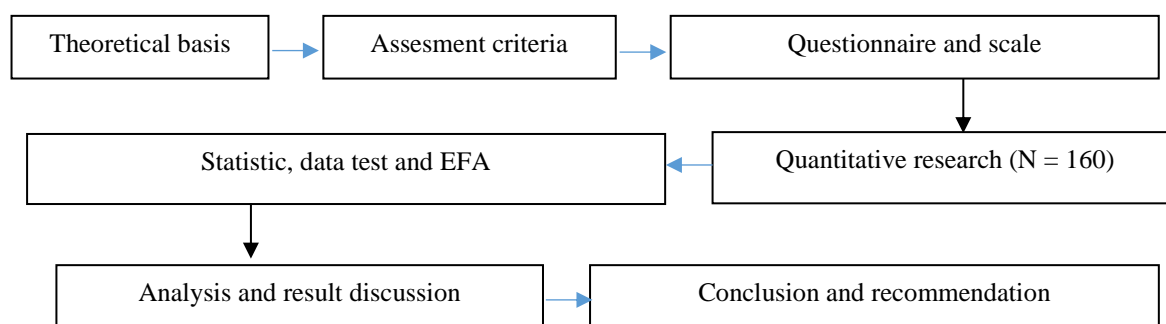
To evaluate the factors affecting to responsibility accounting, researchers used different scales, such as Al Hanini (2013), using 43 scales. Although his research was for the banking sector, these scales were built from 7 factors affecting to responsibility accounting of Gharayba and et al. (2011). In addition, via the detailed study of each scale, it shows that the scales are consistent with the research content of the authors. At the same time, the preliminary survey at LFPE enterprises in Binh Dinh province found that these companies have these characteristics of responsibility accounting. Thus, the authors inherited and adjusted 43 variables measured from Al Hanini's point of view, including: management decentralization (6 variables), division (7 variables), cost and income allocation (5 variables), estimation (3 variables), estimation and actual (6 variables), report (8 variables), reward (5 variables). By the way, from the general research and in-depth interviews with researchers, and managers in LFPE companies, the authors developed a new measurement variable that measures the impact of legal environment (4 variables), factors of enterprise characteristics (6 variables) and performance (5 variables).

2. Literature Review

To conduct this study, the authors did a convenient sampling and survey at 32 LEPE enterprises in Binh Dinh province with 139 valid questionnaires in total 160 questionnaires distributed (valid vote rate: 86.87%).

To study whether the variables and scales are reliable, and suitable for LFPE enterprises in Binh Dinh province, the study uses the likert scale with 5 options and uses the Cronbach Alpha test to test the scales, use other analytical tools to determine the impact of factors on LFPE enterprises in Binh Dinh.

The research process is carried out in the following diagram:



3. Research results of factors influencing responsibility accounting in livestock food feed processing enterprises in Binh Dinh province.

3.1. Cronbach Alpha test

With the data collected, the authors encoded and entered data into SPSS 22.0 software and performed tests for the scales of factor groups using Cronbach Alpha. The test results are as follows:

- Tested factor groups and scale variables:

Table 1. Tested factor groups and scale variables

Tested factor groups	Tested scale variables
1. Management decentralization	6 observed variables are: Manager of the responsibility center who is announced about his duty (PQ1); Manager of the responsibility center who is eligible for doing his job (PQ2); Each job in the enterprise with clear authority and responsibility (PQ3); Employees in the responsibility center who has enough skill and background for doing their jobs (PQ4); Manager of the responsibility center who has enough time for doing his job (PQ5); Employees' accountability is in accordance with their responsibility (PQ6)
2. Divide the organization into responsibility centers	7 observed variables are: Enterprises are divided into administrative units according to the activity's nature (PC1); Enterprises divide jobs for administrative units clearly (PC2); There is a clear description in responsibility centers (PC3); There is a clear combination and relationship between responsibility centers (PC4); There is a specialized manager for each responsibility center (PC5); Each responsibility center has each own operation style (PC6); Each responsibility center has each own particular and homogeneous activities (PC7).
3. Cost and income allocation	5 observed variables are: All revenue related to the responsibility center which is defined and recognized (PB1); All costs related to the responsibility center which is defined and recognized (PB2); There is a clear system to compare revenue and cost in responsibility centers (PB3); There is a clear policy in allocating indirect cost for responsibility center (PB4); There is a clear system to define and allocate cost and revenue in enterprises (PB5).
4. Estimation	3 observed variables are: Budget estimation is separately related to all responsibility centers (LD1); The enterprise trains the employees of responsibility centers and encourages them to obtain the goal (LD2); All the employees of the

Tested factor groups	Tested scale variables
	responsibility center join in estimating activity accordance with their job (LD3).
5. Estimation and actual	6 observed variables are: Comparing the actual and estimated of center's employees which is convenient for information between administrative level (DG1); Comparing the actual and estimated of center's employees to evaluate employees' results (DG2); Comparing the actual and estimated of center's employees to provide suitable information at the right time (DG3); Comparing the actual complementation of employees to support for control policy (DG4); Comparing the actual and estimated of center's employees to determine the gap and who will be in charge for this (DG5); Comparing the results to determine who is responsible (DG6).
6. Report	8 observed variables are: Report of responsibility centers prepared for measuring its performance (BC1); Responsibility centers' manager and employees join in designing performance evaluatin report (BC2); The report is related to the responsibility center in financial respect (BC3); The report is related to the responsibility center in both financial and non-financial respect (such as the inner, customers, learning the BSC method) (BC4); The reports measuring each responsibility center's performance are separate (BC5); Reported information is linked with employees who are responsible for those information (BC6); The deviation mentioned in the report is analysized and researched (BC7); Solutions for deviation will be mentioned if possible (BC8).
7. Reward	5 observed variables are: Managers reward material incentives for employees who are achieved goals (KT1); The rewards are suitable for employees' duty in responsibility center (KT2); Employees are satisfied with the rewarding system (KT3); To reward, enterprise objectively bases on employees' performance (KT4); There is a periodical revision for the rewarding system (KT5).
8. Legal environment	4 observed variables are: Legal frame about accounting (accounting law, accounting standards, accounting system) (PL1); Other law related to company operation (PL2); Regulation and rules of the enterprise which directly affects the accounting work (PL3); Local government policy (PL4).

Tested factor groups	Tested scale variables
9. Factors of enterprise characteristics	6 observed variables are: Accounting information users (DD1); Internal control system (DD2); IT application into accounting work (DD3); Business legal form (DD4); Diversity in business field of the enterprise (DD5); Diversity in business operation area (DD6).
10. Performance	5 observed variables are: Return on investment ratio (Y1); Gross profit (Y2); Product quality (Y3); Customers' satisfaction (Y4); Equipment capacity usage level (Y5).

Source: collected from questionnaire

- Cronbach Alpha test result:

Table 2. Tested factor groups and scale

Tested factor groups	N of Items	Cronbach's Alpha
1. Management decentralization	6	,940
2. Divide the organization into responsibility centers	7	,968
3. Cost and income allocation	5	,913
4. Estimation	3	,929
5. Estimation and actual	6	,935
6. Report	8	,949
7. Reward	5	,934
8. Legal environment	4	,903
9. Factors of enterprise characteristics	6	,937
10. Performance	5	,925

Source: collected from research results

Test results show that Cronbach Alpha of factor groups are all greater than 0.7. Thus, all observed variables of group factors are satisfied and will not be eliminated, which means all scales are consistent and reliable, which is statistically significant for using EFA in LFPE enterprises in Binh Dinh province.

3.2. Exploratory Factor Analysis EFA

The result is as follow:

Table 3. KMO and Bartlett's Test result

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,800
Bartlett's Test of Sphericity	Approx. Chi-Square	8808,890
	df	1176
	Sig.	,000

Source: collected from research results

Table 4. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12,616	25,746	25,746	12,616	25,746	25,746	6,628	13,527	13,527
2	7,583	15,476	41,222	7,583	15,476	41,222	5,584	11,395	24,922
3	6,105	12,459	53,681	6,105	12,459	53,681	5,253	10,721	35,644
4	3,793	7,741	61,423	3,793	7,741	61,423	4,629	9,447	45,091
5	3,079	6,284	67,707	3,079	6,284	67,707	4,323	8,822	53,913
6	2,218	4,526	72,232	2,218	4,526	72,232	4,238	8,649	62,562
7	1,834	3,742	75,975	1,834	3,742	75,975	3,998	8,158	70,720
8	1,707	3,483	79,458	1,707	3,483	79,458	2,961	6,044	76,764
9	1,415	2,888	82,346	1,415	2,888	82,346	2,735	5,582	82,346

Extraction Method: Principal Component Analysis.

Source: collected from research results

According to the KMO and Bartlett's Test, we have a KMO coefficient = 0.800 > 0.5 (which is greater than the required minimum to ensure proper EFA analysis) and the Bartlett's Sig value is 0.000 < 0.05, which means the variables correlated in overall. Then, EFA analysis is really meaningful.

At the same time, the analysis results show that in the above covariance table, if the criteria is *Eigenvalue* > 1, 9 groups of factors are built. The total variance is 82,346% (higher than the standard, which is 50%), which means there is 82,346% of data variance is explained by 9 factor groups.

According to Hair and et al (2010), to ensure the significance level of EFA, the minimum value for Factor Loading is 0.3, if the Factor Loading is greater than 0.4 than it can be considered important, and if this indicator receiving of more than 0.5 it is considered to be of practical significance. As a result, when using the Varimax rotation to obtain the best Factor Loading, we obtained 9 groups of factors, namely, report (consisting of 8 variables), dividing the organization into responsibility centers (including 7 variables), factors of enterprise characteristics (including 6 variables), management decentralisation (including 6 variables), reward (including 5 variables), estimation and reality evaluation (including 5 variables), cost and income allocation (including 5 variables), legal environment (including 4 variables) and estimation (including 3 variables), such as table 13 below.

Table 5. Rotated Component Matrix^a

	Component								
	1	2	3	4	5	6	7	8	9
BC5	,877								
BC1	,875								
BC3	,866								
BC2	,864								
BC4	,847								
BC8	,806								
BC6	,798								
BC7	,678								
PC6		,874							
PC2		,843							
PC1		,813							
PC7		,807							
PC3		,806							
PC4		,736							
PC5		,675							
DD6			,926						
DD4			,860						
DD2			,843						
DD5			,820						
DD1			,761						
DD3			,682						
PQ6				,880					
PQ5				,857					
PQ3				,842					
PQ2				,804					
PQ1				,766					
PQ4				,547					
KT5					,936				
KT2					,855				
KT3					,849				
KT4					,833				
KT1					,777				
DG5						,946			
DG4						,879			
DG2						,863			
DG3						,844			
DG1						,771			
PB5							,950		
PB2							,864		
PB4							,832		
PB3							,795		
PB1							,748		
PL4								,893	
PL3								,868	
PL1								,768	
PL2	,540							,712	
LD3									,951
LD2									,902
LD1									,827

Source: collected from research results

In term of the performance variable (5 observation variables), the results of factor analysis are as follows:

Table 6. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,873
Bartlett's Test of Sphericity	Approx. Chi-Square	589,275
	df	10
	Sig.	,000

Source: collected from research results

According to the KMO and Bartlett's Test, we have a KMO coefficient = 0.873 > 0.5 (which is greater than the required minimum to ensure proper EFA analysis) and the Bartlett's Sig value is 0.000 < 0.05, which means the variables correlated in overall. Then, EFA analysis is really meaningful.

Table 7. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,888	77,770	77,770	3,888	77,770	77,770
2	,431	8,612	86,382			
3	,389	7,785	94,166			
4	,184	3,677	97,843			
5	,108	2,157	100,000			

Extraction Method: Principal Component Analysis.

Source: collected from research results

At the same time, in the above covariance table, if the criteria is *Eigenvalue* > 1, 1 factors is built. The total variance is 77.770% (higher than the standard, which is 50%), which means there is 77.770% of data variance is explained by this factor.

The matrix is drawn as follow:

Table 8. Component Matrix^a

	Component
	1
Y5	,954
Y2	,910
Y3	,894
Y4	,828
Y1	,815

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Source: collected from research results

Thus, the results of a factor analysis show that we derive 1 factor of performance, and 9 factors influencing performance. All are reliable and statistically significant.

3.3. Regression analysis

To perform the regression analysis, the authors calculated the mean values of affected groups and perform regression analysis result. The goal of regression analysis is to analyze and evaluate the effected level of independent variables: PQ, PC, PB, LD, DG, BC, KT, PL, DD to dependent variable Y. The result of regression analysis is as follows:

Table 9. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-,450	,217		-2,071	,040		
BC	,074	,031	,115	2,378	,019	,598	1,673
PC	,174	,043	,241	3,999	,000	,387	2,584
PQ	,326	,040	,437	8,238	,000	,499	2,003
DD	,158	,039	,205	4,085	,000	,559	1,787
PB	,095	,032	,129	3,012	,003	,760	1,315
KT	,141	,036	,178	3,906	,000	,679	1,473
PL	,067	,036	,086	1,888	,061	,670	1,492
LD	,102	,026	,168	3,924	,000	,765	1,308
DG	,129	,035	,158	3,708	,000	,772	1,296

a. Dependent Variable: Y

Source: collected from research results

From the table above, we can see that all independent variables actually affect the dependent variable Y (this is concluded by the T-test with the Sig of the tests less than 1 %, 5% or 10%).

The multi-collinear problem (a model defect) does not appear in the model. Specifically, the VIF variance coefficients are less than 10 (at the level, multi-collinear is diagnosed to be exist).

Table 10. Model Summary R²

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,905 ^a	,819	,806	,3368

a. Predictors: (Constant), DG, PL, DD, LD, PB, KT, BC, PQ, PC

Source: collected from research results

Table 11. Anova^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66,092	9	7,344	64,731	,000 ^b
	Residual	14,635	129	,113		
	Total	80,726	138			

a. Dependent Variable: Y

b. Predictors: (Constant), DG, PL, DD, LD, PB, KT, BC, PQ, PC

Source: collected from research results

It can be seen that the R² of the model is 81.9%, which indicates that independent variables can highly explain the variability of dependent variable (noise factors only account for 9.1%). The results of regression function through the F statistic from the ANOVA table also show that the model is really suitable (Sig is 0.000).

Thus, based on the regression results, the regression of factors affecting responsibility accounting in LFPE enterprises in Binh Dinh province is as follows:

$$Y = -0,450 + 0,074*BC + 0,174*PC + 0,326*PQ + 0,158*DD + 0,095*PB + 0,141*KT + 0,067*PL + 0,102*LD + 0,129*DG.$$

Furthermore, through the standardized beta column, we can see that PQ has the strongest effect on the dependent variable Y (standard beta is 0.437), followed by PC and DD (standard beta are 0.241 and 0.205 respectively). PL has the lowest effect on dependent variable (standard beta is 0.086). Other factors, such as BC, PB, KT, LD, DG, have almost the same effect.

4. Recommendations for responsibility accounting from factors analysis

From the regression result, it can be seen that all factor groups (PQ, PC, PB, LD, DG, BC, KT, PL, DD) have effect on Y. Meanwhile, PQ shows the strongest effect, followed by PC, DD, KT, DG, LD; other factor groups such as BC, PB, PL pose unimportant impact. Therefore, the authors recommend several solutions to completing responsibility accounting as follow:

- Managerial decentralization

Based on the organizational structure, senior managers in LFPE enterprises in Binh Dinh Province should authorize the center managers. The managers are also responsible for the results and performance of their centers. Managers should be authorized suitably with the basis of the activities in responsibility centers. It is to make decisions regarding the responsibilities and the management responsibility for the end result of their responsible centers.

- Dividing organization structure into responsibility centers

Based on the strategy - vision, short-term and long-term goals; managers in LFPE enterprises in Binh Dinh province need to divide the organizational structure into different

responsibility centers based on business characteristics and administrator's style. Responsibility centers may include revenue centers, cost centers, profitability centers and investment responsibility centers. Specifically: cost center can be LFPE workshops, revenue centers can be sales branches, sales offices, shops, representative offices, etc. selling products of the business. The profit center may be enterprise level or its branches or factories level; and the investment center may be a board of directors, a board of directors or a board of directors.

- Cost and earnings allocation

Responsibility accounting allocates costs and earnings to responsibility centers according to the capacity and power limits of the center. This defines the responsibilities of each center with direct costs, indirect costs, revenues and internal transferred price between centers to limit the responsibility inclusion and to calculate cost to be more accurate.

- Planning for responsibility centers

Based on the strategy, LFPE enterprises in Binh Dinh Province will link estimations with previous or current business results in order to set up business budget. Responsibility accounting encourages all employees of each responsibility center to make estimation to ensure the feasibility of overall goal.

- Evaluating the estimations and actual results

To evaluate the achieved results as well as managers' responsibility in enterprise centers, responsibility accounting should use the budget to control and measure enterprise achievement. As we know, evaluating actual results against estimations is important for executives to make business decisions. Therefore, LFPE enterprises in Binh Dinh province should evaluate the actual results against the estimations regularly to provide the information for operating managers in time.

- Reporting responsibility accounting

On the basis of comparing the results achieved between actual and estimated norms at the responsibility centers; managers should prepare reports to analyze the difference between the actual and estimated result to determine the causes and to see who is responsible for all those differences. Then, all executives must analyze the reasons for all those differences, and all responsibility centers have to measure the achieved results against the estimated in order to report in time.

- Rewarding

When there are responsibility accounting reports, managers need to establish a reward system, and timely incentive which are consistent with the achieved results. The systems will be effective when the reasons why the actual and estimated results are clarified. At the same time, the reward system should use non-financial indicators such as the use of balance scorecard, KPI, etc to ensure its objectivity and comprehensiveness. Then, the reward system

will limit unwanted disparities and encourage good disparities. Moreover, the reward system also needs to determine which executives are responsible for those differences to reward good disparities, which encourage employees to improve their performance.

- *Legal environment:*

The legal framework for accounting in Vietnam is gradually improving in recent years and in the near future. Therefore, based on the legal framework on accounting such as the Accounting Law, Accounting Standard, Accounting Regime and other relevant legal regulations to issue rules and regulations to ensure being suitable with the enterprise structure, and local policies whether the enterprise is headquartered or its branches.

- *Enterprises characteristics*

The design of a responsibility system depends on the information needs of managerial level in the enterprise, internal control system, application level of information technology in the accounting work, form of the business and diversity of the area, etc. Therefore, using enterprise characteristics to design the responsibility accounting system that is suitable and effective when operating to control the activities and obtain the planned objectives.

Conclusion: This paper has shown that responsibility accounting in LFPE is affected by Managerial decentralization, Dividing organization structure into responsibility centers, Cost and earnings allocation, Planning for responsibility centers, Evaluating the estimations and actual results, Reporting responsibility accounting, Rewarding, Legal environment, Enterprises characteristics; and the most important factor groups are Managerial decentralization, Dividing organization structure into responsibility centers, Enterprises characteristics, Rewarding, Evaluating the estimations and actual results. The authors have also provided recommendations as solutions. However, the limitation of this research is narrow survey area (only conducted in Binh Dinh province). Hence, the next research orientation may widen the research area for all LFPE in Vietnam and add-in outer enterprises factors.

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The Evolutionary Stages of Management Accounting Practices in Vietnamese Commercial Enterprises

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Abstract

The aim of this research is to examine the current evolutionary stages of management accounting practices (MAPs) in Vietnamese commercial enterprises with reference to the management accounting evolution model proposed by IFAC (1998). In this paper, the questionnaire survey was employed to collect information. We received 81 questionnaires which meets the reliability and the completion requirements, equivalent to 32.4% response rate. We asked the respondents the frequency of their usage on the management accounting practices which were classified into four different stages based on IFAC evolution model. We found that majority of Vietnamese commercial enterprises are in the Stage 1 and 2 of the IFAC model. However, with the pressing speed of the country development, several enterprises have adopted the advanced MAPs in the highest level of the IFAC model. Our findings illustrated empirical evidence of evolutionary stages and management accounting practices which are widely adopted in the Vietnam commercial enterprises.

Keywords: *IFAC model, Management accounting, Vietnamese commercial enterprises*

JEL Code: *1844*

1. Introduction

Vietnamese economy has been integrated more and more deeply into the global economy. The markets in Vietnam have become more competitive than before. The Vietnamese enterprises need to apply management accounting practices to enhance their

strengths to survive in severe market competition. The commercial industry in Vietnam is growing very fast and has various potential development opportunities. Hence, the commercial enterprises play important roles in the Vietnamese economy. Therefore, the general objective of this research is to study the current stage of management accounting practices in the Vietnamese commercial enterprises and the most widely adopted management accounting practices in Vietnamese commercial enterprises.

We use the management accounting evolution model proposed by IFAC (1998) and employ a questionnaire survey to identify the evolutionary stages of management accounting practices and the most widely adopted management accounting practices in the Vietnamese commercial enterprises.

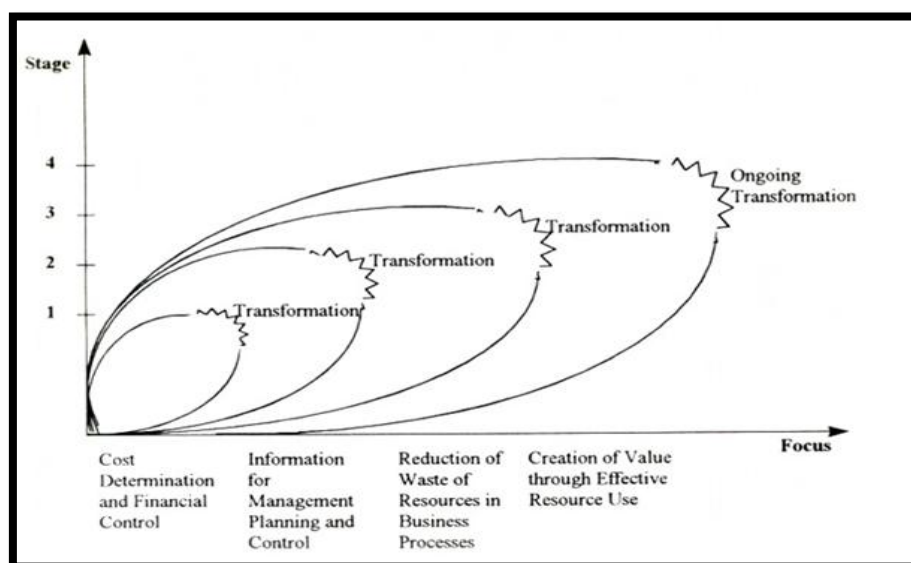
The remainder of this article is structured as follows. In the next section, we describe the IFAC model, review prior studies using this model, examine the previous studies on management accounting practices in Vietnam, and explain the research method. We examine the data collected from the Vietnamese enterprises in Section 4. This section reveals empirical evidence on the evolutionary stages of management accounting practices and widely adopted management accounting practices in the Vietnamese enterprises. We summarize the results, clarify the limitation of our research, and state the future research in the final section.

2. Theoretical Framework and Method

2.1. Theoretical Framework

In March 1998, International Federation of Accountants (IFAC) released a framework to explain the historical development of management accounting. As shown in Exhibit 1, IFAC describes the history of management accounting as a four-stage evolution framework. Management accounting first appeared in the United States during the nineteenth century and then diffused to other developed countries. The IFAC model is also considered as Western or Anglo-American approach by researchers (Abdel-Kader and Luther, 2006a).

Exhibit 1: The Evolution of Management Accounting (IFAC, 1998)



According to IFAC model, management accounting in the first stage (prior to 1950) primarily focused on the determination of product cost and internal financial control. Simple budgeting and cost accounting tools were widely adopted in this period. In the second stage from 1960 to 1965, the focus of management accounting was the provision of information for planning and control purposes. Such techniques as decision analysis, responsibility accounting, and many kinds of budgeting were widely adopted at this stage. Next is the third stage which was from 1965 to 1985. In this stage, the focus of management accounting shifted to waste reduction in using business resources. The widely adopted techniques were process analysis, activity-based costing, sensitivity analysis, quality cost analysis and so on. The fourth stage or the current evolutionary stage of management accounting had been developed by 1995. The focus of management accounting in this stage moved to the value creation through the effective use of resources and technologies. The widely adopted techniques were target costing, benchmarking, value chain analysis, total quality management, environmental management accounting and so on.

The four stages in IFAC model are not mutually exclusive. Each stage successively includes the concepts of the previous stages and complements additional characteristics that occurred due to the new requirements of business management. For instance, the focus of management accounting on providing information in stage 2 remains the same and is paraphrased in stage 3 and stage 4 where information becomes an increasingly critical resource along with other resources in enterprises. However, the difference between Stage 2 and Stage 3 is characterized by “waste reduction” and the difference between Stage 3 and Stage 4 is characterized by “value creation.” There is a clearer focus on the reduction of waste in stage 3 and on the creation of value in stage 4 (Abdel-Kader and Luther, 2006a). Therefore, management accounting in the stage 4, the current evolutionary stage, is regarded as “an integral part of the management process”.

Chenhall and Langfield-Smith (1998) created a list of 42 traditional and contemporary management accounting practices to examine which of them are adopted and the benefits of adopted practices in Australian large manufacturing firms. Specifically, they classified the 42 practices into five groups based on their functions: product costing, budgeting, decision support, performance evaluation, and strategic analysis. They found that the adoption rates and perceived benefits of traditional management accounting practices are higher than the contemporary practices in the enterprises. They also obtained evidence that Australian manufacturing firms have intentions to adopt management accounting practices focusing on non-financial information and strategy in the future. Although Chenhall and Langfield-Smith (1998) did not directly use IFAC model, they described the evolution of Australian management accounting practices appropriately. They created a new research approach by investigating the widely adopted management accounting practices to clarify the sophistication degree of management accounting in Australian manufacturing companies. Much research has employed this approach to investigate the adoption rates and perceived benefits of management accounting practices in other developed and developing countries such as India (Joshi, 2001), the United Kingdom (Abdel-Kader and Luther, 2006b), China (Wu et al., 2007), Vietnam (Doan et al., 2011; Nguyen and Aoki, 2014).

Abdel-Kader and Luther (2006a, 2006b) employ a questionnaire survey and face to face interviews to study the evolution of management accounting practices in the British food and drinks industry. They find that traditional management accounting practices such as Cost-Volume-Profit analysis (CVP analysis), direct costing, conventional budgets, and product profitability analysis are widely adopted in the enterprises. Innovative management accounting practices such as activity-based costing (ABC), product life cycle analysis, non-financial performance measures and so forth are supposed to be important, but rarely used in the enterprises. Based on IFAC model, they identify the evolutionary stages of management accounting practices in the British food and drinks enterprises.

In Vietnam, there is severe lack of macro-level researches on the evolutionary of management accounting practices in Vietnamese enterprises at present. The study conducted by Doan et al. (2011) reported that the application rates of modern management accounting practices in Vietnamese enterprises were generally very low. Less than 40% large enterprises applied modern management accounting practices, meanwhile, the rate was nearly zero in small and medium enterprises.

Nguyen and Aoki (2014) studied the evolutionary stages of management accounting practices in Vietnamese food and beverage enterprises based on the Nishimura model. This study found that among the 54 surveyed enterprises, majority of small and medium enterprises were at the Stage 1 and 2 of the Nishimura models, which are the lowest levels of the model. There are some large enterprises adopting modern methods of the Stage 3 and 4 in the Nishimura model. In general, the adoption rates of modern accounting management methods at these Vietnamese enterprises are rather low. The authors also point out the management accounting practices, namely, absorption costing, traditional budgeting and profitability analysis which are widely adopted in the Vietnamese enterprises.

In summary, there is a severe lack of macro level research that assesses the current evolutionary stages of Vietnamese enterprises based on international measure like the IFAC model. In addition, the numbers of research on the widely adopted management accounting practices in Vietnamese enterprises are rather modest in comparison to other countries.

2.2. Research Method

This study employs a questionnaire survey after conducting preliminary interviews and a pilot survey with some enterprises in Hanoi, one of the two biggest manufacturing centres of Vietnam. There are mandatory criteria of selecting enterprises in our survey. First, the enterprises listed in stock markets and have large revenues are in priority of the selection. Second, every answer must be authorized by enterprises to assure the reliability of data. Based on these criteria, we select 500 manufacturing and commercial enterprises from cities which are Hanoi, Ho Chi Minh City, and some in the middle of Vietnam.

Our survey consists of two parts, namely, general information (Part I) and management accounting system (Part II). Part I comprises questions about general characteristics of the enterprises. It includes the manufacturing field, the kind of enterprise, the year of establishment, total number of employees, total assets, and so on. Part II consists of questions concerning enterprises' management accounting practices such as accounting units, information technology (IT) application in accounting works, specific management accounting practices, barriers to applying management accounting practices, and factors

influencing the application. Regarding important information, we used questions of various kinds, namely, closed-ended, open-ended and Likert scale questions to ensure the accuracy of responses.

A pilot survey was implemented with three enterprises at the beginning of May 2018 in Hanoi. Then, the initial questionnaires were revised according to the feedback of this pilot survey. Finally, we sent the google link survey through emails to the selected enterprises in the middle of May 2018. The questionnaires requested to be answered by the authorized person of the enterprises to assure the accountability and reliability of the data. At the end of June, we collected 180 answers from the 500 manufacturing and commercial enterprises. However, 7 questionnaires were incomplete due to lacking necessary information of the enterprises. Finally, 173 questionnaires met our requirements. In the scope of this paper, we analysed the results from 81 commercial enterprises which is equivalent to 32.4% response rate. The author applies SPSS and Excel to analyse the data. The statistical analysis, mean, std, rank, cluster analysis techniques in this paper.

3. Results and Discussion

In our sample, there are 81 commercial enterprises (equivalent to 46.8%). Majority of the respondents are from the accounting and finance departments and from the Board of Management. The authors regard this information as a significant point to evaluate the quality of the responses in this research.

According to Decree 56/2009/ND-CP¹ issued by the Government of Vietnam in supporting small and medium enterprises (SMEs), total assets are considered as the prioritized criterion to identify the size of enterprises. Therefore, The authors classify the size of enterprises in this sample based on their total assets as shown in Table 4.1. Half of the respondents are small enterprises (51.8%). Half of the respondents are medium and large enterprises.

Table 4.1: Size of the enterprises

Size	Numbers	Rate (%)
Small enterprises	42	51.8
Medium enterprises	16	19.8
Large enterprises	23	28.4
Total	81	100

Note: A small enterprise has total asset equal to or less than 20 billion VND (approximately 880.000 USD). A medium enterprise has total asset in the range of 20 billion VND to 100 billion VND (the range of approximately 880.000 USD to 4.400.000 USD). A large enterprise has total asset equal to or over 100 billion VND (approximately 4.400.000 USD). These exchanges from VND to USD are referred to the exchange rate of 22.730 VND/USD at 31/12/2017.

¹Decree 56/2009/ND-CP was issued by the Government of Vietnam on 30th June 2009. This decree has taken effect from 20th August 2009. It prescribes the definition, criteria to identify small and medium enterprises and policies to support the development of these enterprises.

In the 81 commercial enterprises, there are 13 public enterprises which are already listed in the Hanoi stock market, the Ho Chi Minh stock market, or the UpCom of Vietnam. Also, majority of the enterprises (97.5%) are non-state-owned enterprises.

The authors asked the respondents about their main business strategy, half of them (44 enterprises equivalent to 54.3%) answered that they are following the cost leadership strategy. There are only 9 enterprises are following the differentiation strategy and 28 enterprises chose the focus strategy.

The authors asked the enterprises whether they have management accounting units or not. Table 4.2 illustrates the result. Half of the enterprises (55.5%) have accounting unit combined both financial accounting and management accounting or they have a management accounting unit separated from financial accounting unit (9.2%). Nearly half of the enterprises (44.4%) have only financial accounting units.

Table 4.2: Classification of accounting unit

Classification of accounting unit	Numbers	Rate (%)
A management accounting unit separated from financial accounting unit	9	11.1
An accounting unit combined both financial accounting and management accounting	36	44.4
There is only a financial accounting unit	36	44.4
Total	81	100.0

The authors asked the enterprises to evaluate the roles of management accounting in enterprises. The 5-point Likert scale was used to offer a range of answer options where 1 means Not important; 2 – Low important; 3 – Average; 4 – Important; and 5 – Very important. Table 4.3 shows the results. According to the respondents, the most important roles of management accounting are to use for supporting for reporting financial statements and to evaluate enterprise performance (Mean are respectively= 3.444). The respondents also considered the importance of management accounting on the aspects of using for planning and controlling, determining product cost and selling prices, and to make decisions on production, business or investment.

Table 4.3: Evaluating roles of management accounting in enterprises

Roles of management accounting	Mean	Std.
1. To determine product cost and selling prices	3.198	1.327
2. To use for planning and controlling	3.346	1.266
3. To evaluate enterprise performance	3.444	1.140
17.4. Make decisions on production, business or investment	3.247	1.146
17.5. To support for reporting financial statements	3.444	1.025
17.6. To use for waste reduction	2.728	1.275
17.7. Improve resource efficiency	2.741	1.367
17.8. To use for value creation by improving efficiency of resources usage	3.049	1.312
17.9. Improve competitiveness against competitors	3.049	1.350

Furthermore, one more important characteristic of the enterprises in this sample is the application of information technology (IT) in implementing accounting works. Table 4.7 shows that 90.1% of the enterprises apply IT in their accounting works. Only 9.9% enterprise use the combination of manual accounting and Excel. Regarding this characteristic, many researchers have concluded that application of IT is a vital condition to develop management accounting practices (Gralund, 2007; Spraakman, 2010). Therefore, we consider the high proportion of IT application as an important characteristic of the enterprises.

Table 4.4: The IT application in the enterprises

IT application	Numbers	Rate (%)
Accounting software	73	90.1
To combine manual accounting and excel	8	9.9
Total	81	100.0

To identify the evolutionary stages of management accounting practices in the Vietnamese enterprises, we summarize the rates of management accounting practices adopted by the enterprises as shown in Table 4.5. Then we examine these practices based on the IFAC model. We also employ the Cluster analysis to classify the enterprises.

Regarding the costing system, the most widely adopted practices respectively are ‘Classifying costs based on cost behavior’ (mean equals to 2.259) and ‘Using of predetermined overhead rate’ (mean equals to 2.17). In similar to manufacturing enterprises, the practices, namely, ‘Activity based-costing’ (mean equals to 1.593) and ‘Target costing’ (mean equals to 1.630) are the lowest adoption practices.

Regarding the budgeting system, the highest adoption rates practices respectively are Budgeting for product cost controlling and budgeting for revenue. These adoption rates (means are more than 4) are higher than the above costing practices. This finding is consistent with the evaluation of management accounting roles as shown in Table 4.3. The management accounting systems of the Vietnamese commercial enterprises focus on planning and controlling practices.

With regards to the performance evaluation methods, using financial ratios analysis is the most widely adopted practice in the commercial enterprises (mean equals to= 3.235). While, the modern practices such as Balanced scorecard, benchmarking and non-financial measurements are adopted at rather low rates in the enterprises.

Regarding the information for decision making methods, the highest adoption rate practice is profit analysis of products (mean = 3.123) and following are profitability ratio analysis and Cost-Volume-Profit analysis. This finding is reasonable to understand due to the characteristics of commercial industry which have various kinds of products so the profit analysis for each product is the most popular technique to the enterprises.

On the topic of strategic accounting management practices, the adoption rates of these practices are lower than the above costing, budgeting, performance evaluation, information

for decision making practices. In specific, the long-range forecasting is the most widely adopted method with mean = 1.930.

In summary, the adoption rates of management accounting practices of Stage 1 and 2 of the IFAC model are higher than the Stage 3 and 4.

Table 4.5: The adoption rates of management accounting practices in the Vietnamese manufacturing and commercial enterprises

Management Accounting practices	Adoption rates	
Costing system	Mean	Std.
1.1. Absorption costing	2.173	1.3303
1.2. Standard costing	2.148	1.3520
1.3. Variable costing	1.864	1.0926
1.4. Activity based-costing	1.593	.7710
1.5. Use of predetermined overhead rate	2.198	1.1115
1.6. Target costing	1.630	.8433
1.7. Quality cost analysis	1.741	.8628
1.8. Classifying costs based on cost behavior	2.259	1.2824
Budgeting	Mean	Std.
2.1. Budgeting for revenue/ sales	4.012	.7983
2.2. Budgeting for product cost controlling	4.012	.7983
2.3. Budgeting for cash flow planning	3.309	.9955
2.4. Budgeting of Financial Statements	3.605	.9576
2.5. Flexible budget	2.395	1.1584
2.6 Sensitivity analysis	1.802	.9410
Performance Evaluation	Mean	Std.
3.1. Balanced scorecard	1.605	.9960
3.2. Financial ratios analysis	3.235	1.1861
3.3. Non-financial measurements related to customers - customer satisfaction	2.222	.8367
3.4. Non-financial measurements related to operation and innovation such as patent, certificates, awards	1.679	.8489
3.5. Non- financial measurements related to employees such as employee satisfaction, staff – turnover	1.975	.8363
3.6. Benchmarking	2.049	.8930
3.7. Residual income	2.210	.9449
Information for decision making	Mean	Std.
4.1. Break Even Point Analysis	2.667	1.4053
4.2. Cost – volume – profit Analysis	2.988	1.1564

Management Accounting practices	Adoption rates	
4.3. Evaluation of major capital investment based on discounted cash flow method	2.630	1.2394
4.4. Evaluation of capital investments based on payback period and/or accounting rate of return	2.494	1.1845
4.5. Profitability ratio analysis	3.099	1.1358
4.6. Profit analysis of products	3.123	1.0998
4.7. Customer profitability analysis	2.963	1.1341
4.8. Using KPI for all company and/or each division	2.025	1.0837
4.9. Stock control models	2.235	1.2377
Strategic accounting management	Mean	Std.
5.1. Value chain analysis	1.667	.8660
5.2. Shareholder value analysis	1.716	.8402
5.3. Life cycle analysis	1.765	.8257
5.4. Target Costing Management	1.815	.8531
5.5. Environmental management accounting-EMA	1.630	.7149
5.6. Total quality management	1.617	.8742
5.7. Just-in-time: JIT	1.519	.7265
5.8. The possibilities of integration with suppliers and/or customers value chains	1.679	.8035
5.9. Lean accounting	1.531	.7760
5.10. Long-range forecasting	1.938	1.0410

In the next step, we apply the Cluster analysis technique to classify the commercial enterprises into groups which are equivalent to the four evolutionary stages of IFAC model. Based on the idea of Abdel-Kader and Luther (2006a), we use the Cluster analysis to classify the enterprises into the four clusters, then we consider each cluster as a representative of a stage of the IFAC model.

Table 4.6 describes the cluster result for the commercial enterprises. Mean scores of the stages in the Cluster 4 are the lowest in comparison to other clusters. Therefore, Cluster 4 can represent the Stage 1 of the IFAC model. Next, the mean scores of the stages in the Cluster 3 are the highest among the four clusters. However, the mean scores of the Cluster 3 are all less than 4-Almost Every time in our Likert scale. This indicates that the enterprises in this Cluster used the management accounting practices more than other clusters but have not reached the Stage 4 of the IFAC model. Therefore, we classify the enterprises in this Cluster 3 as the Stage 3 and nearly Stage 4 in the IFAC model. Next, we can rank the enterprises in the Cluster 2 belong to the Stage 3 of the IFAC model. Finally, the Cluster 1 represents for Stage 2 in the IFAC model. In summary, we obtain a classification of 2 commercial enterprises in the Stage 1, 52 commercial enterprises in the Stage 2 of the IFAC

model, 23 commercial enterprises in the Stage 3 and 4 enterprises in the middle between Stage 3 and Stage 4 of the IFAC model.

Table 4.6. Cluster analysis for the Vietnamese commercial enterprises

VAR00003		Mean	Std. Deviation	Valid N (listwise)
1.00	Stage1	2.6401	.55616	52
	Stage2	2.2899	.59926	52
	Stage3	1.5256	.34676	52
	Stage4	1.3709	.20839	52
2.00	Stage1	3.6646	.35937	23
	Stage2	3.5084	.38092	23
	Stage3	2.5362	.42922	23
	Stage4	2.2702	.25478	23
3.00	Stage1	3.5357	.13678	4
	Stage2	3.6923	.18842	4
	Stage3	3.3333	.43033	4
	Stage4	3.5179	.17857	4
4.00	Stage1	1.0000	0.00000	2
	Stage2	1.1538	.21757	2
	Stage3	1.0833	.11785	2
	Stage4	1.0000	0.00000	2
Total	Stage1	2.9347	.74473	81
	Stage2	2.6771	.82243	81
	Stage3	1.8909	.67913	81
	Stage4	1.7231	.62253	81

4. Conclusions and limitations

This study provides empirical evidence on the evolutionary stages of management accounting practices in Vietnamese commercial enterprises based on the IFAC model.

It is found that a higher rate (60 %) of the Vietnamese commercial enterprises are in the first two stages of the IFAC model. In details, there are 2 commercial enterprises in the Stage 1” Cost determination and financial control” and 52 commercial enterprises in the Stage 2 “Information for management planning and control” of the IFAC model. There are 27 commercial enterprises used the practices in the Stage 3 “Reduction of resources waste in business processes” of the IFAC model and no enterprises in the Stage 4 of the IFAC model. Moreover, the widely adopted management accounting practices in the Vietnamese commercial enterprises are budgeting for product cost controlling, budgeting for revenue, financial ratios analysis, and profit analysis for products.

This article cannot avoid inherent limitations such as sample size, volume and interpretation of questions. Time, financial factors, and non-response bias may influence the

findings. In addition, the response rate of the survey remained rather low because of time and financial limitations. For further research, The authors would like to analyse the factors influencing the evolution of management accounting practices in the Vietnamese commercial enterprises.

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**Environmental Accounting and Reporting a Comprehensive Review
of General Framework and Application to Vietnam**

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Abstract

Recently, environmental reporting has gradually been drawing great attention from both academics and practitioners in the less-developed areas of the world. And requirement for improvement of environmental performance has extended beyond the concerns of environmental activists, media and other external stakeholders to become essential interest of firms' management who have been realizing the significance of environmental accounting and reporting to sustainable growth of companies.

This work is about to provide various parties as policy makers and business managers with a conceptual framework, as a foundation, that can help them in designing and implementing accounting system(s) that can best report and disclose the environmentally-related information within the corporate-wide reporting system.

Keywords: *Conventional accounting, Environmental accounting, Framework of environmental accounting.*

JEL code: *M40, M41*

1. Introduction

With the emergence of the environmental issues throughout the world over decades, the need for the reporting of environmental performance of companies by various stakeholders becomes inevitable. But obviously traditional accounting based on economic models failed to provide stakeholders with sufficient information for the sustainable growth of enterprises regarding environmental performance (Mauders & Burritt, 1991).

Exercising environmental accounting at corporate level has confronted policy makers and company managers with challenges. First, environmental information consists of not only the environmental financial impacts on company's economic situation but also the impacts of company activities on environment. They are required to be reported separately and are based on different measurement. And the latter is quite uncommon to conventional accounting systems which ignore the costs and benefits associated with externalities arising from company's activities.

Second, given its newly established contents as a discipline in corporate reporting and the variety of audiences who have different, sometimes conflicting requests for company-related environmental information, environmental accounting in practice is of the term "used loosely and ambiguously" (Bartolomeo et al., 2000). Then there has not been a consensus on generally accepted practical model of environmental accounting that can be applied popularly at corporate level.

Like other countries in the region, Vietnam has been facing serious environmental problems. To cope with that fact, recently Vietnamese government has issued various legal documents on environmental issues to reinforce and promote environmental improvement practice of businesses, e.g. the Law on Environmental Protection (National Assembly, 2014); Decree No. 19/2015/ND-CP detailing a number of articles of the Law on Environmental Protection (Government, 2015); Circular No.155/2015/TT-BTC on Guidelines for Information Disclosure on Securities Market (Ministry of Finance, 2015), and a system of National Technical Regulations on water, air, and other resources promulgated by the Ministry of Natural Resources and Environment.

Despite the efforts made by the government, until now environmental accounting and reporting practice of Vietnamese companies is still modest. Practice has been restricted to the disclosure of general environmental information (almost in narrative forms) and considerably varied among companies (Nguyen et al., 2017). Literature has recorded some studies in this field but most of them are separate case studies illustrating financial results different from traditional accounting when environmental accounting tools were used, e.g. the case of Viglacera Halong Joint Stock Company (Nguyen et al., 2017) or cases of Tan Loc Food, Chau Thanh Tam Shrimp Farm, Sai Gon Beer companies (Herzig, et al., 2012). And none of the companies are recorded by literature as implementing comprehensive and systematic environmental accounting systems.

Researches did show the poor application (in both terms of quantity and quality of information) of environmental accounting at Vietnamese companies (Nguyen et al., 2017 and Doan & Tran, 2017). Environmental accounting has been perceived and applied sporadically and unsystematically from company to company. Given the lack of a commonly accepted conceptual framework at corporate level, it is then a big challenge to accounting profession in Vietnam to promote and implement environmental accounting practice at large scale.

Due to the importance of having an appropriate framework for the success of environmental accounting practice, this paper reviews the works of developing frameworks for the application of environmental accounting at corporate level. Specifically, it clarifies fundamental concepts and assesses the capability of various frameworks of environmental accounting at firm level. This will serve as theoretical grounds for the development of environmental accounting at companies as it can help:

- Defining and positioning environmental accounting properly within a broader corporate reporting system.
- Providing an appropriate framework for defining and developing links between various environmental accounting systems; between environmental accounting and conventional accounting within a broad corporate reporting system.
- Identifying and mapping appropriate accounting methods and management tools in developing measures, indicators of various accounting systems.

2. Development of environmental accounting and its connotation

Environmental accounting (also known as green accounting) has been emerging as an important component of corporate sustainability reporting system (CSR). Various aspects in accounting for environmental-related impacts are documented in professional literature as early as 1920 with the work of Pigou (1920) “The Economics of welfare”, which called for public interest on the cost of negative externalities rising from environmental degradation. Nevertheless, the evolution of environmental accounting just began only in 1970s (Mathews, 1997), with the surge of the first wave of researches in the area of accounting for the environment by Mobley (1970), Beams & Fertig (1971), Churchman (1971), Linowes (1972), Dilley & Weygandt (1973), Estes (1973), and Ullmann (1976).

Beside the works of academics, environmental accounting practice was also germinated through projects initiated by European governments like Norway, Denmark and The Netherlands following 1972 Stockholm conference on Global Environment (Hecht, 2007) and joined later by others like France and the United States of America.

It was, however, during 1990s environmental accounting actually made considerable advancement drawing interest from managers and accountants in businesses. At the time, various efforts had made to introduce environmental accounting practice into businesses with typical works (books, monographs, reports, etc.) contributed by academics and practitioners (e.g. Gray 1992, 1993, Gray et al. 1993, Schaltegger et al. 1996, Bennett & James 1998). Joined in this movement were institutions and professional bodies with practical guidance (Environmental Protection Agency 1995, IFAC 1998, United Nations 1993).

Since then the environmental accounting has become increasingly popular around the world and good practices have been recorded in many companies in Europe, US and Japan. But given its broad nature, environmental accounting practice is still so differentiated among companies and countries as various perceptions and conceptions regarding this reporting area have been developed.

In the modern accounting discipline, environmental accounting has a broad connotation. The emergence of the subject over decades has led to various definitions of environmental accounting based on different perspectives like nature of disclosed information, types of targeted users or approaches to accounting systems.

According to Gray et al. (2001, 7) environmental accounting can be interpreted as “it can be taken as covering all areas of accounting that may be affected by the business response to environmental issues, including new areas of eco-accounting”. Environmental accounting is also defined as “the sub-area of accounting that deals with activities, methods and systems for recording, analysing and reporting environmentally induced financial impacts and ecological impacts of a defined economic system (e.g. firm, plant, region, nation, etc.)” (Schaltegger et al., 1996) or as “Voluntary disclosures of information, both qualitative and quantitative made by organizations to inform or influence a range of audiences. The quantitative disclosures may be in financial or non-financial terms” (Mathews, 1997). Approached from practitioners’ perspective, environmental accounting is defined as “aims at achieving sustainable development, maintaining a favorable relationship with the community, and pursuing effective and efficient environmental conservation activities. These accounting procedures allow a company to identify the cost of environmental conservation during the normal course of business, identify benefit gained from such activities, and provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication” (Ministry of the Environment, 2005).

Though various conceptions and definitions of environmental accounting have been developed, there is a consensus in the purpose of environmental accounting as the application of accounting to measuring and reporting impacts of business operations on environment and of environment on business sustainability to various stakeholders, giving them useful information to assess environmental performance on its own perspective. Environmental accounting is an effort to complement the traditional accounting system which has limited emphasis on economic performance, with information on environmental performance. Hence, in the modern sense environmental accounting covers “both national and firm-level accounting activities, the processing of both financial and non-financial information, and the calculation and use of monetised external damage costs as well as those that are internal to the firm” (Bennett & James, 2017).

3. Environmental accounting as a component of broad corporate reporting system

Environmental accounting can be taken at global, national or corporate (firm) levels. In its early development stage, environmental accounting had emphasis on the national economic impacts on the environment (macro level) with the first environmental accounts introduced by several European governments such as Norway, Denmark, and The Netherlands (Hecht, 2007) and related to national accounts. At national level, environmental accounting can be conducted through system of integrated environmental and economic accounting or a satellite system to the national accounts.

Having emerged as an area of accounting, environmental accounting also aimed at providing relevant information to those who need or can use it to make their decisions. Its contents are found relevant to various types of users and system focuses as delineated in figure 1.

Fig. 1. Distinct contexts of environmental accounting

Type of Environmental Accounting	Focus	Audience
(1) national income accounting	nation	external
(2) financial accounting	firm	external
(3) managerial or management accounting	firm, division, facility, product line, or system	internal

Source: The Environmental Protection Agency (1995)

Though the impacts on environment come from various sources including individuals, households, institutions and businesses, it is undoubtedly among them businesses have the most active interactions with environment. As such environmental accounting is also of interest for companies as a complement to conventional accounting in measuring and reporting environmental impacts on the firm's overall performance. The important implication of environmental accounting at corporate level is mentioned by The Environmental Protection Agency (1995, 18) as "to bring environmental costs to the attention of corporate stakeholders who may be able and motivated to identify ways of reducing or avoiding those costs while at the same time improving environmental quality."

Bennett & James (2017) distinguished six different domains of environmental accounting that are relevant to the firm level, based on their boundaries of attention (an individual organization, the supply chain of which it forms part and the whole of society), and the extent to which they focus on (financial and/or non-financial information).

Fig. 2. Domains of Firm-level Environmental Accounting

	Organisation	Supply chain	Society
Financial focus	Environment-related financial management	Life-cycle cost assessment	Environmental externalities costing
Non-financial focus	Energy and materials accounting	Life-cycle assessment	Environmental impact assessment

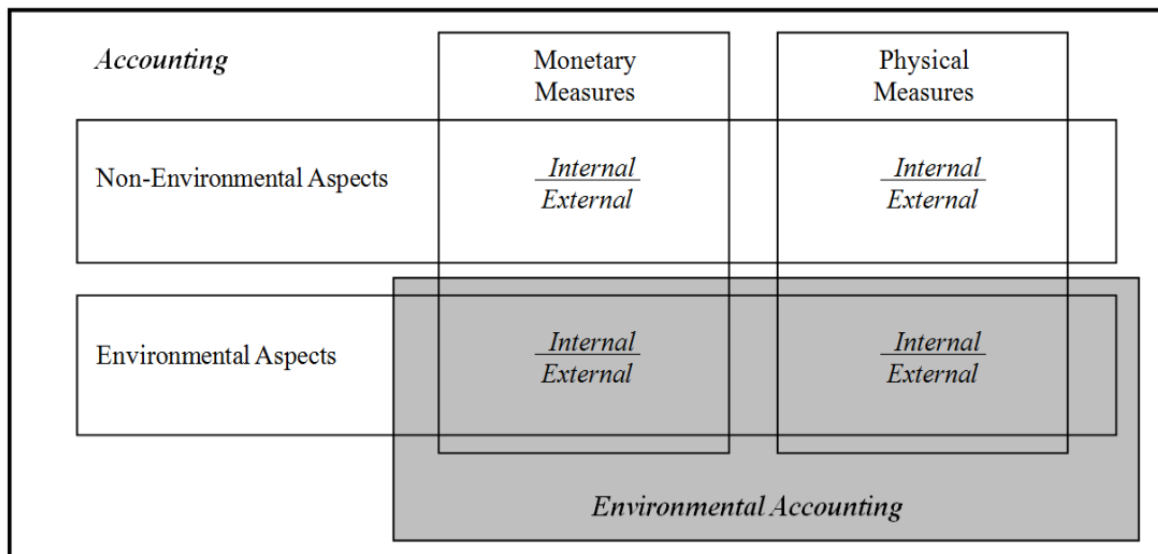
Source: Bennett & James (2017)

In practice, as an attempt to broaden the conventional accounting systems at corporate level, environmental accounting is one of the tools to assess environmental impacts (both costs and benefits) on the companies' performance and to assess long-term sustainability and risks. Environmental accounting then sets up "accounting procedures allow a company to

identify the cost of environmental conservation during the normal course of business, identify benefit gained from such activities, provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication of its results.” (Ministry of the Environment, 2005, 3).

Burritt et al (2004, 23) then set out the boundaries of environmental accounting within a corporate’s accounting system, in which environmental accounting systems take company-related environmental aspects explicitly into account, expressed in both monetary and physical units and provide information for internal or external users.

Fig. 3. Scope and delineation of environmental accounting



Source: Burritt et al. (2004)

It is obvious that environmental accounting fits well into a broader corporate’s accounting and reporting system as a means of reporting environment-related costs and benefits. It is a specific area of accounting which is about to supplement the conventional accounting in providing information for the need of company’s internal and external stakeholders, and in turn, it relies on conventional accounting process as important basis for measuring and reporting company’s environmental performance.

Corporate environmental accounting referred by Schaltegger & Burritt (2000) as the provision of monetary and physical information to management and external stakeholders about the environmental impacts of business and the financial consequences of environmentally relevant business activities. It implies that all characteristics of conventional accounting are still hold true regarding environmental accounting, hence parallel to conventional accounting, environmental accounting at corporate level also comprises of:

- *Environmental financial accounting (EFA)* provides information on environmental performance to meet the demand of external audiences, like the preparation of financial reports applying generally accepted accounting principles.

- *Environmental management accounting (EMA)* supplies information for the internal uses by company management. Managers of companies may need information produced by environmental accounting in making capital investment decisions, measuring the efficiency of materials and energy usage, computing and determining cost structure, improving business processes, performance evaluating and other business decisions.

- *Other environmental accounting* serves other purposes of the company like taxes and other regulatory compliances.

4. Frameworks for environmental accounting at corporate level

Given the diversity in the need of company's environmental information requested by stakeholders, different approaches and frameworks have been developed regarding environmental accounting at firm level. Various approaches to environmental accounting were suggested by Bauer (in Ullmann, 1976, 72), including:

- Comprehensive as well as partial;
- Monetary as well as nonmonetary; and
- Input as well as output-oriented systems.

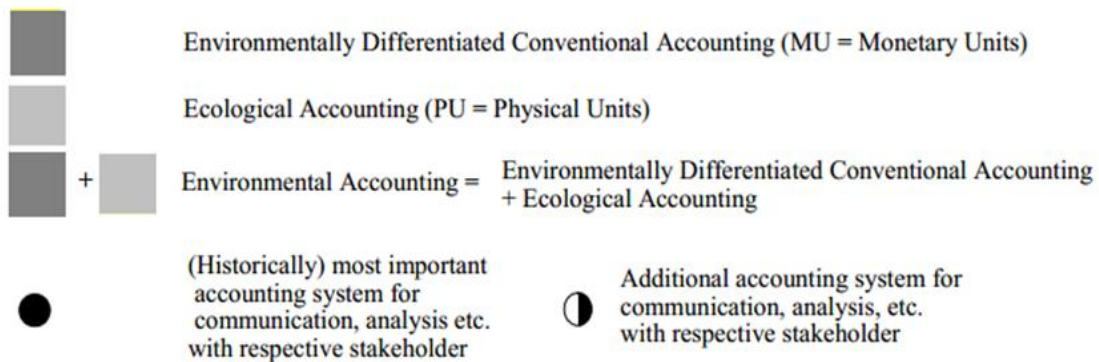
There are both pros and cons regarding combinations of these approaches that need to take into account in designing a new system. For example, a comprehensive system may have problem of aggregation of economic performance and diverse impacts arisen from environment issues; and monetarized approach has fundamental problem when applying conventional business accounting to reporting externalities related to environmental impacts.

The earliest model called Corporate Environmental Accounting System (CEAS) that addressed entirely environmental accounting system applied to corporate level was initiated by Ullmann (1976). That was based on a partial, non-monetary and output-oriented approach and "is a system based on an input-output analysis of a corporation. It measures annual environmental effects connected with regular business operations: consumption of materials and energy, generation of solid waste, discharge of pollutants into air, water and soil." (Ullmann, 1976, 73). Under this approach each environmental-related item should be kept track of by a special account. This is a completely different form of accounting at corporate, separated from conventional accounting system, providing non-financial information on environmental impacts (Mathews, 1997).

Schaltegger et al. (1996) and Schaltegger & Burritt (2000) developed a framework of environmental accounting that clearly distinguishes the environmentally related impacts on economic performance of company (measured in monetary units and being part of conventional accounting system) from company-related impacts on environment (measured in physical units).

Fig. 4. The framework of environmental accounting-accounting systems and measures

Accounting-Systems (& Measure)	Environmentally Differentiated Conventional Accounting (MU)						Ecological Accounting (PU)		
	Management Accounting		Financial Accounting		Other Acc Systems		Internal Ecological Acc.	External Ecological Acc.	Other Ecological Acc.
Management	●	●	◐	◐	◐	◐	◐	◐	◐
Shareholders			●	◐				◐	
Tax Agency			◐		●	◐			◐
Creditors			●	◐				◐	
Ecological Rating Agencies			◐	●				●	
Environmental Protection Agency		◐		◐		◐	◐	●	◐
etc.



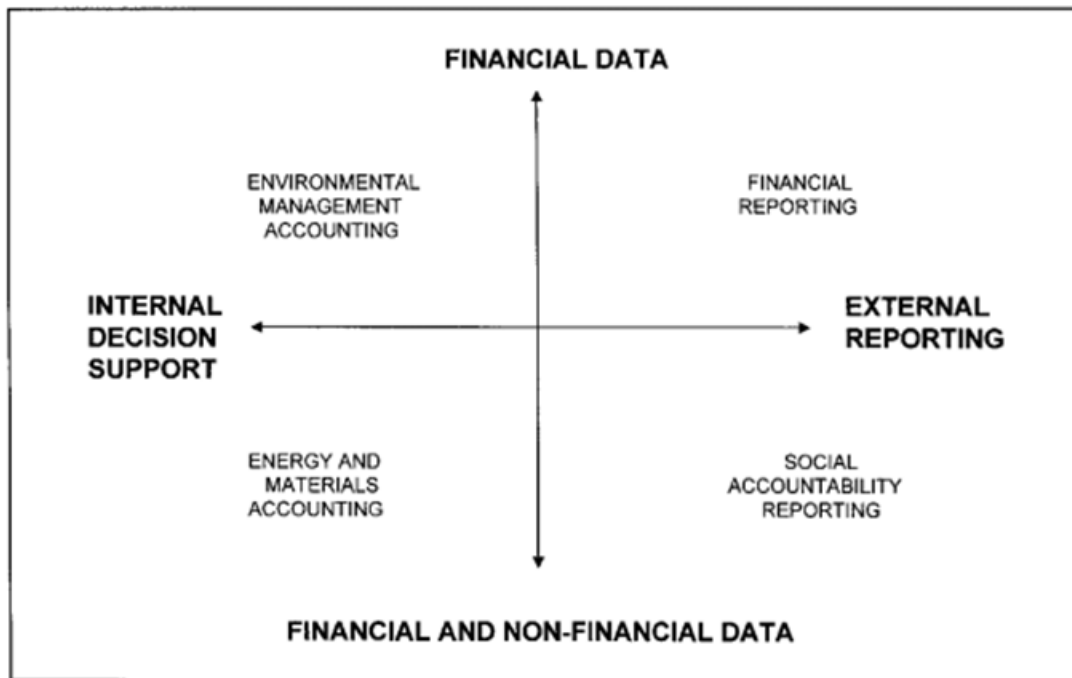
Source: Schaltegger & Burritt (2000)

In this framework environmental accounting is not only the effort of differentiation of conventional accounting to report environmentally induced impacts on company but also an expansion of the conventional accounting to cover the impacts of company's activities on environment (ecological accounting). They both form corporate environment accounting. Then unlike Ullmann's model, under this approach, conventional accounting and environmental accounting would be seen as complementary.

However, this framework of Schaltegger et al. has some disadvantages as argued by Burritt et al. (2004) that the environmentally induced financial impacts on companies is considered as an integrated part of conventional accounting, not as part of an integrative broader accounting system. Hence, it leads to the domination of environmental by financial measurement (Mathews, 2000), while the main requirement of environmental accounting is to provide stakeholders with both physical and monetary information independently.

Bartolomeo et al. (2000) adopted a framework for environmental accounting based on two dimensions financial vs non-financial and internal vs external for their analysis purposes.

Fig. 5. Four approaches to environmental accounting at the level of the firm



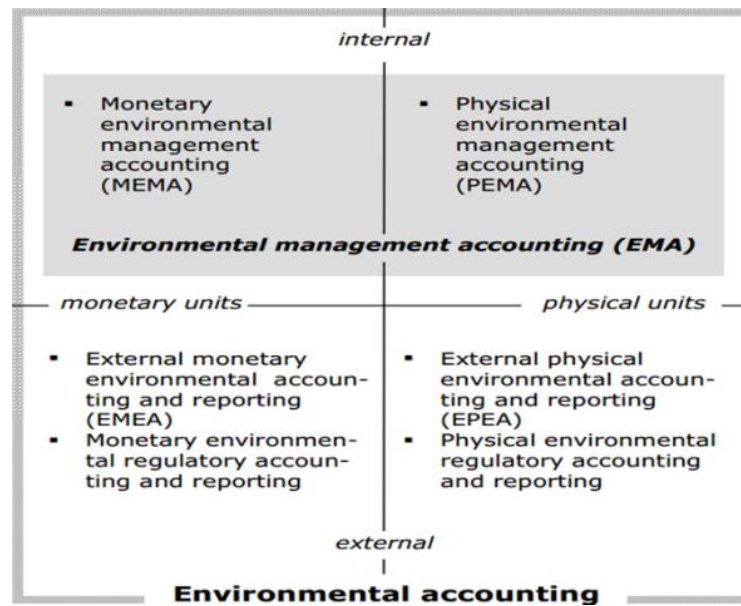
Source: Bartolomeo et al. (2000)

Under this framework of Bartolomeo et al. (2000), four approaches to environmental accounting at firm level were proposed: external financial reporting; social accountability reporting; energy and materials accounting; and environmental management accounting. This framework places a considerable focus on the balance between financial and non-financial information and between internal and external information need. However, like previous frameworks physical environmental information is not separately reported.

Obviously, the emergence of environmental accounting is the result of the need for the information on environmental impacts of company-related activities. Then “The main difference between conventional and environmental accounting systems is that the latter separately identify, measure, analyze and interpret information about environmental aspects of company activities.” (Burrill et al., 2002, 40). As a result, any effort to integrate environmental accounting into an existing conventional accounting system would fail. Environmental accounting should be dealt with as an integrated part of a broader corporate accounting system in which conventional accounting is also a separate part.

Taking in to account those strengths and weaknesses of previous approaches, and adopted approaches proposed by Bartolomeo et al. (2000), Burrill et al. (2004) suggested an integrative framework for environmental accounting at firm level to incorporate environmental information in company accounting/reporting system.

Fig. 6. Comprehensive Framework of Environmental Accounting



Source: Burritt et al. (2004)

In this comprehensive framework, two types of environmental impacts and their measurement are reflected independently.

- Environmentally induced impacts on company's economic situation are recorded through monetary environmental accounting systems, using monetary measures such as cost of site restoration, environmental fees in compliance with laws, value of environmental assets and liabilities. Monetary environmental accounting is considered as the broaden in the contents of conventional accounting as they are based on existing methods of conventional accounting.

- Company's impacts on environment are reported through physical environmental accounting systems, using physical measures, for example, amounts of material or energy measured in physical units like tons, cubic meters. And this is an addition to conventional accounting.

This framework of environmental accounting inherits advantages of early models because it makes clear distinction between two types of environmentally related impacts – the central concern of any environmental reporting system. As these two types of information – physical and monetary environmental information – are developed from different data sources, measured in different metric units and serve different purposes of various stakeholders.

Within this framework it is also possible to make further division into sub-systems by adding other dimensions (such as time frame, user focus, etc.) to address detailed information needs of different groups of users without breaching the balance and completeness of the whole system.

5. Conclusion

Though Vietnamese government has taken initial steps to promote its application to business, current practice of environmental accounting in companies is still weak. Efforts

made by the government and professionals are just enough to raise awareness among academics and practitioners of the importance and implications of environmental accounting practice at corporate level and are not sufficient to make it realized.

Despite the desire by various stakeholders, management are still lingering in implementing environmental accounting in their businesses. Obviously, it is challenging to push a new concept into practice without practical guidance. This fact calls for the need for thorough fundamental studies that can help developing a comprehensive framework of environmental accounting that is applicable at corporate level.

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Using Material Flow Cost Accounting to Optimize Manufacturing Process in Thermal Power (Case Study in Quang Ninh Thermal Power Plant)

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Abstract

The paper studies theories of material flow cost accounting (MFCA). The purpose of this paper is to analyse the reality in material management in Viet Nam thermal power plants (TPP). Research is based on the material flow theory, MFCA, the material balance for effective management of the production and material wastes during the manufacturing process. Costs in producing process based MFCA are included material cost, energy cost, system cost and waste management cost. By analysing the case study in Quang Ninh TPP, this paper identifies the flow of coal in TPP as a basis for determining losses for business and society. The material flow model in Vietnamese thermal power plants are identified with primary materials in TPP. The manufacturing process of electrical products consists of four stages and losses in each that are indicated. From that, some recommendations are shown some steps, some elements required for application of MFCA for TPP.

Keywords: *Material flow analysis, Material flow cost accounting, Thermal power plants*

1. Introduction

Green economy that could enhance human's lives, improve social equity and reduce environmental risks and natural resource scarcity is new trend nowadays. Government and businesses play an important role in green economy development. The government has a mission to orient business operations by policies, regulations that ensures to create fair environment for green products. However, businesses are core to promote sustainable economy improvement, change business model gradually, replace the manufactured technologies which used which are

labour – intensive, consume a lot of natural resources quantity, make pollution to modern others that are friendly with environment, high productivity and save natural resources for the next generation. In current developed and strongly competitive and the development of multinational corporations, capitalisation are over the world, business reputation are represented by social responsibilities and create sustainable value.

In Viet Nam, the TPP, under construction or in operation have all the characteristics of coal-fired technology. Twenty one coal – fired TPPs in operation are total installed capacity of 14,310 MW (Trần.Văn.Lượng 2018). Therefore, the TPP are always interested in research of production tools and management to best response the demand of customer and society, to minimize negative impact on the environment and to ensure sustainable production for the economy.

The production process in the enterprise is considered as a process of moving the material. In other words, this system includes a material flow that creates added value (from the input material through special manufacturing process to distribution of products to consumers). According to process management, manufacturing business is considered as a process of moving material. Recognition the moving of material in manufacturing businesses that is the important content in processing management. Material flow cost accounting (MFCA) is the useful tool to reduce material wastes, enhance business performance and reduce in environmental impact.

Determining MFCA could help to optimize manufacturing process in TPP (case in Vietnam). The paper will focus on: (1) The theory of MFCA to optimize manufacturing process; (2) analyze the case study of material flow in Quang Ninh TPP (coal-fired TPP); (3) recommend steps, elements in application MFCA in TPP.

2. Theoretical framework of materials flow analysis

2.1. Using materials flow analysis to optimize material flow in manufacturing

MFA evaluates the efficiency of using materials and then determines wastes generated from certain resources and materials. According to (Brunner 2005), MFA is considered as a systematic assessment system that is performed on materials flow and materials in inventory within a certain range of scope and time. MFA ensures the connection between the material stock, the movement and the destination of materials flow. With the balance physical, MFA could be controlled by comparing the analytical results of materials inflow, materials in inventory and materials outflow during production. Therefore, MFA can become an useful tool to guide decision making in resources management, wastes and environment. However, while MFA focuses only on researching and analysing the volume of material (physical volume), monetary information is an important factor of making decision process.

Within enterprises, the physical balance of inputs and outputs is used more as part of environmental reports and provides significant information for environmental management.

MFA is useful for developing the monitoring process in assessing the resource productivity and environmental performance at enterprise or factory level.

Furthermore, MFA helps to establish company's strategies for investment, emission; monitors available precious resources as well as the detriment of business or factory to supply chain discontinuation. The MFA of an industrial material such as metals could give more explanation for some definitions like resource productivity and the relation with the working productivity, the materials price as well as the competition.

According to previous researches, MFA consists of material flow cost accounting (MFCA) and material flow indicators. Material flow accounting (MFA) is an accounting system using volume measurement (kilogrammes, tons) to describe materials flow from exploiting, manufacturing, processing, distributing to recycling scrap like wastes or gases emission into the environment (OECD 2009).

(i) Material flow cost accounting (MFCA) includes the elements such as inputs, output and materials in stock. MFCA monitors all the inputs of manufacturing process and measures the product as well as materials loss within physical units by using the following equation:

$$\text{Input} = \text{Product} + \text{Loss of raw materials (wastes)}$$

Through MFCA, the material balance of input and output is linked to monetary units by allocating and / or tracing costs to all products and material losses. MFCA carries out four types of costs, all of which are allocated to both the product and the material loss:

- Material costs;
- Energy costs;
- System costs; and
- Waste management costs.

(ii) Material flow indicators (MFI) is calculated from accounts in the MFA accounting system (direct materials, total demand for materials and total used materials) to get a message across policies related to interesting parties (possibly not an expert) on the meaning of the material flow for economic and environmental issues.

2.2. Material flow cost accounting (MFCA) – a tool for optimizing cost management and wastes

According to (Hargroves 2012), MFCA does not only provide material information on MFA but also link this information to its value. This could result in clearly identifying inefficient production during stages for the management.

The main purpose of MFCA is to save cost and reduce environmental impacts caused by enterprise's activities. It could also be served as a decision-making tool for corporations and managers. In fact, balance is the main principle of MFA. It means that the total inputs needs to be equal to the total outputs which is divided into two categories: production (semi-finished or finished products) and non-production (wasteful resources or recycled materials). In other words, the total inputs cost is equal to the total production and non-production cost.

Research in Taiwan's small and medium enterprises conducted by (Shen-Ho Chang 2015) has proven that MFCA is a feasible and useful tool for decision-making. The MFCA

could also help to reduce the likelihood of abnormal decisions and determine which steps of stages need to be improved. Faulty products is a damage in the manufacturing process. Therefore, limiting these products by setting up checking points at the production stages will have a great effect on detecting defective products for reparation at that stage. This will reduce the cost of wastage at later stages of processing. A direct connection is created by the valuation on the same basis of data based on material information. This could provide more accurate and useful information for decision-making and control of output.

MFCA can be applied to identify production costs and material losses. In many cases, costs are more significant than previously assumed. At the same time, MFCA sets a final goal of "zero cost of material losses", which could encourage organizations to make promptly a improvement. Typical losses identified by MFCA are:

- (1) Cost of waste treatment for material losses;
- (2) Loss of materials sold to external recycling contractors;
- (3) Systematic material losses: labour, depreciation, fuel, utilities and other expenses;
- (4) Systematic cost needed to recycle materials internally
- (5) Costs of materials and systems for products in stock, processed materials due to conversion to newer models or bad quality or expired products.

In reality, there is a few companies that control its auxiliary materials. Normally, these materials are controlled by a process or an equipment without valuation of inputs (and wastage). In some cases, auxiliary materials are carried out within the unit of production. The overall waste treatment cost is generally managed on a factory classified by type of waste. However, some companies determine such costs by type of material, product model and type of process. In addition, these companies have often no idea of the damages associated with reusable wastes because those are reused as resources and sometimes sold as valuable materials outside.

Important elements are used in MFCA that are: Quantity centre, material balance, cost calculation and material flow model (APO 2014).

(i) A quantity center is typically one or multiple unit processes. The center is the point at which the material balance will be calculated both in physical and monetary units. One quantity center can include either a single process or multiple processes, depending on the amount of the material losses identified at the unit of production.

(ii) For each quantity center, the amounts of inputs and outputs should be quantified in physical units. All physical units should be convertible to a single standardized unit (e.g., mass) so that material balances can be conducted for each quantity center. It is preferable to use existing on-site basic units for production management.

(iii) Through MFCA, the material balance of inputs and outputs is linked to monetary units by assigning and/or allocating costs to all products and material losses. MFCA considers four types of cost, all of which are allocated to both products and material loss.

(iv) It refers to the visual representation of the process that shows all the quantity

centers in which the materials are transformed, stocked, or used, as well as the flow of these materials within the system boundary

2.3. The steps of application material flow cost accounting

In order to implement material flow cost accounting, five steps recommended as well as required (APO 2014):

- (1) Embedding management in process and identifying responsibilities;
- (2) The scope and boundary of the process and building the material flow model in the manufacturing;
- (3) Allocation costs based material flow cost accounting method divided to: Material costs, Energy costs, System costs and Waste management costs;
- (4) Interpretation and communication of MFCA results;
- (5) Improvement production and minimizing material wastage through MFCA result.

3. Material flow in thermal power plants and material flow model in Vietnamese thermal power plants

3.1. Characteristics of Vietnamese thermal power plants

According to the Power Planning VII, in the coming time, many large power centres will be built and put into operation such as Duyen Hai, Long Phu, Song Hau, Van Phong, Vinh Tan, Quang Tri, Vung Ang, Quang Trach, Nghi Son, Nam Dinh, Thai Binh, Hai Duong, etc.. This increase significantly the power generating capacity from thermal power sources. Total coal-fired thermal power capacity in 2020 will account for 48% of total installed capacity, producing about 46.8% of the electricity for manufacturing. By 2030, the figures are 51.6% and 56.4 % respectively. The total capacity of natural gas (including LNG) used by 2020 will account for 16.5% of the total installed capacity, producing about 24% of the electricity for manufacturing; by 20230, the numbers are 11.8% and 14.8% respectively.

By 2020, the total capacity of thermal power plants (coal and gas) will be planned about 64.5% of the total installed capacity, producing about 70.8% of the electricity and by 2030 the figures are 63.4% and 71.2% respectively. In TPPs, high fuel costs typically account for 53% of COGS. For coal-fired thermal power plants, coal is the main fuel (about 50% of cost price).

3.2. The material flow model in Vietnamese thermal power plants

The main raw material in the TPP is coal. When coal is used for electricity generation, it is usually pulverized and then burned in a furnace with a boiler. The furnace heat converts boiler water to steam, which is then used to spin turbines which turn generators and create electricity.

A coal-fired TPP consists of two main components: a boiler cluster that produces steam and a turbine-generator cluster to convert steam energy into electricity. There is also an auxiliary boiler for factory start-up; cooling water system; fuel preparation system (coal storage, conveyor belt, coal mill); pneumatic production system; fly ash recovery system,

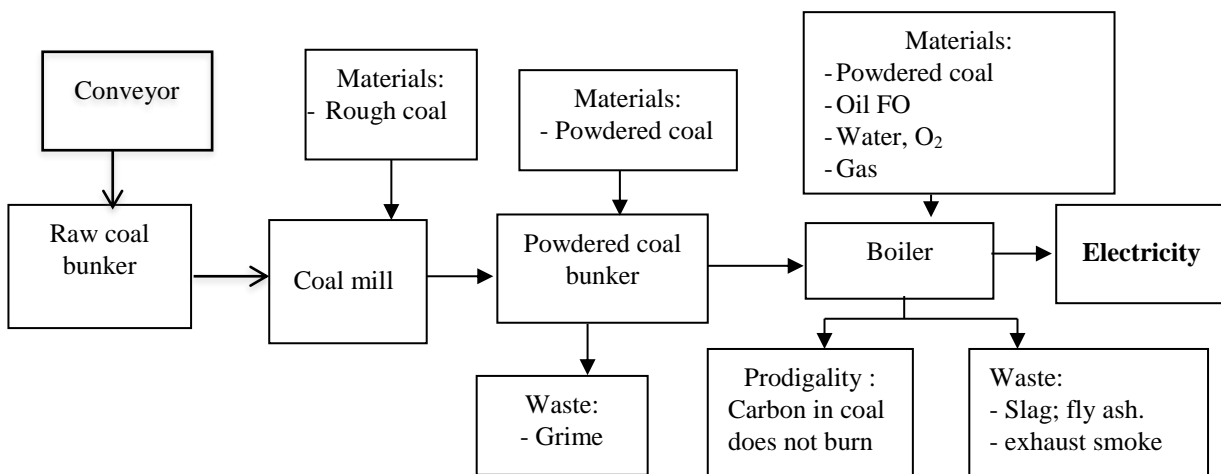
bottom ash gathering, dust filtering and waste gas treatment.

Coal is the main material of electricity production process in TPP. Rough coal is transported by conveyor direct to coal mill system or to coal bunker (indoor bunker or outdoor bunker). From the coal bunker, the coal is also transported to coal mill system by conveyor. Rough coal is dried, crushed, screened to size the diameter of coal powder less than 200 μm and transported to powdered coal bunker. Powdered coal is transported to the burners located in the combustion chamber by powdered coal supply at the bottom of the powdered coal bunker. Hot air pressure will push the coal into the combustion chamber to burn. s transported directly to the combustion chamber.

Products of the powdered coal burning process in combustion chamber consist of slag, fly ash, and exhaust smoke discharging through the slag disposal system at the bottom of the boiler and through the chimney. By the high pressure water pump, slag is pushed up the slag damp. Here, under the contract for selling slag, the slag is sold to units with different needs. Fly ash is retained by an electrostatic filter and stored in silos. Here, under the contract for selling fly ash, the fly ash is sold to units with different needs. Fly ash and slag are mainly used in construction. A part of the fire product as gas (SO_x , NO_x) are eliminated and retained by an desulphurization system (FGD) and by an NO_x elimination system (SCR). The last remaining of fire product is exhaust reached environmental standards is pushed to the atmosphere.

According to the case study, the MFA model is summarized in the Figure 1. In these plants, departments where manage materials are: Board of Directors, Planning Department , Technical Department, Fuel Department, Boiler Department. During the process of electricity production, the waste comes mainly from: carbon in the un-burning coal; Emissions from slag, fly ash and flue gas. Waste (in technical terms is loss) is highly valued at the coal combustion (boiler). The higher rate of carbon in un-burning coal causes big waste in thermal power plants. The rate of non-standard burning is 6 - 7%, but the actual rate is higher and causes coal waste (loss) at the TPP.

Figure 1. Model of coal flow analysis in thermal power plant



(Source: research by the author)

According to materials flow model, the manufacturing process of electrical products consists of four stages as follows:

Stage 1: Receiving charcoal from suppliers, then transferring charcoal to the coal bunker (raw coal)

Stage 2: Transferring raw coal from the coal bunker to coal mill to produce powder coal.

Stage 3: Then, powder coal is transferred to powder coal storage.

Stage 4: Charcoal in powder coal storage is moved to the combustion chamber of a boiler.

The powder coal is burned at this stage to generate electricity.

Materials flow like input fuel, output, material efficiency are managed at each stage of the main production process. Therefore, each manufacturing stage of this system is selected and identified as a production centre for data collection used in MFCA.

Material waste is found in two stages:

(i) Coal mill:

- Coal losses: due to coal spillage during coal milling and transportation.

- Waste: Coal dust and impurities in the coal.

(ii) Coal burning:

- Coal losses: due to burning coal

- Waste: coal during combustion produces slag, fly ash and gas losses.

Table 1. The summary costs of Quang Ninh TPP from 2015 to 2017

No	Contents	Unit	2015		2016		2017	
			Cost	(%)	Cost	(%)	Cost	(%)
I	Actual sales	Million kWh	5,692		6,458		5,282	
II	Costs	Million vnd	6,675,203	100.00	7,332,418	100.00	6,814,773	100.00
II.1	Material costs	Million vnd	4,402,693	65.96	5,017,120	68.42	4,334,069	63.60
1	Coal (<i>Consumption + Starting</i>)	Million vnd	4,217,618	63.18	4,796,313	65.41	4,093,589	60.07
2	Limestone	Million vnd	489	0.01	411	0.01	177	0.00
3	Bi grinding machine	Million vnd	17,777	0.27	18,951	0.26	12,378	0.18
4	Chemicals	Million vnd	7,897	0.12	4,766	0.06	4,846	0.07
5	Lubricants	Million vnd	6,632	0.10	5,636	0.08	5,072	0.07

No	Contents	Unit	2015		2016		2017	
			Cost	(%)	Cost	(%)	Cost	(%)
6	FO oil (incineration + starter)	Million vnd	114,767	1.72	93,332	1.27	131,721	1.93
7	DO oil	Million vnd	104	0.00	12	0.00	108	0.00
8	Supplies for regular repairs	Million vnd	37,409	0.56	97,699	1.33	86,178	1.26
II.2	Energy costs	Million vnd	96,247	1.44	42,125	0.57	82,849	1.22
1	Industrial water	Million vnd	2,697	0.04	2,975	0.04	2,722	0.04
2	Self-produced electricity for production (included technical electricity)	Million vnd	93,550	1.40	39,150	0.53	80,127	1.18
II.3	Other expenses	Million vnd	2,173,362	32.56	2,270,221	30.96	2,395,192	35.15
1	Salary costs	Million vnd	162,739	2.44	222,040	3.03	230,410	3.38
2	Depreciation of fixed assets	Million vnd	1,950,838	29.23	1,954,219	26.65	1,956,428	28.71
3	Other fixed costs	Million vnd	59,785	0.90	93,962	1.28	208,354	3.06
II.4	Financial costs	Million vnd	2,901	0.04	2,952	0.04	2,663	0.04
1	Waste treatment costs	Million vnd	573	0.01	569	0.01	547	0.01
2	Responding to oil spills	Million vnd	742	0.01	602	0.01	637	0.01
3	Garbage collection, waste treatment	Million vnd		-	360	0.00	-	-
4	Environmental sanitation Fine	Million vnd	342	0.01	274	0.00	310	0.00
5	Transportation of waste	Million vnd	398	0.01	383	0.01	374	0.01
6	Insecticide	Million vnd	846	0.01	764	0.01	795	0.01

(Source: research by the author)

The application of MFCA at Quang Ninh TPP from 2015 to 2017 results in some figures on material and production costs as follow:

- Costs of raw materials of the Company include: coal, FO oil, DO oil, limestone, chemicals, grinding machine and supplies for regular repairs. Cost of raw materials accounts for the largest proportion of the total cost (from 58% to 62%) according to MFCA method.

Among the cost of raw materials, the cost of coal accounts for 55% - 60% of the total cost, and the figure for fuel oil costs is 1.15% - 3.35%.

- System costs include: labor costs, depreciation of fixed assets, interest expenses, other fixed costs, maintenance and transportation costs. These costs account for from 37% to 41%, of the total cost according to MFCA method. In order to save money on this system, it is necessary to take controls from the purchase of input assets in the construction stage of the company.

- Energy costs in the Company such as electricity, water account for a small proportion of 0.5% - 1.3% of the total cost according to MFCA method. However, in number, the expenses represent relatively high cost.

- Waste management cost: is the expense for "material wastage incurred in a volume center". Waste management includes management of emissions, sewage and solid waste. Waste management costs are the costs of carrying out activities within and outside the organization such as refurbishment of unsatisfactory products, recycling, waste tracking, storage, treatment or disposal. In Quang Ninh TPP, the cost of waste includes some main types such as oil spill responding costs, garbage collection, waste treatment, waste transportation, insecticide cost, ash removal costs or environmental sanitation costs. Annually, the waste costs represents a very small proportion of the total cost, only 0.04%.

3.4. Assessment waste in material flow analysis in Quang Ninh Thermal Power Plant

In general, coal wastes are incurred in two principal stages: Coal mill and coal burning at Quang Ninh TPP. At Quang Ninh TPP, coal wastes are arised in coal burning. According to the survey, wastes are existed when coal is not burned fully in the boiler. The main causes are dued to the technology of bolier. The benchmarking unburned coal is 6-8% but it is difficult to achieve this rate. At Quang Ninh TPP, the real rate is 9 -15%. According to the Table 1, wastes have not calculated fully, especially wastes are incurred from unburned coal, coal price (the price is fixed by government), movement coal.

4. Discussions and Recommendations

4.1. Identification principal elements of MFCA in TPP

(1) Principal material with lagre amount: Coal.

(2) Quantity centre: In TPP, there are four quantity centres. They are: Raw coal bunker, Coal mill, Powdered coal bunker and Boiler.

(3) Material balance : $\text{Coal input} = \text{Coal transferring} + \text{Coal loss}$.

Material loss incurs in transportation coal and due to burning coal.

(4) Cost calculation: Calculating all cost by MFCA.

All cost items are allocated by coal loss rate of each quantity centre for final product (kwh electricity and waste). Waste management cost is wastes.

(5) Material flow model: By graphic and shown by physical data.

4.2. Steps applied MFCA in TPP

(1) Embedding management in process and identifying responsibilities: Assign some staff with knowledge and experience in their department (Board of Directors, Planning Department, Technical Department, Fuel Department, Boiler Department, Accounting Department, Environmental Supervisor).

(2) The scope and boundary of the process and building the material flow model in the manufacturing: Raw coal bunker, Coal mill, Powdered coal bunker and Boiler (Figure 1).

(3) Allocation costs based material flow cost accounting method divided to: Material costs, Energy costs, System costs and Waste management costs: Accountants allocate material cost for four quantity centres.

(4) Interpretation and communication of MFCA results: Using some countable tables are the material matrix of quantity centre, the table of quantity centre's of input-output material, the table of quantity centre's material summary, the table of system cost, energy cost and wastes management cost, the table of MFCA summary.

(5) Improvement production and minimizing material wastage through MFCA result: Identify wastes, material loss in detail each quantity centre.

5. Conclusions

MFCA is a management tool to reduce waste in usage material and environmental impact. TPPs should apply MFCA to ensure the physical balance, calculate full wastes, electricity cost and material losses. Costs in producing process based MFCA are included material cost, energy cost, system cost and waste management cost and they are illustrated.

Using the case study in Quang Ninh TPP, the paper summaries the stages and the manufacturing costs to quantify the impact of material flow. Some causes of wastes are identified to require some adjustments in management of material flow (coal). The scope within Quang Ninh TPP is not enough for all TPP in Vietnam.

Overall, this study has implication the model of material flow in Vietnamese thermal power plants and usage MFCA to reduce wastes. First, the study identifies the stages of manufacturing process based the material flow. Second, this study summaries producing cost in four costs classified by MFCA to recognised full wastes and material losses. Third, some steps of application MFCA with principal elements are recommended for TPP.

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Corporate Social Responsibility Disclosures of Companies Listed on the Vietnam's Stock Market - Perspectives of Legitimacy Theory and Stakeholder Theory

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Abstract

The corporate social responsibility disclosure has becoming a global trend and an urgent requirement for enterprises as it is considered a useful tool to help businesses communicate their practice of social responsibility with stakeholders. This paper aimed at applying stakeholder theory and legitimacy theory to explain the practice and disclosures of corporate social responsibility by evaluating the current state of corporate social responsibility disclosures of companies listed on the stock market of Vietnam through analyzing annual reports and sustainability reports of these enterprises during the period from 2006 to 2016. The research results showed that the level of corporate social responsibility disclosures of companies listed on the stock market of Vietnam is relatively low and there are differences between manufacturing and non-manufacturing enterprises.

Keywords: *Corporate social responsibility, Corporate social responsibility disclosures, Legitimacy theory, Stakeholder theory*

JEL: *M41*

1. Introduction

Corporate social responsibility has started to be a common term since the 1950s when business enterprises were considered to have significant contributions to the economic development, but they caused substantial social problems such as environmental pollution, depletion of resources, production of products that are hazardous to human health, using

child labor, sweatshops. With the purpose of propagandizing and calling upon businesses not to harm the rights and interests of others, Howard Rothmann Bowen, in his book "Social Responsibilities of the Businessmen" (1953), defined social responsibility as the obligation of enterprises, and encouraged enterprise owners' charity to compensate for social damages caused by their operations. Along with the economic, political, social and environmental changes of each country and in the world, the concept of corporate social responsibility may vary accordingly. Initially, corporate social responsibility was considered the charity of businesses to compensate for the society. Nowadays, the corporate social responsibility is considered the commitment of enterprises to contribute to the sustainable economic development through particular activities to improve quality of life for workers, their families, the community and society as a whole including following categories: environmental protection, gender equality, labor safety, labor rights, fair wages, training and developing staff, community development, product quality assurance (Global Reporting Initiative - GRI version G4, 2013).

The primary purpose of corporate social responsibility disclosures is to provide financial and non-financial information about interaction of the business with physical and social environment of related parties (Hackston and Milne, 1996). The disclosure of this information can be considered a conversation between enterprises and stakeholders which is used as a strategic tool in managing the relationship between the business and related parties (Nagib Salem Bayoud, 2012) by providing information on corporate social responsibility such as environmental information, community development, employment regimes, product quality.

2. Theoretical background and literature review

2.1. Legitimacy theory

Legitimacy theory derived from the concept of organizational legitimacy, is defined by Dowling and Pfeffer (1975) as follows: "An entity can exist when its value system is congruent with the value system of the larger social system where the entity belongs to. When there is a real or potential disparity between two value systems, the legitimacy of that entity is threatened". Based on the foundation of legitimacy theory, Guthrie and Parker (1989) provided that enterprises operating in society must sign a social contract in which managers agree to fulfill certain social requirements to achieve their goals. Some terms of this contract may be clearly defined by the law, however, certain terms of the contract may not be required by legal regulations but depending on the community expectations towards the business. Accordingly, the practice and disclosures of social responsibility are related to social pressures. The increase of social pressures may arise from dissatisfaction of the government, pressures from workers, consumers and other stakeholders, or pressures from new policies and regulations of strengthening the monitoring of business activities. Toukabri Mohamed et al. (2014) argued that increasing social pressures on irresponsible companies, sometimes followed by a series of critical articles, have forced enterprises to rebuild their relationships with society because if companies fail to comply with social expectations, they may lose the "license to operate" which is a kind of license that society issues to the business.

Toukabri Mohamed et al. (2014) also provided that companies can have different levels of social pressure as well as different reactions to the pressure. Factors influencing pressures of enterprises and responses of firms to the pressures are potential factors influencing the level of practice and disclosure of corporate social responsibility. Indeed, many empirical studies have indicated that business sector is an element affecting the level of corporate social responsibility disclosures. For example, according to Deegan and Gordon (1996), the oil and gas mining industry are more likely to publish social and environmental information compared to other industries. An empirical study of Cooke's (1992) on the impact of firm size, stock market and types of business on the level of corporate social responsibility disclosures of Japanese listed companies showed that manufacturing firms are more likely to voluntarily report social responsibility activities compared to non-manufacturing enterprises. Furthermore, a study of Deegan and Rankin (1996) revealed that companies which would publish environmental information during the year are more likely to be sued compared to previous years, and those companies that are being sued will publish more environmental information than companies which are not being sued. Nagib Salem Bayoud (2012) also pointed out in his study that large enterprises exposed more to the media so they are more likely to carry out corporate social responsibility and nurture their images. In addition, the study also provided that companies in heavy industries such as coal mining receiving more public attention than others are under more pressure to disclose corporate social responsibility.

2.2. Stakeholder theory

Stakeholder theory is derived from the perspective of economic interest in all actions of the economist Milton Friedman (1970) in the study of corporate social responsibility. Based on that, Freeman (1983) elaborated on the stakeholder theory and identified stakeholders as either groups or individuals that may affect or be affected by the attainment of certain goals of enterprises. This approach assumes that all stakeholders which are affected by activities of enterprises include: shareholders, suppliers, customers, employees, competitors, social activists, media, regulators, academics, local peoples, labor organizations, local authorities and the government. By developing the theory of Freeman, Deegan et al. (2000) provided that stakeholder theory has two branches: ethical branch and managerial branch. The ethical branch is based on the premise that related parties have the right to be treated fairly and enterprise executives must run the business to serve the benefits of all parties. This shows that all stakeholders have the right to be provided with information about activities of the business that may affect them. Stakeholders need to know all the information, including information on toxic wastes, water pollution, social supports, even information that may not be directly related to them. Managerial branch emphasizes the power of different stakeholders. Information relating to different groups must be managed in different ways, this indicates that not all stakeholders need to be treated equally, stakeholders with more power will get more information than less powerful stakeholders as powerful stakeholders will have more impact on enterprises. Accordingly, companies will provide information to address concerns and expectations of stakeholders that have strong

influences on the business.

Overall, the two theories above are used to explain the practice and disclosures of corporate social responsibility of enterprises. According to these theories, an important factor determining corporate social responsibility disclosures is pressure from stakeholders. It is believed that manufacturing enterprises with more impact on the social and environment compared to other enterprises will compensate for the social environment through the practice of corporate social responsibility. Therefore, the study aimed at distinguishing the differences in corporate social responsibility disclosures between manufacturing and non-manufacturing enterprises. The hypotheses are proposed as follows:

Ho: There is no difference in corporate social responsibility disclosures between manufacturing and non-manufacturing firms.

H1: There are differences in corporate social responsibility disclosures between manufacturing firms and non-manufacturing firms.

3. Methodology

3.1. Measurement of corporate social responsibility disclosures

In this study, reports containing corporate social responsibility disclosures (annual reports, sustainability reports) were analyzed using content analysis method to measure the level of corporate social responsibility disclosures of enterprises. This technique is widely accepted by many studies around the world (Branco and Rodrigues, 2006; Juniati Gunawan et al., 2009; Mustaruddin Saleh et al., 2011; Olivia Tjia and Lulu Setiawati, 2012; Jitaree, 2015; Khlif et al., 2015; Mohammed Nma Ahmed et al., 2016). This procedure was conducted in the following order:

Firstly, a list of indicators of corporate social responsibility was developed and divided into four main groups which were widely concerned and practiced by Vietnamese enterprises: Information on environmental responsibility (ENV) - 10 indicators, information on responsibilities to employees (EMP) - 12 indicators, information on responsibilities to the community (COM) - 8 indicators and information on responsibilities to customers (CUS) - 5 indicators. These indicators are inherited from studies of Gunawan et al. (2008), Jitaree (2015), Nguyen (2016), Circular 155/2015/TT-BTC dated 06/10/2015 on guidelines on disclosures of information on the stock market and supplemented by the authors through the pilot test.

Secondly, after the indicators of corporate social responsibility have been developed, assessment of the level of social responsibility disclosures was undertaken by reading reports and seeking information relating to indicators in the evaluation list. If an enterprise did not disclose the i^{th} indicator, it is labeled "0", if the indicator was disclosed with general presentation or disclosed with quantitative presentation without specific explanation, it is labeled "1", if the indicator was disclosed with specific information about the activities, it is labeled "2". However, in order to ensure reliability when calculating these indicators, content of the enterprises' reports was analyzed in the following process:

Step 1: Two assistants would support authors to analyze the content of annual reports and sustainability reports of enterprises. These assistants must be knowledgeable in accounting, financing and corporate social responsibility issues.

Step 2: The content relating to corporate social responsibility in this study was discussed and communicated to two assistants by the authors. In addition, the assistants were required to understand indicators of information which need to be checked in the list of corporate social responsibility information which authors tested and made necessary adjustments.

Step 3: The authors assigned the tasks to the assistants and worked at the same time to analyze content of the reports of the enterprises and labeled each indicator of information appropriately. The indicator found will be marked and recorded carefully. The assistants and authors worked independently and did not see the results of each other.

Step 4: Cross-check was carried out with the results of the assistants and the results of the authors. If there were differences, they would check again, analyze and discuss to make the final decisions.

After determining the label for each indicator of each enterprise in each year, the level of corporate social responsibility disclosures (CSR_{Dj}) is determined as following formula:

$$CSR_{Dj} = \sum_i^n X_{ij} \quad (1)$$

In which:

CSR_{Dj}: Indicator of information disclosures of the jth enterprise

X_{ij} = 0 if ith indicator of information is not disclosed in the jth enterprise

X_{ij} = 1 if ith indicator of information disclosed in the jth enterprise is general information or quantitative information without specific explanation

X_{ij} = 2 if ith indicator of information disclosed in the jth enterprise is detailed information about specific activities

3.2. Research data

The research sample consisted of non-financial companies listed on the stock market of Vietnam during the period from 2006 to 2016. The financial companies, credit institutions and banks were excluded because information provided by these organizations has substantial differences compared to others enterprises. Specifically, the research sample included 43 enterprises listed on the stock market of Vietnam after excluding financial enterprises, credit institutions, and companies delisted in the time of the study, or companies from which the authors could not find annual reports and sustainability reports. Thus, with 43 enterprises during the period of 11 years, the authors could collect all necessary data with total number of observations of 43×11=473. Enterprises in the sample were divided into 2 groups: 27 manufacturing firms and 16 non-manufacturing firms.

4. Research results

4.1. Descriptive statistics of the average levels of CSR of enterprises

Table 1. Descriptive statistics of the average levels of CSR of enterprises during the period from 2006 to 2016

Year	The average level of CSR each year	The ratio of the average level of CSR each year to the maximum level of CSR
1	2	$3 = (2)/70$
2006	9.12	13.0%
2007	11.30	16.1%
2008	13.09	18.7%
2009	14.67	21.0%
2010	15.56	22.2%
2011	16.33	23.3%
2012	17.74	25.3%
2013	18.63	26.6%
2014	19.42	27.7%
2015	21.40	30.6%
2016	22.53	32.2%

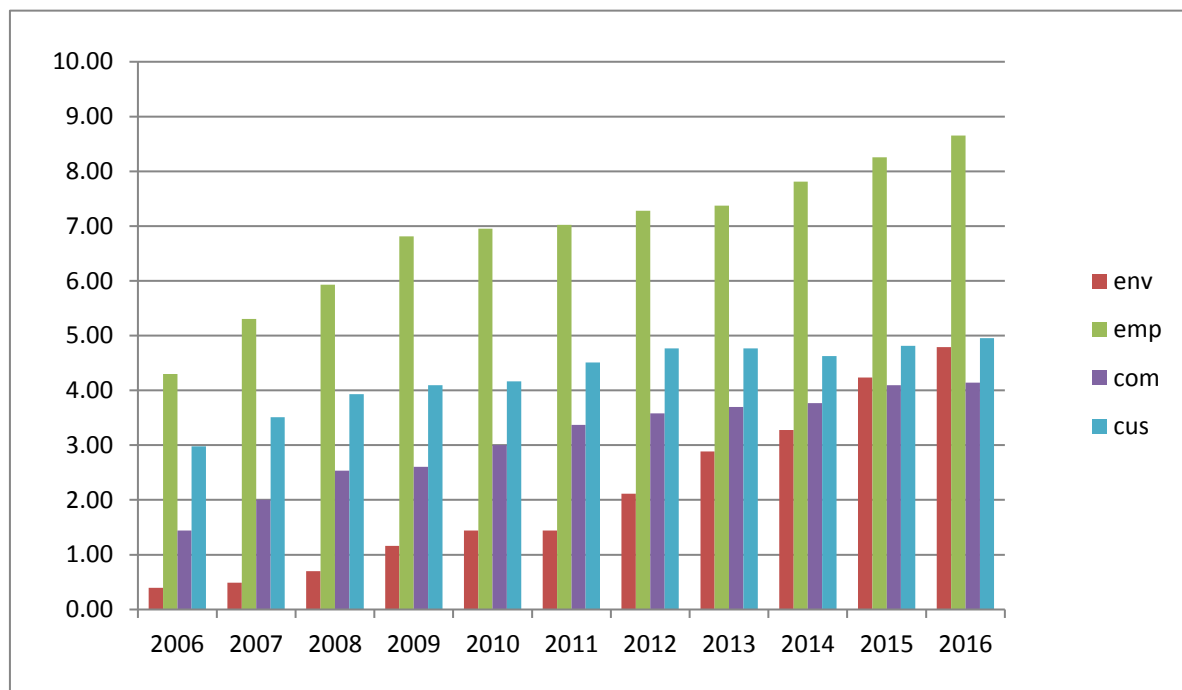
Source: calculations of the authors based on results of Stata 12.0

The above table shows that the average level of CSR has increased steadily during the period from 2006 to 2016, however, the levels of CSR were relatively low compared to maximum level of CSR of 70, the highest level of CSR achieved in 2016 was 32.2%. This result reflects the fact that in Vietnam the practice and disclosures of corporate social responsibility have been increasing due to growing pressures from stakeholders. Specifically, these pressures might derive from increasing awareness and knowledge of Vietnamese people, international economic integration requiring enterprises to comply with international regulations which oblige enterprises to practice and disclose corporate social responsibility. For example, the introduction of Circular 155/2015/TT-BTC with mandatory requirements for listed companies on the stock market to report environmental and social impact of enterprises has pushed enterprises to practice and disclose corporate social responsibility.

Detailed information on the average levels of corporate social responsibility disclosures on the environment (ENV), employees (EMP), the community (COM), customers (CUS) shows that the level of CSR on the environment is the lowest and the level of CSR on responsibilities to employees is the highest. This indicates that Vietnamese enterprises has not placed attention to environmental responsibility but paid much more attention to workers who bring the resources directly to the enterprises. This is the difference between Vietnam and developed countries in Europe, where enterprises focus on disclosing

information on the environment, energy, recycling, pollution due to pressures from customers, investors on the environmental protection of enterprises. This fact along with the stakeholder theory can help to explain the practice and disclosures of corporate social responsibility of enterprises in the context of a developing country like Vietnam where awareness and perception of people regarding environmental protection are relatively low, thus, society has little impact on the practice and disclosure of responsibility to the environment of enterprises.

Figure 1. The average levels of CSRD by categories of information during the period from 2006 to 2016

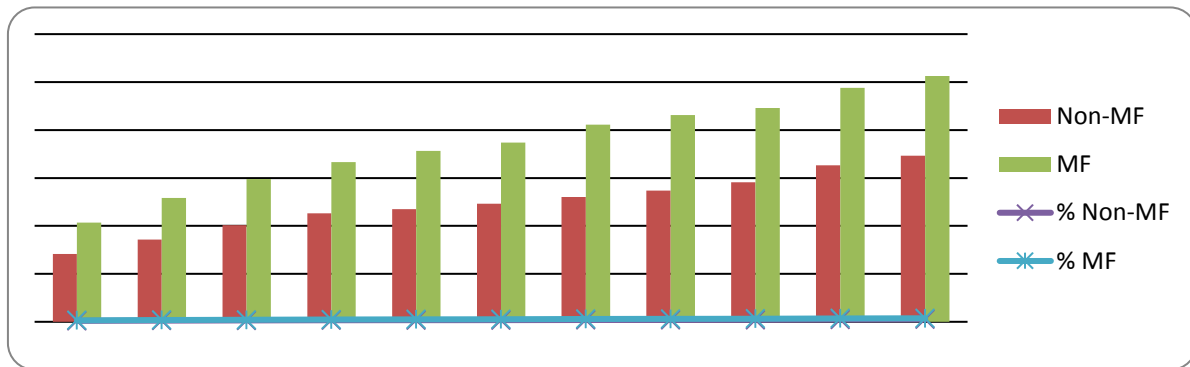


Source: calculations of the authors based on results of Stata 12.0

4.2. Descriptive statistics of corporate social responsibility disclosures of manufacturing and non-manufacturing firms

By examining the level of CSRD in manufacturing and non-manufacturing enterprises, the study proved that the levels of CSRD in manufacturing enterprises and non-manufacturing enterprises are significantly different. Particularly, the lowest level of CSRD in manufacturing enterprises was 10.3 in 2006 with the ratio of the average level of CSRD to the maximum level of CSRD of 14.8% and the highest level of CSRD was 25.6 in 2016 with the ratio of the average level of CSRD to the maximum level of CSRD of 36.6%. For non-manufacturing enterprises, the lowest level of CSRD was 7.06 in 2006 with the ratio of the average level of CSRD to maximum level of CSRD of 10.1% and the highest level of CSRD was 17.3 in 2016 with the ratio of average level of CSRD to maximum level of CSRD of 24.7%. Although levels of CSRD in both types of enterprises had a tendency to increase gradually over the years, there was always a difference in the levels of CSRD in these two types of enterprises.

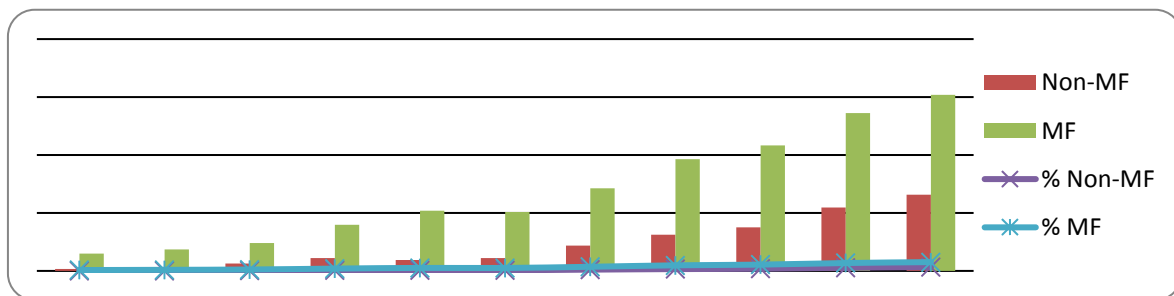
Figure 2. Levels of CSRD in manufacturing and non-manufacturing enterprises during the period from 2006 to 2016



Source: calculations of the authors based on results of Stata 12.0

The most remarkable difference between CSRD in manufacturing enterprises and non-manufacturing enterprises is in the environmental information. The issue of environmental responsibility in manufacturing enterprises has received more attention than that of other enterprises because these enterprises are considered to have more impact on social environment. In other categories of information, the levels of CSRD in manufacturing enterprises were also higher than that of non-manufacturing enterprises but the amounts of differences were not much. The following diagrams show the differences between levels of CSRD on each category of information between these two types of enterprises.

Figure 3. Levels of CSRD on the environment in manufacturing and non-manufacturing enterprises during the period from 2006 to 2016



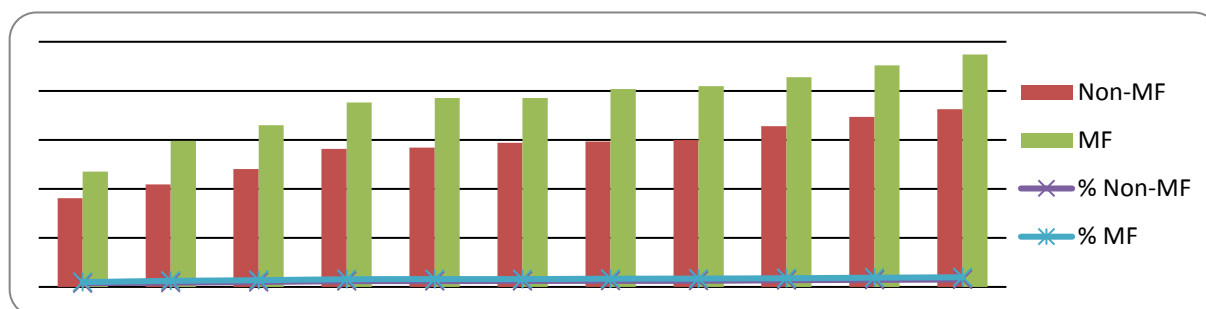
Source: calculations of the authors based on results of Stata 12.0

The above figure shows clear differences in the levels of CSRD on the environment between manufacturing and non-manufacturing enterprises. In 2006, while the average level of CSRD on environment of non-manufacturing enterprises was 0.06 with the ratio of the average level of CSRD to the maximum level of CSRD of 0.31%, these figures of manufacturing enterprises were 0.59 and 2.96% respectively. It can be seen from the figure that the levels of CSRD have increased gradually over the years and there was always a significant difference in the levels of CSRD between these two types of enterprises. For instance, in 2016 the level of CSRD on the environment was 6.07 for manufacturing enterprise and 2.6 for non-manufacturing enterprises, however, the levels of CSRD of both types of enterprises were still low with the ratios of the average level of CSRD to the

maximum level of CSRD of non-manufacturing and manufacturing enterprises of 13.13% and 30.37% respectively.

In addition to the information on the environment, the information on employees has been concerned and disclosed by many enterprises in their annual reports or sustainable development reports. The following figure represents the level CSRD on employees of manufacturing and non-manufacturing enterprises:

Figure 4. Levels of CSRD on employees in manufacturing and non-manufacturing enterprises during the period from 2006 to 2016

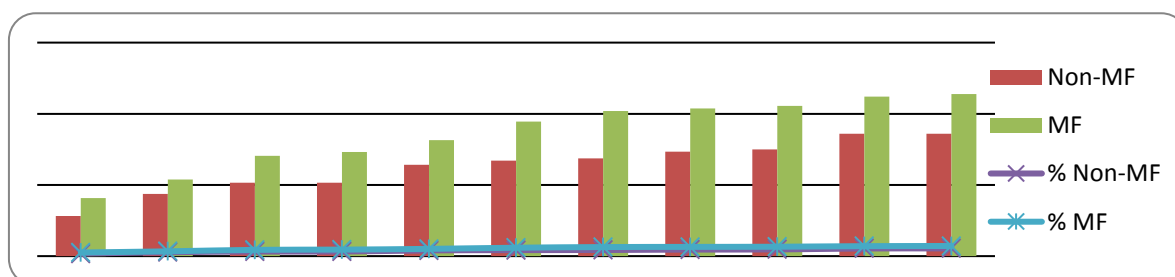


Source: calculations of the authors based on results of Stata 12.0

Unlike information on the environment, there was not much difference in CSRD on employees over the years and between manufacturing and non-manufacturing enterprises in each year. Furthermore, the above figure also shows that in 2016, the level of CSRD on employees was relatively high with the ratio of the average level of CSRD to the maximum level of CSRD was 30.2% in non-manufacturing enterprises and 39.5% in manufacturing. It indicates that the practice and disclosures of CSRD on employees are more than that on the environment. This can be explained by the fact that the Vietnamese enterprises (including both manufacturing and non-manufacturing enterprises) have placed more concern in employees who provide direct incomes to the enterprises.

Similarly to information on employees, activities aiming at developing the community have received attention of many enterprises.

Figure 5. Levels of CSRD on the community in manufacturing and non-manufacturing enterprises during the period from 2006 to 2016



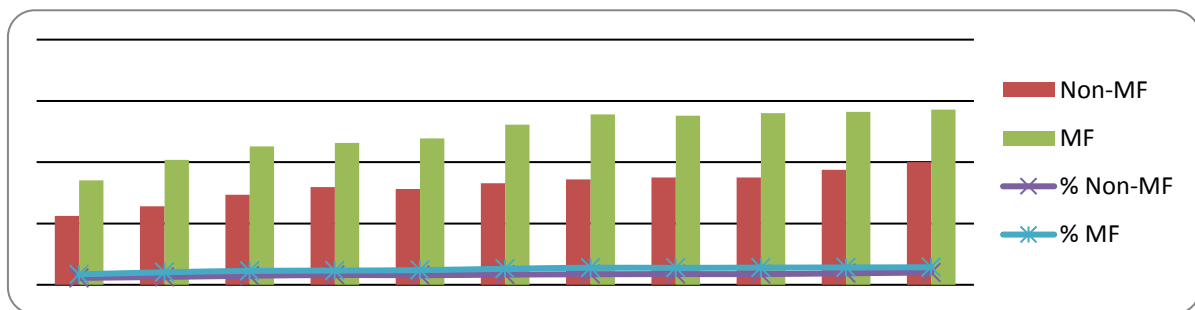
Source: calculations of the authors based on results of Stata 12.0

The above figure shows that the levels of CSRD on the community had a tendency to increase over the years and there was little difference in the levels of CSRD and the ratios

of the average level of CSRD to the maximum level of CSRD between these two types of enterprises. However, the levels of CSRD on the community of these enterprises were relatively low. For instance, in 2016, the ratios of the average level of CSRD to the maximum level of CSRD of non-manufacturing and manufacturing enterprises were 21.5% and 28.5% respectively. This may be due to the fact that most activities to support and develop the community are conducted by large and prestigious companies in the market and generally, companies did not really concern about disclosing such information on their reports.

Finally, regarding information on products linked with the responsibilities of enterprises with customers, there was little difference in the levels of CSRD between these two types of enterprises.

Figure 6. Levels of CSRD on products in manufacturing and non-manufacturing enterprises during the period from 2006 to 2016



Source: calculations of the authors based on results of Stata 12.0

For enterprises, product quality is a key determinant of whether customers will return to these companies, therefore, it plays an important role in creating the business reputation. Vietnamese enterprises have been aware of this issue early so CSRD on products has been placed great attention. It is proved by the figures that the levels of CSRD on product safety, product quality, production and product development were relatively high with the ratios of the average level of CSRD to the maximum level of CSRD of 22.5% in non-manufacturing enterprises and 34.5% in manufacturing enterprises in 2006. This figures had a tendency to increase gradually over the years, however, there was not much difference between two types of enterprises because whether it is non-manufacturing or manufacturing enterprises, the demand on information of products of customers is given a priority by enterprises as customers are critical to the survival and development of enterprises.

4.3. Regression results

In this study, to examine the differences in CSRD between manufacturing and non-manufacturing firms, T-test was used to test the difference in mean value of CSRD in general and CSRD on each information category in particular (responsibilities towards the environment, employees, the community, and customers) of manufacturing and non-manufacturing enterprises. The results are shown in the following table:

Table 2. T-test's results to investigate difference in CSRD between manufacturing and non-manufacturing enterprises

Category of information	Type of enterprises	Obs	Mean	t	Pr (T > t)
CSRD	Non-manufacturing	176	12.35795	-5.9278	0.0000
	Manufacturing	297	18.70707		
ENV	Non-manufacturing	176	0.9147727	-5.9418	0.0000
	Manufacturing	297	2.777778		
EMP	Non-manufacturing	176	5.681818	-4.9488	0.0000
	Manufacturing	297	7.592593		
COM	Non-manufacturing	176	2.528409	-2.8924	0.0040
	Manufacturing	297	3.457912		
CUS	Non-manufacturing	176	3.232955	-6.3812	0.0000
	Manufacturing	297	4.905724		

Source: analysis results from Stata 12.0

The above table shows that all categories of information have $\Pr (|T| > |t|) < 0.05$ (5%), thus, H_0 is rejected. This means that there is a statistically significant difference in CSRD on each category of information between manufacturing and non-manufacturing enterprises. This finding is consistent to research hypothesis and research results of Deegan and Gordon (1996), Cooke (1992).

The search results can complement the legitimacy theory on practice and disclosures of corporate social responsibility in the context of Vietnam where behavior of the business is affected by social pressures. Each company may have different pressures and different reactions to those pressures. Indeed, manufacturing enterprises have more impact on the social environment than non-manufacturing enterprises so manufacturing firms are given more attention and greater expectations from the social community. These pressures require more practice and disclosures of corporate social responsibility from companies to draw attention from the social community and to reduce the risks associated with the punishment for irresponsible behaviors as well as improve the companies' images and prestige.

5. Conclusion

The results of this study show that the levels of CSRD of listed companies on the Vietnam's stock market were relatively low, especially the information related to the environment. In addition, there are significant differences in the levels of CSRD in general and CSRD on each category of information in particular between manufacturing and non-manufacturing enterprises. It is believed that manufacturing enterprises have more impact on the social environment compared to non-manufacturing enterprises as manufacturing enterprises receive more attention and expectations from the society. These pressures require manufacturing enterprises to implement and disclose CSR more to draw attention from the social community to reduce risks related to punishments for irresponsible activities and to improve images of enterprises.

This research provides empirical evidence complementing stakeholder theory and legitimacy theory to explain the increasing practice and disclosures of corporate social responsibility in the context of Vietnam due to growing pressures from stakeholders at the same time. Specifically, when stakeholders put more concern on certain issue, enterprises tend to focus more on that issue.

The results suggest that the government should take appropriate measures to encourage the implementation and disclosures of CSR by increasing the shareholders' roles. In addition, the government should standardize regulations on CSRD based on common standards in the market and international practices, however, these regulations should also be tailored to the specific characteristics of each type of enterprises and the disclosed information should be categorized according to responsibility of the business to each stakeholder.

This study examined a sample of 43 enterprises randomly selected from more than 700 stable companies listed on the Ho Chi Minh stock exchange during the period from 2006 to 2016. The sample size is small as the study aimed at having balanced panel data, whereby, the results of the study may be subjective and biased. It is recommended that future research should increase the number of enterprises to have more objective results enabling broader understanding of social responsibility disclosure of enterprises listed on the stock market of Vietnam.

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The Effect of Socially Responsible Oriented Human Resource Management on Competitive Advantages: A Conceptual Model

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Abstract

In recent decades, Corporate Social Responsibility (CSR) has gradually become popular in academic and professional fields. However, there is little research on the benefits of CSR practices in the Human Resource Management (HRM). Most of these researches focused on the relation of HRM to the implementation and development of CSR objectives and strategies. Our paper proposes a theoretical model of the effect of HRM on the competitive advantages with CSR as a moderating variable. It indicates that developing a socially responsible orientation in the HRM allows companies to make improvements in variables, such as working environment and intellectual capital, leading to competitive advantages. For further research, we are planning to apply the model to Vietnamese textile and garment enterprises since the textile and garment industry is the most labor-intensive sector in the country and CSR is considered as a "passport" for textile and garment enterprises to reach the world market.

Keywords: *Corporate social responsibility; Human resource management; Competitiveness advantages.*

JEL: *A1*

1. Introduction

The uncertainty of the current environment underscores the importance of institutional factors and intangible resources in the process of firms' adaptation and survival (Gómez Mejía and Balkin, 2002; Kang and Snell, 2009). Guided by theoretical perspectives,

such as the resource-based view of the firm (Arthur and Boyles, 2007; Wright et al., 2001), human capital theory (Lepak et al., 2006) or social capital approach (Adler and Kwon, 2002; Moran, 2005), academics have demonstrated how human resources management (HRM) represents a key mechanism to unlock the organization's value and becomes one of the main sources of competitive advantages (Lengnick-Hall et al., 2009). However, the success of an organization is not based only on its internal strengths (Miles and Snow, 1978). Making adjustments to establish a strategic fit between the internal resources of firms and their environment is necessary. To facilitate these adjustments, this study proposes an emergent strategic variable in management literature that is corporate social responsibility (CSR).

CSR is defined as “the commitment of business to contribute to working with employees, their families, the local community and society at large to improve their quality of life” (World Business Council for Sustainable Development, 2000). The empirical evidence shows that those companies undertaking CSR actions can address more efficiently the pressures and social demands from the environment and their stakeholders (Bhattacharya et al., 2008a; Freeman et al., 2010; Husted and Allen, 2007).

Apart from these external benefits, the incorporation of CSR into business strategy, especially in the HRM, can provide internal benefits to firms. The literature on management shows that CSR practices in the HRM can generate a positive working environment among their employees (Bowen and Ostroff, 2004; Commission of the European Communities, 2001; Global Reporting Initiative, 2006; Gould-Williams, 2007; Muncherji and Gupta, 2004); improve the communication, trust and cooperation within an organization – social capital (Carmeli et al., 2009; Evans, 2005), and facilitates the exchange of knowledge, skills and attitudes among workers – human capital (Leana and Van Buren, 1999). As a result of these enhancements, the intellectual capital of the organization will increase, encouraging the achievement of competitive advantages (Burgman and Ross, 2007; Youndt and Snell, 2004).

Therefore, the main objective of this study is to propose a conceptual model which helps to analyze how a socially responsible oriented HRM effect to competitive advantages through working environment and intellectual capital.

2. Literature review and theoretical framework

2.1. Literature review

In recent decades, the concept of CSR has gradually acquired greater importance in academic and professional fields (Carroll and Shabana, 2010; Crane et al., 2008). Researchers from different disciplines show how the firms that incorporate social responsibility in their actions can increase their financial performance, improve the relationship with their stakeholders, and enhance the commitment of their employees. (Table 1).

However, there are few kinds of research on the benefits of CSR practices in the HRM field (Cuganesan, 2006). So far, almost researchers have emphasized the relationship of HRM in the implementation and development of CSR objectives and strategies (Garavan

and McGuire, 2011; Sharma et al., 2009). In this manner, Rupp et al. (2006) highlight those organizations which carry out CSR practices can achieve more satisfaction and commitment from their employees. According to a study conducted by Sirota Survey Intelligence1 (2007) in more than 70 companies during 2007, 70% of workers are more satisfied and committed to those companies which have social and environmental responsibilities. In this way, Bhattacharya et al. (2008b) proclaim that CSR activities comprise a legitimate, compelling and increasingly important way to attract and retain good employees as well as a good tool to satisfy customers with the aim to differentiate the company from its competitors in the market.

In our research, we propose a theoretical model of the influence of HRM on the competitive advantages with CSR as a moderating variable

Table 1: Empirical studies on the relationship between CSR and performance

Author, time	Sample	Findings
Waddock and Graves (1997)	469 firms	Companies that carry out a set of CSR practices to improve the relationship with their stakeholders (employees, customers, communities and environment) and consequently increase their financial performance
Hillman and Keim (2001)	308 firms	There is a positive correlation between CSR and the value creation for the stakeholders and the shareholders of the company
Simpson and Kohers (2002)	385 firms	There is a positive link between CSR actions and social and financial performance of an enterprise
Déniz-Déniz and De Súa Pérez (2003)	50 firms	Companies that engage socially responsible human resources practices meet the expectations of their employees, achieving greater performance and commitment from this group as a result
Tsoutsoura (2004)	500 firms	There is a positive linkage between CSR and financial performance that enables to invest in a improvement of employee relations, environmental concerns and community relations
Mittal et al. (2008)	50 firms	Companies that implement CSR initiatives (codes of ethics and conduct that listed in their annual reports) generate a significant economic and market value
Rettab et al. (2009)	280 firms	CSR has a positive impact on organisational performance: financial performance, employee commitment and corporate reputation
Surroca et al. (2010)	599 firms	CSR practices provide an improvement of intangible variables of the organisation (innovation, human capital, reputation, culture and economic performance)

Source: by authors

2.2. Theoretical framework

2.2.1. External adjustment of CSR

Companies play a vital role in the development and welfare of society (employment generation, economic wealth, distributing goods and services, etc.), so they must assume additional responsibilities that go beyond their economic and legal obligations (Davis, 1960).

In this sense, many firms have incorporated social, ethical and environmental commitments to meet the social and stakeholder's expectations (Logsdon and Wood, 2002; Matten and Crane, 2005). The expression of these commitments has resulted in the integration of CSR by a large number of firms in order to legitimate their activity and increase their competitiveness (Aguilera et al., 2007; McWilliams and Siegel, 2001; Porter and Kramer, 2006). On the other hand, the firms that manage their resources in an irresponsible manner are punished with heavy criticism by the market. It causes erosion of their image and value, damaging their stakeholder's relations seriously (Dowling, 2004; Sen and Bhattacharya, 2001). Some relevant examples of the social impact of firms are the accounting manipulations of information by Enron Corporation, the environmental pressures on Shell Oil's or the pressures on Nike about their employment policies (Wheeler et al., 2003). These companies were forced to redirect their behavior towards sustainability models to adapt to society requirements (Global Reporting Initiative, 2002, 2006; Principles for Responsible Management Education, 2009). For these reasons, literature based on the stakeholder's approach underlines the importance of considering the needs of the firms interest groups (society, government, customers, suppliers, employees, shareholders, etc.) who can affect the firm's outcomes (Argandoña, 1998; Barnett, 2007).

According to the instrumental view of stakeholder theory, companies that combine the satisfaction of the interest groups with the accomplishment of its objectives can conduct their activities with greater guarantees of success as well as improve the relations with these groups (Donaldson and Preston, 1995; Jones, 1995; Odgen and Watson, 1999). Likewise, the process of adjustment between companies and their environment requires the internalization of a set of institutional factors by firms in order to be accepted by the community and achieve more competitiveness (Dacin, 1997; Dacin et al., 2008; Scott, 2001). Thus, Meyer and Rowan (1977, 1991) and DiMaggio and Powell (1983) show how organizations that:

1. Mimic the practices and strategies of greater success companies in their markets – mimetic isomorphism.
2. Establish and maintain good relations with their stakeholders – coercive isomorphism.
3. Get the support and institutional legitimacy of their community – normative isomorphism.

In our research, we base on the coercive isomorphism. Concretely, we focus on the relationships between a company and its employees as internal stakeholders. According to Lockwood (2004) and Sharma et al. (2009), workers play a key role in the development of CSR strategies. The level of employees' participation increases the welfare of firms as well as provides internal benefits from their commitment and loyalty (Brammer et al., 2007; Collier and Esteban, 2007; Cullen et al., 2003). A strong organizational culture reinforced by responsible HRM practices can ensure high levels of success in the market by the improvement of employee's satisfaction, their productivity, customer loyalty, legal compliance and the approval of society (Sharma et al., 2009). For these reasons, a strategic

approach in the way of managing human capital can be crucial in the process of integrating CSR (Fuentes-García et al., 2008).

2.2.2. Internal adjustment of CSR

Regarding the company's internal frame, literature stresses the importance of linking business strategy to HRM for improving the organizational performance (Becker and Gerhart, 1996; Miles and Snow, 1984; Youndt et al., 1996). The HRM concept as Martín-Alcazar et al. (2005, 2008) mentioned represents an evolution of the traditional concept of HRM towards a new integrative perspective which includes: a vertical link with the strategic management process, a horizontal link with the HRM and an external link with other organizational and environmental factors. The review on HRM underlines that HRM system can be a unique source of sustainable competitive advantage if there is a fit between its internal and external components (Lengnick-Hall and Lengnick-Hall, 1988; Wright and McMahan, 1992). Muncherji and Gupta (2004) examine, in this sense, how sociocultural values can affect the development and building of HRM in organizations. Recently, Peters et al. (2009), and Galbreath (2009, 2010) have discussed the implications and benefits of a social phenomenon like CSR on the organization's strategy and their performance. The analyses of both authors suggest that CSR cannot be separated from corporate strategy, showing an important gap of research between CSR and the HRM.

2.3. Research hypothesis

This paper proposes certain improvements in variables such as work environment and intellectual capital can positively affect the competitive advantages as a result of HRM with a socially responsible orientation.

Different studies and researches in CSR show how the integration of a social orientation in the firm's HRM can impregnate HRM as well as the organizational culture of the company (fair labor rights, health and safety, quality of work, etc.) (Brammer et al., 2007; Greening and Turban, 2000; Peters and Vassar (2009); Peterson, 2004). According to the Commission of the European Communities (2001) and the Global Reporting Initiative (2002, 2006), there are five socially responsible practices that should be focused to analyze their effects on organizational performance:

1. Appropriate employment relations and working conditions
2. Communication, employee involvement and social dialogue
3. Education and training
4. Occupational health and safety
5. Diversity and equal opportunities.

Thus, the first research hypothesis is:

H1: CSR orientation in the HRM has a positive effect on competitive advantages.

According to the literature, HRM with socially responsible guidance can improve the working environment within the company (Gould-Williams, 2007; Patterson et al., 2004; Rogg et al., 2001). Moreover, in a context in which workers are treated fairly and equitably

it is easier to create a work environment based on harmony and welfare, where the employees feel more committed and happy, reaching in this way in the long term more productivity and efficiency (Aguilera et al., 2007; Dutton et al., 1994; Phusavat et al., 2009). Thus, the second research hypothesis is:

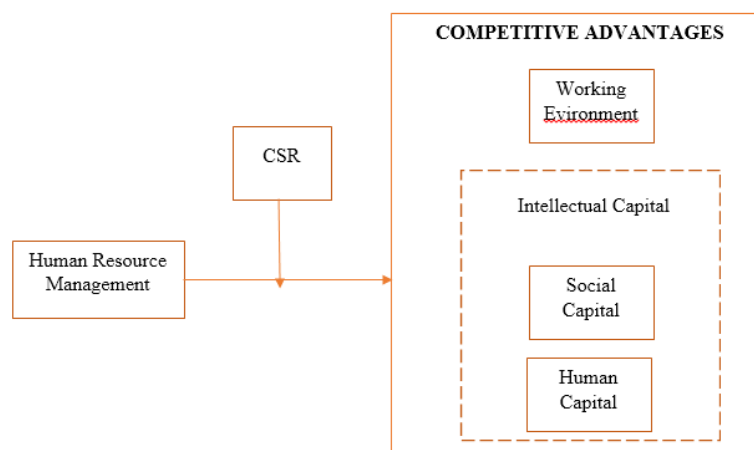
H2: CSR orientation in the HRM has a positive effect on working environment of organizations.

Additionally, the improvements in the working environment facilitate communication, trust and cooperation among its members – social capital (Adler and Kwon, 2002; Nahapiet and Ghoshal, 1998). A positive work environment encourages the relations and the frequency of formal and informal communication within an organization, providing a higher cohesion among employees and the achievement of organizational goals (structural dimension of social capital) (Chen et al., 2009; Galán and Castro, 2004; Tsai and Ghoshal, 1998). This network of relations enhances the trust and reciprocity among workers, facilitating collective welfare and a stronger commitment between them (relational dimension of social capital) (Prusak and Cohen, 2001; Putnam, 2001). The improvement and quality of the relationships promote an exchange of knowledge, skills and their experience among employees – human capital, increasing in this way the intellectual capital within the organization, encouraging the achievement of sustainable competitive advantages through this capital (Youndt and Snell, 2004). Hence, the third research hypothesis is:

H3: CSR orientation in the HRM has a positive effect on intellectual capital of organizations.

According to these research hypotheses, we propose the conceptual model as below

Fig. 1. Conceptual model



Source: by authors

3. Concluding remarks

Our review indicates that the development of a socially responsible orientation in the HRM allows companies to obtain improvements in variables, such as working environment and intellectual capital, leading to competitive advantages. According to a report published by PricewaterhouseCoopers (PWC) in 2010 aimed at managers and professionals of different parts of the world, recruitment and retention of talent are one of the most important current

concerns of organizations regardless of their size. The professional consultant underscores that 85% of HRM believe that attracting and retaining talented people can offer companies a significant long-term advantage of differentiation, which could result in a positive way to their account results. It is clear that companies must provide issues and social improvements in their HRM which can meet the expectations of their current and prospective employees.

Therefore, the integration of CSR in the field of HRM represents an opportunity to improve the engagement, sense of belonging and productivity of employees. In this sense, CSR has become a key partner that contributes to the value's generation in the HRM, helping to retain and motivate the human capital and improving the firms' competitive advantages. To sum up, policies and organizational practices represent the principal initiatives of HRM to internalize social responsibility and ensure that CSR issues become a vital part of the firms.

4. Future research

This research is a very early stage of analysis and construction of the theoretical framework. Once the propositions can be tested, we will offer a series of indicators to clarify and quantify the benefits of HRM with a socially responsible orientation.

We are planning to apply the model to Vietnamese textile and garment enterprises as these enterprises are the spearhead of the economy, and export turnover ranked second in the country. The textile and garment industry is the most labor-intensive sector in the country so the human resource management activities will directly affect their competitive advantages. Moreover, according to Hoang Thi Thanh Huong (2015), CSR is considered as a "passport" for textile and garment enterprises to reach the world market. The sample of our future study will compose of large-scale Viet Nam companies (more than 500 employees) that have HRM department, belonging to textile and apparel industry. Based on Dess and Davis (1984) and Robinson and Pearce (1988), we will develop questionnaires aimed at the general managers, HR directors and employees in order to analyze the following issues:

1. Competitive advantages
2. Internal measures of CSR
3. HRM
4. Intellectual capital
5. Working environment
6. Organizational performance.

The questionnaire uses a Likert scale to measure these items. We will measure CSR following to Mirsha and Suar (2010). Regarding intellectual capital, we follow the methodology proposed by Bontis et al. (1999) and Hung (2004) to structure and measure the intangible asset in three different aspects: structural, social and human capital. Moreover, according to McGuire et al. (1988), we consider experts' evaluations and also the content of annual CSR reports and other corporate documents to contrast the information. Depending on the number of valid responses and the progress of the investigation, we will determine

the statistical methodology to implement different analysis techniques. Through the statistical results, we will proceed to contrast the hypotheses and analysis of the conclusions reached in the academic and professional field. Likewise, there is a great interest in analyzing the social orientation of HRM in other countries to make comparisons. In this sense, Brewster (1995, 1999) and Gooderham et al. (1999) show that the environment influences the performance and corporate strategies as well as the development of the HRM.

Another significant aspect could be studied the effect of socially responsible HRM in social capital dimensions such as structural and cognitive. Schoemaker et al. (2006) proposed that CSR can be integrated with greater effectiveness in organizations where social capital is more developed. In addition, Degli-Antoni and Saconi (2010), proposed the idea of a virtuous circle between the different levels of social capital and the implementation of CSR practices, encouraging the creation of a cooperative network between the firm and all its stakeholders as well as the promotion of social norms of trust, trustworthiness and cooperation. For these reasons, social capital plays an important role in the process of integration and development of CSR.

Finally, the effective implementation of HRM, oriented towards social responsibility, not only depends on the variables that we have shown. The status of individual employees (behaviors, attitudes, reactions, experiences, job satisfaction, etc.) and the perception that they have about the organization and carrying out their policies are very important in the process of implementation CSR (Liao and Rupp, 2005). According to Colquitt et al. (2001), workers feel more identified, satisfied and engaged with companies that exercise social responsibility. Therefore, we believe that contributions based on organizational justice theory (Fortin, 2008; Rupp et al., 2006) can help us to analyze the behavior of employees in the process of implementing CSR through the analysis of three kinds of employee's perceptions: procedural, distributive and interactional.

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The Factors Affecting Accounting in the Era of Technology Revolution 4.0

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Abstract

Accounting is the industry that takes advantage of new technologies to improve productivity and effective management. In the new era, cyber security, digital service delivery, robotics, augmented & virtual reality, and artificial intelligence have dramatically influenced accounting and financial transactions, or in other words accounting has become an integral part of this connected world. This context also changes working habit and ways of thinking of accountants, helping them understand that their manual work can be completed by automating technology, so that they can spend more time and efforts on those require the use of intelligence.

Keywords: *Accounting 4.0, Artificial intelligence, Big data, Technology revolution 4.0, Interoperability*

1. Introduction

In the 21st century, competition among industries depends on modern technology. Information technology has quickly reshaped the world and redefined the role of people, especially in the field of accounting and auditing. Capturing new technology, evaluating its role as it emerges and the meaning of information technology in the era of technology revolution 4.0 are essential to minimize costs and increase the benefits of accounting. Accounting and finance professionals need to consider the challenges and opportunities that new technology creates. From there, enterprises and organizations may introduce new strategy for the revolution.

An introduction should be illustrated the following main points:

(i) Reasons for doing the research and the importance or necessity of research topic from theoretical and practical perspectives.

(ii) Identify the issues of research: Research Articles: (1) The major issues of accounting in the new technological revolution are: social collaboration, digital service delivery, big data, payment systems, cyber security, robotics, augmented and virtual reality; (2) Study on the influence of factors on accounting in the technological revolution 4.0

(iii) Objectives of the research

Study the influence of factors on accounting in the 4.0 technology revolution to identify major factor factors that will help accountants change accounting methods, how to organize the accounting

2. Literature Review

There are many studies on the factors affecting accounting 4.0 such as accounting records, interoperability, virtualization ...

Accounting records

According to Deniz Appelbaum, Alexander Kogan, and Miklos A. Vasarhelyi [7]: Most accounting records are included in accounting software. Accounting records can be programmed for each accounting items such as fixed assets, inventory, costs, revenues, etc. to allow for real-time measurement and processing of information. For example, inventory evaluation and measurement will be automated by tracking the current purchase value (Krahel and Titera 2015). Production can also be measured continuously by collecting real-time data on energy consumption of production lines and labor costs. ... Such automation can reduce manpower on material observation.

Interactive ability

According to Jun Dai and Miklos A. Vasarhelyi [8]: Industry 4.0 includes six key technology principles: interoperability, virtualization, decentralization, real-time capabilities, service orientation, and modeling... Interoperability is an important element of industry 4.0 as well as a very important concept. In the 4.0 industry, field devices, machines, technologies and even products will be connected through a global network (Drath and Horch 2014), enabling interactions within the enterprise and the entire value chain. When interoperability changes a business model, it can continue to impact accounting. In accounting 4.0, the association between suppliers, customers, banks and other business entities may allow for examination over time. If a transaction involves two business entities, two ERP systems will share accounting information. Entities will receive information, match the corresponding data in their system and issue a warning if they are not appropriate. Such interaction can automatically check for transactions and highlight suspicious transactions for accountants. Internally, transactions from different business processes can be used in combination to verify the continuity, rationality of the process (Kogan, Alles, Vasarhelyi and Wu 2014).

Virtualization

According to Atzori, L, A. Iera, and G. Morabito. 2010: In the 4.0 technology era, individual business processes or the whole value chains can be digitized to facilitate control and analysis. Recorded information can significantly reduce the workload of the accountant. Since everything involved in a business process is virtualized, an accountant can do the job on the web. For example, the virtual world may record the time when the material came in until when the product leaves the company and is sold. Accountants can use this information as a substitute for inventory accounting by comparing mirrored transactions with the company's ERP system. Mirror world can also be used to track non-financial data eg HR, warehouse.

Enterprises in the accounting environment 4.0, the internal control mechanism can interfere with each individual machinery to continuously monitor accounting data and detect abnormal transactions beyond the expected threshold. Such systems will be able to self-adjust norms, standards when the environment changes and update to the accounting program. These systems will be significant improvements to the performance of the accounting profession according to Vasarhelyi and Halper (2011).

Technology

According to Akyildiz, IF, W. Su, YS Subramaniam, and E. Cayirci [1]: Sensors, CPS, IoT, IoS and intelligent plants are the core technologies in the 4.0 technology era and can completely replace human role in data collection. Sensors can accelerate the collection of accounting data to real time with a much wider range of data throughout the business process at a relatively modest cost. Another essential device in Accounting 4.0 is the Cyber Physical System (CPS), a new technology that helps tracking and documenting production, data analysing and building intergrated virtual model. In the context of Accounting 4.0, CPS can be used to track and analyse accounting data, discovering irregularities over time. The ERP system can record accounting transactions and business events without human intervention. By automatically comparing the information stored in the CPS and corresponding accounting data in the ERP system, accountants and management of customer companies can receive real-time alerts if a transaction violates accounting standards.

3. Theoretical Framework and Methods

3.1. The factors affecting accounting in the time of technology 4.0

The major issues of accounting in the new technology revolution are: social collaboration, digital service delivery, big data, payment systems, cyber security, robotics, augmented and virtual reality, artificial intelligence.

Social collaboration

The professional working style of accounting will be shaped in social collaboration. Crowdsourcing will be used extensively to contribute to the development of accounting services. Social tools will be integrated into the system to transfer accounting data to customers and other partners in accounting transactions.

As the use of social tools becomes common, accountants need to change their ways of approach, communication and collaboration. Social collaboration will help accountants shorten work completion times by the end of the month, improve decision-making and productivity. However, new challenges will emerge, such as: risks to sensitive company data, prudence in making key strategies ...

Digital service delivery

Accountants are using digital service delivery to provide and access resources. Enterprises can provide self-service features such as:

Online database that customers can use to access document, accounting services, tax declaration services and audit services. These types of services can be completed cross-border. With service delivery, accountants can perform services efficiently and quickly, accounting procedures are arranged automatically and accurately. At the same time, accounting principles must be based on the International Financial Reporting Standards.

Big data

The world generates 2.5 trillion bytes of data per day in the form of barcodes, telephone signals, digital images, transactional databases, personal location records, reporting systems. These are countless transactions that accountants need to deal with. Moreover, transactions are primarily in the form of data comes first and materials come after. Therefore, it creates huge risks, requiring prudent accounting principles. Especially large corporations with terribly big data; creating challenges for accounting. In addition, vendors also offer enterprises a variety of softwares for resource management, sales management, scheduling, and on-demand access. This requires accountant to have many tools to handle as well as dealing with the challenge of data security.

Payment systems

The Internet has become a trading hub all over the world. Consequently, global payment systems are formed as credit and debit cards, electronic wallets, smart cards increase. Electronic payments through mobile phones are increasing as well as the emergences of many types of virtual currencies and online lending websites. This requires accounting to update regularly, immediately and linked to the bank automatically.

Besides these utilities, payment systems in the new technology revolution will face the following challenges: There will be many outside suppliers so competition will become fiercer; increasing volume and value of transactions means frauds will also increase. Some of the current payment systems will collapse, and the concepts of cash will become less prominent.

Virtual reality

Virtual reality is where we can interact online with simple interfaces such as keyboards, mice and headsets, etc. As the virtual experience becomes more common, accounting will face new challenges: the risks from artificial intelligence, virtual reality, high cost and risks in managing new areas.

Artificial intelligence

Artificial Intelligence (AI) is a machine or software that can behave like a human brain. The software is capable of mimicking human behavior to make independent decisions, can learn and interact with each other.

From there it is possible to build an artificial accounting software with scenarios for specific types of transactions to solve issues occurring in real life. Artificial intelligence can automate repetitive process operations in place of human. Accounting software built on artificial intelligence can effectively solves problems, complies perfectly with the procedures, without errors. However, it also has the limitation that accounting staffs may be unemployed, creating the social consequences.

3.2. Research methods

To assess the impact of factors on accounting in the age of digital revolution, the author has issued 130 questionnaires for 10 enterprises: Vinamit JSC, Samsung Group, Duhal Lighting Equipment, Color Life JSC, FPT Software Company, DMSpro Company, E & Y, KPMG, DELOITTE, AASC and used the Likert scale with the following contents:

Social collaboration	1.1. Introduce better controls and education to enforce governance (SIC)
	1.2. Develop new skills and attract digital natives (SDS)
	1.3. Adapt to meet the changing expectations of the profession. (SAC)
Digital service delivery	2.1. Recruit those with the required digital literacy skills and/or develop them (DRS)
	2.2. Plan tactically and strategically to deliver competitive advantage (DPS)
	2.3. Consider the implications of businesses, advisers, regulators, and others becoming progressively more connected and exchanging data automatically (DED)
Big data	3.1. Manage the increasing volume and complexity of the data to be analysed and audited (BMD)
	3.2. Help other parts of the business to better analyse and exploit data (BHO)
	3.3. Estimate cost and return on investment (BEC)
Payment systems	4.1. Use their experience and insight to innovate current systems and adapt to new and emerging payment systems (PIS)
	4.2. Develop expertise and guidance on areas such as online and virtual payments and their taxation (PDS)
Virtual Reality	5.1. Develop new approaches to measuring and analysing costs and return on investment (VDA)
	5.2. Consider new ways to conduct business/enhance services by applying AR (VNC)
Artificial intelligence	6.1. Stay informed and know what is possible (AIN)
	6.2. Assess the potential to automate tasks and procedures (AAA)
	6.3. Up-skill to take advantage of the potential to focus on higher value work. (AUW)
	ACCOUNTING 4.0

Independent variables ranged from 1.1 to 6.3, consisting of six groups:

- Social collaboration (1.1, 1.2, 1.3): SCI, SDC, SAC
- Digital service (2.1,2.2, 2.3): DRS, DPS, DED
- Big data (3.1, 3.2, 3.3): BMD, BHO, BEC
- Payments systems (4.1, 4.2): PIS, PDS
- Virtual reality (5.1, 5.2): VDA, VNC
- Artificial intelligence (6.1, 6.2, 6.3): AIN, AAA, AUW

Dependent variable is: ACCOUNTING 4.0

3.3. Results and Discussion

The subjects of the survey were 6 production companies and 4 audit firms. The surveyees are: Accountant (88 people) and auditors (42 people).

After performing Cronbach's alpha tests, multi-collinear, correlation ... the author made the exclusion of variables SAC, DRS.

Research Results on Factors Influencing Accounting in the 4.0 Technology Revolution:

Table 1- Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SCI	130	1.0	3.0	1.946	.5881
SDS	130	2.0	4.0	2.746	.5328
DPS	130	3.0	5.0	4.438	.5283
DED	130	4.0	5.0	4.792	.4072
BMD	130	3.0	5.0	3.215	.4311
BHO	130	3.0	4.0	3.700	.4600
BEC	130	4.0	5.0	4.500	.5019
PIS	130	2.0	3.0	2.662	.4750
PDS	130	2.0	5.0	3.277	.7677
VDA	130	3.0	4.0	3.700	.4600
VNC	130	2.0	3.0	2.800	.4015
AIN	130	3.00	4.00	3.3923	.49015
AAA	130	3.00	5.00	4.0000	.46589
AUW	130	4.00	5.00	4.6308	.48446
Valid N (listwise)	130				

With the statistics described in Table 1; “the implications of businesses, advisers, regulators, and others connected and exchanging data automatically” (DED) were the most significant influences on accounting, with the highest average of 4.792. Next are “Up-skill to take advantage of potential to focus on higher value work” (AUW, Mean = 4.6308); “Estimate cost and return on investment” (BEC, Mean = 4.500); “Plan tactically and strategically to deliver competitive advantage” (DPS, Mean = 4.438).

The paper also examines whether there is any difference in the perception of factors influencing accountants in the 4.0 technology revolution between the views of accountants and auditors.

Determining the difference in perceptions about the influence of factors on accounting in the 4.0 technology revolution

Descriptives
ACCOUNTING4.0

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Accountants	88	5.000	.0000	.0000	5.000	5.000	5.0	5.0
Auditors	42	4.190	.3974	.0613	4.067	4.314	4.0	5.0
Total	130	4.738	.4412	.0387	4.662	4.815	4.0	5.0

Test of Homogeneity of Variances

ACCOUNTING4.0

Levene Statistic	df1	df2	Sig.
139.454	1	128	.000

Since Sig <0.05, there is no difference in the perception of factors affecting accounting 4.0 between accountants and auditors.

EFA Results

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.530
Approx. Chi-Square	895.013
Bartlett's Test of Sphericity	df
	91
	Sig.
	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.951	21.079	21.079	2.951	21.079	21.079	2.182	15.587	15.587
2	2.055	14.682	35.761	2.055	14.682	35.761	2.077	14.833	30.420
3	1.950	13.927	49.688	1.950	13.927	49.688	1.884	13.456	43.876
4	1.654	11.813	61.501	1.654	11.813	61.501	1.877	13.408	57.284
5	1.519	10.847	72.348	1.519	10.847	72.348	1.835	13.106	70.390
6	1.252	8.939	81.288	1.252	8.939	81.288	1.526	10.898	81.288
7	.713	5.092	86.380						
8	.568	4.059	90.440						
9	.454	3.241	93.680						
10	.263	1.881	95.561						
11	.242	1.728	97.289						
12	.195	1.391	98.681						
13	.104	.741	99.422						
14	.081	.578	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrixa

	Component					
	1	2	3	4	5	6
AUW	.856					
AIN	.830					
AAA	.762					
BEC		.873				
BHO		.872				
BMD		.642				
VNC			.925			
VDA			.914			
SCI				.959		
SDS				.883		
PIS					.911	
PDS					.869	
DED						.863
DPS						.857

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

KMO 0.53 demonstrates that factor analysis is appropriate.

Bartlett's test is statistically significant (Sig. <0.05): the observed variables are correlated in overall.

Percentage of variance 81,288% > 50%: proportion of variance explained 81,288%.

Regression

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.288	.797		5.382	.000		
DPS	.512	.120	.515	.135	.003	.708	1.412
DED	.516	.121	.507	.960	.001	.663	1.509
BMD	.451	.117	.479	.691	.001	.633	1.579
BHO	.418	.101	.418	.173	.003	.740	1.351
PIS	.334	.134	.336	.251	.002	.395	2.530
PDS	.351	.183	.389	.617	.002	.400	2.499
VDA	.012	.158	.013	.079	.001	.306	3.268
VNC	.025	.170	.022	.144	.000	.344	2.906
AIN	.418	.118	.420	.152	.002	.479	2.089
AAA	.439	.126	.441	.306	.000	.469	2.134
AUW	.411	.122	.412	.090	.002	.460	2.176

a. Dependent Variable: ACCOUNTING4.0

Regression results: The most influential factor for accounting in the 4.0 technology era is “The implication of businesses, advisers, regulators, and others becoming more connected and exchanging data automatically” DED (Standardized Beta = 0.516); followed by “The problem of planning tactically and strategically to deliver the competitive advantage” DPS (Standardized Beta = 0.512); followed by “The problem of managing the increasing volume and complexity of the data to be analyzed and audited” BMD (Standardized Beta = 0.451); followed by “Assess the potential to automate tasks and procedures of artificial intelligence” AAA (Standardized Beta = 0.439).

4. Recommendes solutions and conclusions

4.1. Recommendes solutions

About Digital service

It is easy to see that large-scale digitization occurred during the Fourth Industrial Revolution. Therefore, accounting need to create better data quality - improving timeliness, accuracy, reliability and comparability of reported data. This requires accountants to use appropriate and consistent means of measurement and reporting, and to ensure transparency.

This means that data must be available immediately (real time) at all times of the day (24 hours, 7 days a week and 365 days a year). Information on financial statements must be improved for accuracy, reliability and comparability.

Real-time data migration, through digital media data, can be delivered directly to stakeholders and there is little need for third-party audits; so the data must be reliable.

Improved data transfer for management control

Big Data facilitates data mining for all decision types, all types of managers and all kinds of gatekeeper. Machines with real-time data will no longer have to wait passively for operator decisions and instructions. People can optimize production schedules, predict errors and perform maintenance and repairs, actively propose work arrangements and adjust operating parameters to maximize productivity and product quality. Therefore, the need to control the transmission of data is extremely necessary.

The role of accounting human resources

Accounting includes stages such as collecting, processing, analyzing and providing information. All these stages can be replaced by machines. So, instead of manual work, accountants must be the ones who know and use technology for their work.

An employee should develop the following skills: Ability to code and understand big data technology structures, ability to construct experiments, gather and analyze data, make evidence-based decisions, strong communication skills, strong quantitative skills in statistical analysis, visual analytics, machine learning, and ability to analyze unstructured data, business expertise – a good sense of where to apply analytics and big data.

Employers should look for graduates that can think critically, identify issues, develop questions, determine appropriate analyses, interpret results; graduates that are data literate, know what data is available, how it is stored, where it is stored, how to access it; understand data science and be able to bridge the gap between technical knowledge and business knowledge; graduates that can communicate findings.

Moreover, accounting - auditing should follow certain legal legislations, humans are always needed in the procedure of updating equipments to be used for their works. Artificial intelligence is a man-made and for-human product; automation can change circumstances and working conditions, but it can not be asserted that artificial intelligence can totally replace human in the field of accounting - auditing. This will place higher demands on accounting: computer processing, information security, data analysis and computer networks.

However, every individual and organization working in the field of accounting - auditing must be aware of the importance of technology to apply it to suit the trend, save resources and increase the efficiency of work.

4.2. Conclusion

Accounting continues to evolve in the technological revolution 4.0. Information technology has a great impact on the accounting, auditing profession. Information

technology helps accounting and auditing keep up with the times, reducing the expectations gap in accounting.

Information technology helps accounting, auditing change their approaches, methods or means and techniques but does not change the objectives of accounting. Information technology helps accountants reduce the expectation gap, the risks and costs accounting, and improve accounting quality.

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The Impact of Digital Technology on System of National Accounting

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Abstract

The digital evolution, which is currently happening day by day, has changed the very nature of work for accountants and pushed researchers as well as practitioners alike to struggle with a host of threats and opportunities facing. The government interfere into macroeconomic not only maintain a watching brief across a broad range of technologies and trends but also must deal with a wide array of the construction of system of national accounting (SNA) including new policy challenges and the need for new system. The article aims to primarily analyse the impact of digital technology to national accounting as a whole. Some suggestions are also illustrated in order to advise the government and regulators to exploit technology in the most benefit method.

Keywords: *Digital technology, System of national accounting*

1. Introduction

The 21st century has experiencing the change of industrial economy to the digital economy. The digital economy differs in fundamental respects with the dominance role of a single sector, information and communication technology, as the primary source of innovation. Today, a smart phone has more computing power and data storage capacity than were available to the entire world in the 1960s. Equally striking, the digital factor improves all sectors of the global economy. For example, computers made striking progress from their first introduction during World War II to the end of the 20th century, but the truly critical development in the rise of the digital economy has been the creation of the Internet. The most important contributions of the Internet are to improve communications and sharing of

information. Nowadays information which is also underpinned and influenced by the technology trend, includes cloud, big data, mobile and social collaboration are converging to change the ways of reflection.

Accountants in practice and in the business function are part of the connected world. The accountants have always exploited technologies to help them to complete their tasks more accurately, quickly or simply: from the incised clay tablets through the adding machines, to the calculators and computers. In the 21st century, the crucial problem is to account for the value of information. Relevant accounting information currently still maintains two values of prediction and confirmation; however, it is naturally a public good and costly to produce. These changes bring new policy challenges and, with them, the need for new systems of national accounting.

The main purpose of the paper is to address many ways in which the recent dramatic digital changes that have reshaped the national accounting. By keeping informed about technologies as they evolve, considering new technologies as they emerge, the Government can be prepared to minimize the burdens and maximize the benefits to build the national accounting. In this way the technology can be exploited wisely. The article has two main objectives: Firstly, to identify components of system of national accounting and digital technology. Secondly, to address and analyse the impact of digital technology on system of national accounting.

2. Theoretical Framework and Analysis

2.1. Theoretical Framework of Digital Technology

Technology trend is seen as a solution for time management, labor shortages, communication and collaboration. According to a research of ACCA (ACCA, 2018), there have been ten technology trends facing to accounting: (1) Mobility; (2) Cloud; (3) Social Collaboration; (4) Digital Service Delivery; (5) Big Data; (6) Payment Systems; (7) Cyber Security; (8) Robotics; (9) Augmented and Virtual Reality; (10) Artificial Intelligence.

2.2. Theoretical Framework of System of National Accounting

The definition of system of national accounting was first presented in accordance with the capacity of the economy to generate revenue (Petty, 1889). The Government have always been concerned with their capacity to raise revenue. However, it was only in the 20th century that the demands of economic management reached the point where a more comprehensive measurement of the volume and value of economic activity was urgently required. The activist state required statistical information about economic activity, and a framework for analysing the impact of policy on economic welfare. National accounts were vital for this task. For various reasons, a single number, Gross Domestic Product, or GDP came to encapsulate the complex picture of the economy presented in the accounts. The national accounts provides the most comprehensive overview available of developments in that national economies is a well – established view among statistical bureaus and users.

The key problem for national accounting in the 20th century was that the input output relationships between industries. The solution in national accounting terms was the concept of “value added”. This concept was crucial in measuring economic activity for the purposes of macroeconomic management and in assessing the rate of economic growth.

According to Hanson (2006) the system of national accounting includes some main features: household vs. market, public goods and information, GDP and NNI (Net National Income), endogenous growth. (Appendix 1)

Household vs. market

Households earned and spent money income in the market economy, through work and returns on financial assets. Each household also formed its own economy, within which family members produced, and consumed, services such as cooking, cleaning and childcare. This division between market and household corresponded closely to a gender division between men’s and women’s work. Particularly in the period immediately after World War II this division commanded strong normative support and corresponded to reality for a large proportion of households, particularly those in the growing middle class. The norm was enforced by unequal pay and policies that required women to resign from positions in the public service on marriage.

Public goods and information

One of the most difficult problems in system of national accounting is that of accounting for public goods. These characteristics mean that the value of public goods in consumption cannot be measured by market observations. This problem is conceptually distinct from that of valuing publicly provided services, such as health and education, which are primarily private goods but are not traded at market prices. However, the solution has been the same in both cases: to value public goods and publicly provided services at their cost of production.

GDP and NNI

The separation between household and market work made sense for some of the purposes for which national accounts were used. Most importantly, the primary requirement for macroeconomic management is a measure of economic activity in the market sector. The tools of macroeconomic management (fiscal and monetary policy) work almost entirely on the demand for market goods and the supply of labor to the market.

Endogenous growth

Analysis of economic growth has traditionally focused on the accumulation of the physical factors of production-land, labour, and capital (machinery and buildings). System of national accounting holds out the promise of a quantitative understanding of growth, in which the relative contributions of the major factors of production could be assessed.

Figure 1: Towards a basic system of national accounting

crowdsourcing, instant messaging, internet telephony, and sharing pictures and music quickly gained critical mass as popular personal tools for communication and collaboration. As the use of social tools becomes the 'new normal' all accountants will be affected by changing approaches to, and expectations of, communication and collaboration. It would help to remove barriers to communication and open up new routes to investments. However, it appears to have more risks to sensitive data.

Digital Service Delivery

Digital services are transforming business, practice, central and local government, charities and other third sector organisations, by exploiting new IT architectures and technologies to deliver web-based business processes, e-commerce, mobile commerce, and cloud-based software and services using the internet and intranets. E – Government is not a new term as the use of electronic communications devices, computers and the Internet to provide public services to citizens and other persons in a country or region.

The digital services open to potential transform efficiency and customer satisfaction. Moreover, business models can be automated and streamlined and more global standardized. The Government also need to consider challenges of lacking of interoperability of legacy systems.

Big Data

The ability to collate, manage and analyse it effectively can lead to better decisions and generate a competitive advantage for business, and the technology to do this is becoming more accessible and affordable.

The profession's trademark analysis and problem-solving skills can help the Government to manage the complexity of the vast amounts of data being generated.

Payment Systems

E-commerce features are increasingly being built into software and e-banking is following: even entry-level accounting systems now automate links with bank accounts. Consumers and businesses are exploiting pre-paid smart cards and mobile phones as 'electronic wallets' using services. The payment systems in the digital age increase level of transparency in transactions. The Government also has challenges as new payment providers operate outside existing regulatory frameworks.

Cyber Security

The world has become reliant on computers and digital personal and business information. This has exposed individuals, organisations and entire countries to significant threats, and these must be managed as new forms of cyber-terrorism, cyber-crime and cyber-fraud that are emerging. With products and services increasingly provided, sourced and accessed online, the security of sensitive personal and corporate data and systems is vital if cyber-attacks are not to damage operations and reputations. Theft of digital information has

become the most commonly reported fraud, surpassing physical theft, and recent research indicates that the relative insecurity of small and medium-sized enterprises is making them a growing focus for cyber-attacks.

Robotics

A robot is a system that contains sensors, control systems, manipulators, power supplies and software, which all work together to perform a task or series of tasks. As robotics evolves and converges with other emerging technologies a new world of ethical, financial, practical, and operational possibilities will emerge. There would have been some opportunities that the capacity to improve our personal and professional lives. However, the Government has to consider this factor for national accounting system as it is easiest to automate.

Augmented and Virtual Reality

Augmented reality (AR) can enhance our perceptions of the real environment by overlaying images of it with sensory input such as sound, graphical overlays, video and various other types of data. Accountants are using the virtual world to recruit trainees, attract clients and develop new lines of business, and holding meetings in online. The profession will need to prepare for changes in areas ranging from education, through customer service to data processing and analysis. The Government will need to develop new approaches to measuring and analysing costs and return on investment.

Artificial Intelligence

Artificial intelligence (AI) describes a machine or software that can demonstrate behaviour indistinguishable from that of the human brain. Accountants increasingly rely on the expert knowledge built into software in a range of scenarios. Auditors use smart software to automate parts of the auditing process, and there are other specialist applications to help with compliance in areas ranging from financial reporting to international tax. The Government use AI to improve compliance and decision making.

3. Suggestions on a new agenda for system of national accounts

3.1. Estimating stocks and flows of information

The rise of the digital economy suggests a new agenda for national accounts. Among the most important requirements are procedures for estimating (and valuing) stocks and flows of information and a new approach to growth accounting. These changes also imply a breakdown of the traditional division between household and market sectors of the economy.

Estimating the volume of information creation and storage is a technically difficult, but conceptually fairly simple task. Estimating the economic value of this information is much more challenging. Standard economic analysis suggests that, as the cost of creating and storing information falls, so will the marginal value of the information. A video of a cat playing amusing tricks, reproduced and stored thousands of times after going viral, might account for as much information storage as an entire library, but is clearly of much lower value.

On the other hand, it seems unlikely that the declining marginal value of information fully offsets the massive growth in volumes. Second, we can look at expenditure on computers, and on communication and storage devices. Expenditure on computers, telecommunications and storage has risen over time, but remains small in terms of GDP.

3.2. Growth accounting in the digital economy

No comprehensive assessment of the impact of information services on economic growth appears to have been attempted. However, given the rapid increase in reliance of such services for all kinds of activity, the impact is obviously substantial. This increase must consist almost primarily of increases in total factor productivity, though it may also have been associated with some capital deepening. Given the correlation between broadband access and Internet and computer use more generally, it seems reasonable to take this as an estimate of the productivity impact of ICT.

3.3. Estimate hours of household work

As has already been noted, it is important to improve our understanding of household time spent participating in the Internet economy, through browsing websites, reading and posting on social media, reading and commenting on blogs, wikis and so on. These forms of activity have grown rapidly both in terms of the proportion of the population engaged and in terms of hours spent per day.

This suggests the need for a more general reassessment of household labour. The rise of a service economy means that the 20th century distinction between household and market sectors is no longer tenable. The traditional gender distinctions associated with a largely industrial economy have broken down. Employment rates for men and women are now only modestly different, reflecting both the impact of feminism and the fact that there are now very few jobs where physical strength is a crucial requirement. All of this has been reinforced by the rise of the Internet.

4. Conclusion

The system of national accounting was functioned both as a tool of short-term macro-economic management and for assessments of medium and long-term economic performance during the 20th century. Because of the revolution of information technology in the 21st century the dual purpose approach can no longer be sustained. A new system and agenda of accounting and maintenance should be developed. And importantly, the Government must keep acting as an important role to identify strengths and weaknesses to be faced.

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PART III: AUDITING



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**Student Satisfaction with Quality of Accounting and Auditing Education
in Vietnam**

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Abstract

This research is conducted to examine and evaluate determinants influencing the level of student satisfaction in the quality of auditing and accounting training at Vietnamese universities. Data were collected from 213 students of accounting and auditing field in three universities of National Economics University, University of Commerce and Academy of Finance. Exploratory factor analysis (EFA) and linear regression models were used to determine the determinants influencing student satisfaction in the quality of accounting and auditing. The results show that the strongest impact on student satisfaction was the ability to serve; then training program; infrastructure component, and the last of teaching team. Based on the findings, some recommendations are proposed for improving the satisfaction levels of students of accounting and auditing.

Keywords: *Quality of service; Quality of training; Satisfaction*

1. Introduction

Technology Revolution 4.0 is the trend of automation and data exchange in manufacturing technology. The essence of Technology Revolution 4.0 is based on digital technology and integrates all smart technologies to optimize processes and production methods; Highlighting the technologies that are and will have the greatest impact are 3D printing, biotechnology, new materials technology, automation technology, robotics including cyberspace, internet and cloud computing. Technology Revolution 4.0 has been changing our habitat and habits. Education needs to change in order to meet the needs of society. It can be said that the quality of training services is a condition of existence and

development of any unit in the field of education. Quality of service must be assessed by the customers themselves, not only by technical standards, quantities or regulations. When education is a kind of service, it means that educational institutions become service providers. Customers are mainly students because they are the direct object of the training process and also the main "products" so the feedback of the students about the satisfaction with the teacher, facilities, as well as the process and content of teaching have a certain meaning, to help faculty and schools make reasonable adjustments to better meet the needs of students and social needs. The topic of “*Student Satisfaction with the Quality of Accounting and Auditing Education in Vietnam*” is conducted to help the universities in Vietnam to improve the quality of training for students.

This research is structured as follows. Section 2 reviews the suitable literature of service quality and customer satisfaction. Section 3 describes the data sample collection and methodology employed in the conduct of the research. Section 4 sets out key results, while Section 5 shows some discussions and recommendations.

2. Literature Review

Service quality and customer satisfaction

According to ISO 8402, service quality is the set of characteristics of an object, giving that object the ability to satisfy the stated or potential requirements. According to Feigenbaum (1991), quality is understood as customer's decision based on actual experience with the product or service, measured on the basis of customer requirements, which may or may not be to be conscious or simply sensible, totally subjective or professional, and always represent a dynamic target in a competitive market. Edvardsson et al. (1994) argue that service quality is a service that satisfies customer expectations and satisfies their needs. According to Parasuraman et al. (1985: 1988, cited by Nguyen et al., 2003), service quality is the distance between customer expectations and their perceptions when used through service or substance. Ensuring and improving service quality is the reduction and elimination of these gaps.

Satisfaction is the state of a person's sense of power derived from comparing the perception of a product to his or her expectations (Kotler and Keller, 2006). Oliver (1999) and Zineldin (2000) argues that customer satisfaction is the response of the customer to the service provider on the basis of comparing the differences between what they receive versus what they expect before.

Through the above definitions, it can be seen that the quality of service is assessed through customer satisfaction or the quality of service is the satisfaction of customer needs. If a service does not meet the customer's needs, the service is considered to be of poor quality.

The quality of education and the level of student satisfaction

When education and training are a type of service, the main educational institutions are the service providers. Students are both the product of the training service and the main customer of this service. Therefore, the feedback of students on the satisfaction on quality

of training is very essential and helps school and faculty to adjust for meeting the needs of students and society as well.

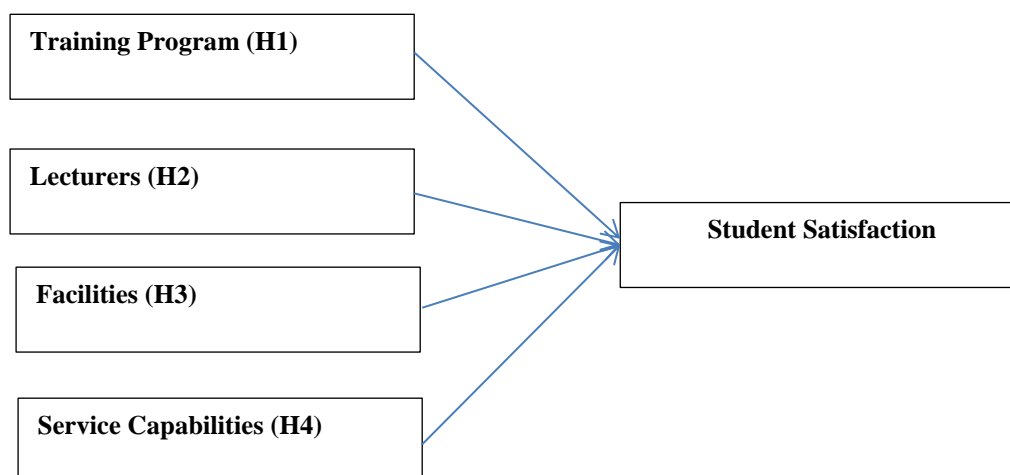
In assessing student satisfaction, prior studies generally assess the determinants that affect this satisfaction. Student satisfaction is the most dependent on the curriculum, and the second is the lecturers, the level of response from the school and finally the factor of learning equipment (Nguyen et al., 2003). According to Tran (2006), the satisfaction of the students depends most on the enthusiasm of the staff and lecturers, the second is the ability to perform the commitment and the third is the facility, the lecturers and finally the university's attention to the students. As a result of Bui and Dao (2013), determinants influencing students' satisfaction on the quality of training at Hanoi University of Economics - Vietnam National University, respectively is training program, facilities, service capabilities and finally the lecturers. According to Thai and Nguyen (2013), student satisfaction depends on two main determinants of facilities and the lecturers.

3. Research Methodology

3.1. Model and Hypotheses

Based on the results of the previous studies, the proposal model for this study consists of the following four components of Training Program, Facilities, Lecturers and Service Capabilities.

Figure 1. The Research Model



Research Hypotheses

Based on the review of literature and the results of interviews of students and lecturers of universities in the sample, some hypotheses are proposed for testing as below:

H₁: There is a positive relationship between Training Program and Student Satisfaction

H₂: There is a positive relationship between Lecturers and Student Satisfaction

H₃: There is a positive relationship between Facilities and Student Satisfaction

H₄: There is a positive relationship between Service Capabilities and Student Satisfaction

3.2. Variables and Scales

Variables are aggregated according to determinants and coded in the following table:

Table 1: Observed Variables

No.	Coding	Indicators
I	Training Program	
1	pro1	The training program has clear output criteria
2	pro2	The training program is fully informed to students
3	pro3	The training program meets the requirements for future career development of students
4	pro4	The training programs are updated regularly
5	pro5	Subjects are arranged and fully informed to students
II	Lecturers	
6	lec1	Lecturers have high level, proficient in teaching
7	lec2	Lecturers have good communication methods, easy to understand
8	lec3	Lecturers often use information technology to support teaching
9	lec4	Lecturers assure class time and instructional plans
10	lec5	Lecturers are close and friendly with students
11	lec6	Lecturers are willing to share their knowledge and experiences with students
12	lec7	Lecturers evaluate the results accurately and fairly
13	lec8	Students are fully informed about their teaching plans and performance indicators
III	Facilities	
14	fac1	The syllabus / materials of each subject are fully informed, diversified
15	fac2	Classrooms meet the needs of students
16	fac3	The library has a rich source of references
17	fac4	The library ensures space, seats meet the needs of study, research of students
18	fac5	Classrooms have a reasonable number of students
19	fac6	Online direct applications - internet access, website for effective teaching and learning
IV	Service Capabilities	
20	ats1	Managers (administrators, faculty members) satisfactorily meet the requirements of students
21	ats2	Administrative staff have good service attitude and respect for students
22	ats3	Information on the website is diverse, abundant and updated regularly
23	ats4	Academic and professional counseling activities meet the needs of students' learning, selection and learning
24	ats5	The support and enthusiasm of faculty, staff, and inspectors when needed
V	Student satisfaction	

No.	Coding	Indicators
25	satis1	The training program meets your personal expectations
26	satis2	The knowledge gained from the program helps students to be confident in their ability to find work after graduation
27	satis3	Tuition fees are commensurate with the quality of the training received
28	satis4	You are satisfied with the training program as well as the learning environment of the Faculty of Accounting (Auditing) of your institution.

Source: Synthesized from previous studies

3.3. Data Collection

According to Hair et al. (2006), the sample size must be at least 100. Hoang and Chu (2008) set the sample size by 5 times of the number of observation variables. Accordingly, with 28 observation variables, the minimum sample size is $28 \times 5 = 140$. For the sake of reliability, the author selected the sample size for the study of 200 samples. To ensure the receipts are valid, 220 questionnaires were issued. We use a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The method of data collection was adopted through direct presentation to the final year students of the Faculty of Accounting and Auditing from National Economics University, University of Commerce and Academy of Finance.

4. Research Results

4.1. Description Statistics

Results from 220 questionnaires sent to students, collected in full 220 of which 213 answered correctly, 7 invalid answers are that most of the points are the same point. . In terms of gender, the difference in males and females is quite high with 13.6% male and 86.4% females, which is quite true for females. The ratio of female students studying Accounting Auditing always exceeds the ratio of male students. In terms of academic performance, the high percentage of excellent students was 67.1%, the good ones accounted for 20.2% and the average was 12.7%.

Table 2: Results of Research Sample Classification

	Criteria	Frequency	Ratio
Sex	Male	29	13.6%
	Female	184	86.4%
Academic strength	Good standing	43	20.2%
	Pretty	143	67.1%
	Average	27	12.7%

Source: Survey Results

4.2. Scale Reliability

The reliability of the determinants in the study model shows that all determinants included in the model are reliable, the Cronbach's Alpha coefficient is greater than 0.7, the coefficient of variation is greater 0.3. This shows that the research concepts constructed from the observational variables are of internal consistency and are well-measured concepts.

Table 3: Cronbach's Alpha Coefficient

Determinants	Cronbach's Alpha	n
Training Program	0.752	5
Lecturers	0.819	8
Facilities	0.784	6
Service Capabilities	0.827	5
Student Satisfaction	0.801	4

Source: Analysis results from SPSS 20.0

4.3. Exploratory Factor Analysis

The results of the factor analysis have a KMO value of 0.869 ($0.5 < \text{KMO} = 0.869 < 1$) and Barlett's test shows the coefficient sig. = 0.000 < 0.05 indicates that variables in the whole are interrelated. The factor load factor is greater than 0.5, the Eigenvalues value is greater than 1, the variance explained by 62.238% proves that the research data analyzing factor analysis is appropriate. Observing variables form the four major determinants, such as the table. Thus, the initial research model through the Cronbach Alpha coefficient analysis and the EFA exploratory factor analysis, the four components proposed are statistically significant and statistically significant. The ingredients will be used in the next test.

Table 4: Rotated Component Matrix^a

Items	Components			
	Service Capabilities	Training Program	Lecturers	Facilities
ats5	0.784			
ats4	0.729			
ats3	0.722			
ats1	0.563			
ats2	0.522			
pro3		0.754		
pro4		0.717		
pro1		0.647		
pro2		0.567		
pro5		0.502		

Items	Components			
	Service Capabilities	Training Program	Lecturers	Facilities
lec5			0.753	
lec6			0.747	
lec8			0.597	
lec7			0.584	
lec4			0.551	
lec2			0.547	
lec1			0.526	
lec3			0.518	
fac3				0.748
fac2				0.741
fac1				0.686
fac4				0.649
fac5				0.523
fac6				0.507

Source: Analysis results from SPSS 20.0

4.4. Linear Regression Analysis

Based on the model after EFA, linear regression results are presented as follows:

$$\text{Satis} = \beta_0 + \beta_1 * \text{pro} + \beta_2 * \text{lec} + \beta_3 * \text{fac} + \beta_4 * \text{ats} + \varepsilon$$

- ✓ Dependent Variable: Student satisfaction (satis).
- ✓ Predictors: Training Program (pro),

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.784 ^a	.614	.604	.41278	1.452

a. Predictors: (Constant), ats, fac, pro, lec

b. Dependent Variable: satis

Table 6: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	43.372	4	10.843	63.638	.000 ^b
1 Residual	27.262	160	.170		
Total	70.634	164			

a. Dependent Variable: satis

b. Predictors: (Constant), ats, fac, pro, lec

Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.481	.270		-1.783	.077		
1 pro	.313	.069	.277	4.559	.000	.651	1.535
lec	.193	.090	.143	2.157	.033	.545	1.833
fac	.187	.055	.207	3.395	.001	.647	1.545
ats	.335	.064	.349	5.270	.000	.551	1.816

a. Dependent Variable: satis

Source: Analysis results from SPSS 20.0

As a result of the regression analysis, the regression coefficient is consistent with the set of data. The adjusted R^2 value = 0.604 (60.4%) means the independent variables explain 60.4% for the dependent variable. Test Durbin Watson = 1.452 in the range $1 < D < 3$ so there is no correlation of the residues. Validation of the suitability of multivariable regression models, Sig values. < 0.05 , it can be concluded that the independent variables are linearly correlated with the dependent variable. In addition, the VIF coefficient is less than 10, indicating no multicollinearity.

From the statistical data in Table 7, the multivariate linear regression of determinants affecting the quality of audit of independent auditing firms in Vietnam is as follows:

$$\text{Satis} = -0.481 + 0.313 \times \text{pro} + 0.193 \times \text{lec} + 0.187 \times \text{fac} + 0.335 \times \text{ats}$$

The beta coefficient is positive, independent variables have positive impacts on the dependent variable, which is the greater the confidence of the faculty, and staff in the accounting department. The higher the level of student satisfaction, the H_1 , H_2 , H_3 , H_4 hypotheses of the model are accepted.

5. Discussions and Recommendations

As a result of regression, the strongest impact on student satisfaction was the ability to serve (Beta = 0.349); The second component is the training program (Beta = 0.277); the third is the Infrastructure component (Beta = 0.207) and the final component is the Teaching Team (Beta = 0.143). Based on the results of the study, we propose a number of recommendations for groups of solutions to improve the level of satisfaction of students of accounting and auditing for training quality as follows:

In terms of Service Capabilities: Issues related to serviceability include: The administrative or academic staff should strive to support and help the students more enthusiastic when meeting with them. It should show a warm attitude, respect for students because the students are the customers are using the training services of the University. Besides, information on the website, facebook of the Faculty should be updated regularly. At the same time, mentors studying administrative classes need to better fulfill their educational and career guidance roles.

In terms of Training Program: Faculty and departments need to regularly update the training program of the Faculty to meet the needs of society, improve the job search opportunities for children when leaving school. Through the Department's links with outside businesses, organizing programs for students of the Faculty to exchange, meet, listen to the advice of the accounting staff, auditing them Listening to the experience of studying, studying as well as the experience of looking for a job of the siblings before, and through this connection, the Faculty also grasp the needs of employers of enterprises from then. Design syllabi of the subject so that the content of the subjects to meet social needs as well as meet the needs of study and research of students.

In terms of Facilities: The school needs to invest in upgrading, expanding facilities, equipment: microphones, projectors to ensure the application of information technology in teaching and learning. Classrooms should be spacious, cool, quiet to ensure the best learning space for students. Materials in the library must be sufficient in number and diversity in the field to meet the needs of reference and research for study and research of students and library must ensure about the reading room has enough seats to accommodate a large number of students.

In term of Lecturers: Among the four determinants, lecturers are the least influencing determinant to the level of student satisfaction in the quality of specialized training in auditing accounting and at the same time through surveys and evaluations. The students of the faculty of accounting audit at the schools surveyed at present are quite high: they find that "lecturers are highly qualified and proficient in the subject they teach" (mean = 3.9212, "lecturers regularly use information technology to support teaching" (mean = 3.7152), "lecturer guaranteeing teaching time and teaching plan" (mean = 3.8121), "lecturer ready to share knowledge and experience with students "(mean = 3.9758)," students are fully informed about teaching plans and indicators Assessment of learning outcomes "(mean = 4.0121). However, schools and faculties still need to improve the quality of their faculty by providing faculty with the opportunity to study and study at home and abroad, encourage and support Lecturers attend specialized seminars. On the part of the lecturer itself, it is necessary to actively update professional knowledge and innovate teaching methods in order to increase student autonomy in study and research.

In short, based on the findings of this empirical study, the level of student satisfaction in the quality of auditing training at the National Economics University, University of Commerce, University and Academy of Finance. It consists of four elements: Training Program, Lecturers, Facilities, and Service Capabilities. In particular, the Service Capabilities and Training Program are more influential than the Facilities and Lecturers. Based on the results of the study, the authors proposed appropriate solutions to meet the study and research needs of students, improve their level of satisfaction with the quality of training accounting. In addition to results above, the research still has some limitations as the new sample includes the final year student of the faculty of accounting and auditing, not including other subjects such as students of other economic fields. This limitation will be overcome by extensive research in the future.

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The Study of Effectiveness of Audit Procedures in Detecting Frauds Related to Inventory in Vietnam

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Abstract

Frauds related to financial statements in general and inventory in particular tend to increase in the world with sophisticated hiding techniques. Inventory auditing is a difficult part in an audit engagement of auditors to minimize auditing risk to an acceptable level. Hence, the increase of probability to detect frauds through inventory auditing procedures is essential in order to enhance auditing quality and limit qualified opinions from auditors, which raises the satisfaction of financial statement users. Basing on the research methods of several researchers with adjustments, we investigate the effectiveness of inventory auditing procedures in detecting frauds through surveying 97 auditors working in auditing firms in Vietnam. By applying descriptive statistics and t test methodology (SPSS 20.0 software), we assess and classify auditing procedures based on their effectiveness in detecting frauds. Besides, we examine the difference in evaluating the effectiveness of auditing procedures between male and female auditors; between auditors working in Big-4 auditing firms and auditors working in non-Big-4 auditing firms; between auditors with different numbers of working years. Based on study findings, we suggest solutions related to designing auditing procedures for inventory auditing.

Keywords: *Auditors, Auditing procedures, Effectiveness, Frauds, Inventory*

1. Introduction

Among services provided by external auditing firms, financial statement auditing is an important service. The objective of the service is to give assurance by auditors about the truth, fairness and legality of information presented on financial statements. That is a crucial demand of various users such as investors, shareholders, creditors and government authorities when using information on financial statements to make decisions. Inventory audit is one of arduous and time-consuming tasks when auditing financial statements (Nguyen Thi Lan Anh, 2017).

Inventory auditing becomes more complicated for manufacturing companies having various and complex inventories, and big proportion of inventory in total assets. Besides, frauds in general and frauds about inventory in particular tend to increase in the worlds with sophisticated hiding techniques. According to Association of Certified Fraud Examiners (2016), external auditing can only detect around 3.3%, 3% and 3.8% of total frauds committed by companies in U.S. in 2012, 2014 and 2016 respectively. In Vietnam, there are some auditing cases related to inventory frauds. For example, during the auditing engagement of Truong Thanh Furniture Corporation, auditors of DKF auditing firms did not detect the shortage of around 1000 billion VND of inventory (Minh Chau, 2016); or when auditing 2008 and 2009 financial statements of Vien Dong Pharma JSC, auditors of A&C and E&Y auditing firms did not detect artificial revenue, inventory frauds in complex trading transactions between related parties of the company (Khanh Linh, 2011). Those failures to detecting frauds affect adversely financial statement users. Therefore, investigating the effectiveness of inventory auditing procedures in detecting frauds is essential in order to support auditing firms in designing auditing procedures suitable with each stage of an auditing engagement.

Besides, Moyes (1996) is the first study listing 56 inventory auditing procedures and examining the effectiveness of those procedures in detecting frauds in U.S. However, its findings are outdated as over 22 years, there are considerable changes in auditing field and inventory manufacturing. In Vietnam, Nguyen Thi Lan Anh (2017) also examines the effectiveness of inventory auditing procedures in 2016. Nevertheless, the number of professional auditors in Vietnam increase by 13.5% over two years (The Ministry of Finance 2018) and the study does not collect adequate observations as expected with error probability of 10%. The study was continued by Nguyen Thi Lan Anh (2017) and overcomes its limitations.

The study evaluates and classifies the effectiveness of inventory auditing procedures in detecting frauds. We also examine the difference in evaluating the effectiveness of auditing procedures between male and female auditors; between auditors working in Big-4 auditing firms and auditors working in non-Big-4 auditing firms; between auditors with different numbers of working years. Based on study findings, we suggest solutions related to designing auditing procedures for inventory auditing. The study surveys experts and auditors about the effectiveness of inventory auditing procedures, then applies descriptive statistics and t test methodology to analyze data.

The paper contains the following parts: 1. Introduction; 2. Literature Review and Methods; 3. Results and Discussion; 4. Conclusion and Policy implications.

2. Literature Review and Methods

2.1 Literature Review

In terms of the effectiveness of inventory auditing procedure in detecting frauds

Standard auditing procedures to detect frauds related to inventory are firstly studied in 1996 in U.S. by Moyes (1996). Moyes sent surveys to 459 auditors, including external auditors, state auditors and internal auditors, who were selected randomly, receiving 86

answer sheets (equivalent with 19%). Those auditors were asked to mark the effectiveness of inventory audit procedures in detecting frauds with points ranging from 1 to 5 (1 – ineffective; 5 – highly effective). The survey results showed that the auditors gave an average point of 3.2308 to 56 inventory auditing procedures, in which 14 procedures were evaluated effective at high level (mainly procedures to collect directly audit evidences like direct review, recalculation, auditors' confirmation letter); 27 procedures were evaluated effective at moderate level in detecting frauds (mainly procedures about the application of accounting standards, testing the existence and operation of internal audit) and 15 procedures were evaluated effective at low level (those procedures are not related to directly collecting of auditing evidences).

Studies about the effectiveness of inventory auditing procedures in detecting frauds are expanded to other countries, including developed and developing countries. The study of Owusu-Anasah et al. (2002) about the effectiveness of inventory auditing procedures in detecting frauds in New Zealand showed similar results with the one of Moyes (1996) in U.S. Owusu-Anasah et al. (2002) sent surveys to 400 auditors with the answering rate of 29%. The average point of 56 inventory auditing procedures was 3.0365, in which 14 procedures were evaluated effective at high level, 27 procedures were evaluated effective at moderate level, 15 procedures were evaluated effective at low level in detecting frauds. However, the result in every procedure is different from the one of Moyes (1996). With the same number of 14 procedures effective at high level, only 12 procedures are the same between 2 studies. Namely, the procedure of *reviewing inventory transactions between related parties* which is evaluated effective at high level in U.S. by Moyes (1996) only ranks 13th in the study. The procedure of *compilation test to ensure inventory on books are the same with inventory in warehouse* only ranks 14th in the study of Moyes (1996) but rank 3rd in the study. In the study of Owusu-Anasah et al. (2002), the most effective procedure is procedures related to *reviewing inventory counting procedures*.

Inventory auditing procedures to detect inventory frauds are also studied in developing countries. Alleyne et al. (2010) is the first study conducted in Barbados (a small developing country in Caribe region). The study was conducted in similar method with the one of Moyes (1996) and Owusu-Anasah et al. (2002). The average point for 56 inventory auditing procedures was 3.773 which is considerably higher than the one of those two previous studies mentioned above in U.S. and New Zealand. The study indicates that the effectiveness of those inventory auditing procedures in Barbados is different from the effectiveness of those auditing procedures in U.S. and New Zealand. 21 procedures were evaluated effective at high level; 9 procedures were evaluated effective at moderate level; 26 procedures were evaluated effective at low level. Among 21 procedures highly effective in the study, only 9 procedures are evaluated effective at high level in the study of Owusu-Anasah et al. (2002). The procedure of *recounting an inventory sample to ensure the accuracy of inventory amount* which were evaluated the most effective in the study only rank 10th and 11th in the study of Owusu-Anasah et al. (2002) and Moyes (1996) respectively.

Nguyen Thi Lan Anh (2017) is the second study conducted in Vietnam (a developing country) in 2016. Based on the data from 70 auditors, the study shows that the average point of 56 inventory audit procedure was 3.539 which is higher than 3.036 of Owusu-Ansah et al. (2002), but lower than 3.773 of Alley et al. (2010). By employing t test – 1 sample method, the study indicates that among 56 standard inventory auditing procedures, 19 procedures were evaluated effective at high level; 10 procedures were evaluated effective at moderate level; the remaining procedures were evaluated effective at low level.

Tazilah et al. (2017) is the third study conducted in Malaysia in 2017. The study employed the method of Owusu-Ansah et al. (2002) and Alleyne et al. (2010). T test method was also employed to analyse data. However, the study does not show specific results about the effectiveness of inventory auditing procedures in detecting frauds.

In terms of the effect of auditors' gender on evaluating the effectiveness of inventory auditing procedures

Alleyne et al. (2010) demonstrates that male auditors give higher points about the effectiveness of inventory auditing procedures than female auditors. However, in Vietnam, Nguyen Thi Lan Anh (2017) shows that there is no significant difference between male and female auditors in evaluating the effectiveness of 56 inventory auditing procedures.

In terms of the effect of auditors' working experience on evaluating the effectiveness of inventory auditing procedures

Studies shows inconclusive results about the relationship between auditors' experience and ability to detect frauds in auditing inventory. Moyes (1996) shows that auditors with longer working experience have higher ability to detect frauds than other auditors with shorter working experience. Alleyne et al. (2010) and Nguyen Thi Lan Anh (2017) shows that auditors' working experience is not a significant factor to detect frauds when auditing inventory.

Although, there are a big number of studies about the effectiveness of 56 standard inventory auditing procedures, the idea to design those auditing procedures is established in 1996, 22 years ago. 22 years is a big period for the development history of international audit and Vietnamese audit, in which inventory changes significantly in terms of characteristics, nature, potential risks. In addition, compared with the study in 2016 of Nguyen Thi Lan Anh (2017), the number of professional auditors in Vietnam increase from 1,726 in 2016 to 1,959 in 2018 (The Ministry of Finance, 2018), equivalent with 13.5%. Besides, Nguyen Thi Lan Anh (2017) does not collect adequate observations as expected with error probability of 10%. Therefore, in the study, we continue the study of Nguyen Thi Lan Anh (2017) about the effectiveness of inventory auditing procedures in detecting frauds, minimize those limitations above.

2.2. Research questions

✓ Question 1: How effective are inventory auditing procedures in detecting inventory frauds?

✓ Question 2: Is there difference in evaluating the effectiveness of inventory auditing procedures in detecting frauds between male and female auditors; experienced auditors (over 5 years) and inexperienced auditors (equal or below 5 years); auditors working in Big-4 companies and auditors working in non-Big-4 companies?

✓ Question 3: Which inventory auditing procedures should be used to detect inventory frauds?

2.3. Research methodology

2.3.1. Data collection

The data collection is conducted through two following stages:

Expert survey

Because of being studied 22 years ago by Moyes (1996), 56 standard inventory auditing procedures can be outdated. The study conducts expert survey in order to update those procedures with current economic development and add more procedures. Hence, the expert survey supports to create an updated survey which will be used in the next stage (auditor survey).

From February 2018 to April 2018, we interview deeply experts with specialized knowledge and rich experience. The process of interviewing is conducted until no new information is collected. Based on the rule, 8 Vietnamese experts were interviewed, including: 2 auditors with risk experience in auditing are lecturing in well-known economic universities in Vietnam; 2 financial auditors have rich experience in applying information technology in auditing; 4 financial statement experts are director or deputy director or auditors with international auditing certificates and rich experience. The results show that several adjustments are necessary for 56 standard inventory auditing procedures and 3 inventory auditing procedures need to be added to evaluate in order to adapt to current risks and characteristics of inventory. Besides, those experts advise to rearrange inventory auditing procedures according to auditing process in order to make it easy to follow and apply in practice.

First, for 56 auditing procedures, some procedures need to be adjusted as follow: 7 out of 8 experts believe that auditors cannot implement the whole procedure *Trace from stock tags to the stock sheets and make sure stock on tags are included* for auditing objects, so the procedure should be conducted on a sample calculated by auditors; according to rules in current accounting system (The Ministry of Finance, 2014), the method LIFO is no longer used in calculating exporting cost of inventory, so those experts suggest to drop the method in the procedure *Compare unit costs of stock determined either with FIFO, LIFO or AVCO valuation methods with previous year*; according to 8 out of 8 experts, as internal control at presence already access new directions to adapt with current science and reality, internal control is already adjusted. Hence, the procedure *Draw flow chart of internal control system and compare with written policies* need to be changed to *Draw flow chart of internal control and compare with written policies*.

Second, 3 auditing procedures need to be added to evaluate: 100% experts believe that modern information technology is applied increasingly and the test of control procedures

are applied increasingly in order to assess correctly the efficiency of internal control and raise auditing efficiency, so the procedure *assessing the effect of applying information technology in managing inventory on inventory auditing* needs to be added to evaluate. Besides, to strengthen the effectiveness of inventory auditing procedures in detecting frauds, 7 out of 8 experts agree to add the following 2 procedures to evaluate: *Reviewing general documents about the result of inventory counting of clients, interviewing people conducting inventory counting and their methods to process result after counting; sending confirmation letters to ask warehouse holder to confirm the amount of inventory put in leased warehouse (if material).*

Auditor survey

The survey is conducted to study the effectiveness of inventory auditing procedures in detecting inventory frauds. The questionnaire is based on the one of Moyes (1996) and Owusu et al. (2002) with adjustments, includes: Part 1: Introducing purposes, meaning of study, ways to answer and our thankful words to respondents; Part 2: Questions about information of respondents, including: Name, age, position, company (we divide companies into Big-4 and Non-Big-4 companies, similar to the way Owusu et al. (2002) conduct in combination of expert survey), gender (male or female), the number of experience years (based on the results from deep interview, we divide auditors' experience into 2 levels: ≤ 5 years và > 5 years); Part 3: Inventory auditing procedures to be evaluated, we employ 59 procedures (after adjusting for results from expert survey above), respondents are asked to evaluate the effectiveness of those procedures based on Likert scale – 5 points (1. Ineffective; 2. Effective at low level; 3. Effective at moderate level; 4. Effective; 5. Effective at high level). We also classify those procedures into groups according experts' suggestions, including: Tests of control have 12 procedures (numbering from 1 to 12); Substantive tests have: 11 analytical procedures (numbering from 13 to 23), 14 physical tests of inventory (numbering from 24 to 37) and 22 tests of details (numbering from 38 to 59). The expected sample size is 96 which is determined based on the formula of Slovin (Tran Thi Kim Thu, 2012, page 34) with the population size of 1,959 auditors (the number of auditors in August 2018) and error probability of 10% (study result can explain 90% of the variation in the population).

2.3.2. Data processing

After using results from expert survey to adjust the questionnaire, we send some trial surveys to respondents who respond with fairly satisfaction with them. Hence, from the beginning of May 2018 to the end of June 2018, we send surveys to 350 professional auditors working in auditing firms in Vietnam (who are in the list of auditors meeting practising requirements in 2018) and received answer sheets in June and July 2018. After removing invalid answer sheets (such as unanswered or incomplete answered sheets), we number valid answer sheets to avoid mistakes in data processing and recording answers from auditors, which will be used for analysis. 350 surveys are sent in two times and 114 surveys are received back within 3 months. Among those 114 surveys, 17 are invalid. Hence, the actual sample size is 97 which is higher than the expected sample size (96). Table 1 below shows the descriptive statistics of data.

Table 1: Descriptive statistics

	Gender		Auditing working experience		Auditing firm	
	Male	Female	≤ 5 years	>5 years	Big-4	Non-Big-4
Number	44	53	59	38	49	48
Rate (%)	45,4%	54,6%	60,8%	39,2%	50,5%	49,5%

Source: We create the table from descriptive statistics of data by SPSS 20 software

Being similar to Moyes (1996), Owusu-Anasah et al. (2002) and Alleyne et al. (2010), t test method with significant level of 5% is used in the study to examine the difference in the effectiveness between auditing procedures and the difference between groups in evaluating effectiveness of those auditing procedures in detecting frauds. Although the study sample may not follow standard distribution, the sample size over 30 meets the requirement of t test (Weiss 2012, pp. 375; Anderson, Sweney and William 2011, pp. 362; Berenson, Levine and Krehbiel 2012, pp. 366). T test – one sample is employed to classify all auditing procedures into 3 group: (1) effective at High level, (2) effective at moderate level, (3) effective at low level. Moreover, t test-two samples is employed to compare the effectiveness of auditing procedures between respondent groups.

3. Results and Discussion

The effectiveness of inventory auditing procedures in detecting frauds

The average point for the effectiveness of all 59 auditing procedures is 3.639, higher than 3.2308 and 3.036 in Moyes (1996) and Owusu-Ansah et al. (2002), but lower than 3.773 in Alley et al. (2010). The average point is used in t test – one sample about the effectiveness of each auditing procedure.

According to Table 2 below, 22 auditing procedures are evaluated effective at high level in detecting inventory frauds, accounting for 37.29%. Those procedures have points ranging from 3.79 to 4.32 which are statistically significantly higher than 3.639 ($t > 1.96$ and $sig. < 0.05$). Among those highly effective 22 procedures, there are 2 out of 12 test of control procedures. Among those 2 procedures, auditors evaluate highly the procedure *assessing the effect of applying information technology in managing inventory on inventory auditing*. Experts believe that the procedure is highly necessary, given applying increasingly modern information technology into management. For the remaining highly effective procedures, there are 5 out of 14 analytical procedures; 8 out of 14 procedures testing physical existence of inventory; 7 out of 22 inventory test of details procedures. The procedures 12 and 59 have the highest point of 4.32 for its effectiveness. Among test of details procedures, the procedure 59 about *examining information presented on financial statements* is the most effective.

Table 2: Classifying 59 auditing procedures based on their effectiveness in detecting inventory frauds

Audit procedures	Mean	t Value	Significance Level
Audit procedures evaluated as “effective at high level” in detecting fraud			
24. Review stock count procedures: [1] accounting for items in transit (in and out); [2] comparison of counts with stock records; and [3] conciliation of differences between counts and stock records.	3.97	4.016	0.000
25. Trace stock listed in the schedule to stock tags and the auditor's recorded counts for existence, description, and quantity.	4.10	6.153	0.000
26. Re-count a sample of client's counts to make sure the recorded counts are accurate on the tags (also check descriptions and unit of count, such as dozen or gross).	3.89	3.612	0.000
11. Observe the physical count of stock at all locations.	4.12	7.174	0.000
27. Trace (one sample) from stock tags to the stock sheets and make sure stock on tags are included.	4.11	7.085	0.000
28. Identify slow-moving, obsolete, or damaged items within the stock.	3.90	3.631	0.000
30. Tour warehouse facilities and become familiar with storage, marking, and location procedures.	3.91	3.986	0.000
31. Trace stock tags identified as non- owned during the physical observation to the stock-listing schedule to make sure that they have not been included.	3.79	2.309	0.023
32. Enquire about stocks in other locations, on consignment or on sale or return basis.	3.92	3.992	0.000
43. Review related party transactions involving stock movements.	4.12	7.348	0.000
13. Perform analytical procedures by computing ratios and comparing them with previous years.	4.07	6.002	0.000
14. Discuss with client management the stock and warehousing cycle.	4.11	6.244	0.000
16. Compare the classification of raw materials, work in progress, and finished goods by comparing the description on stock tags and the auditor's recorded test counts to the stock-listing schedule.	3.98	4.391	0.000
17. Compare current manufacturing costs with previous year?	3.90	3.297	0.001
19. Compare the count of larger items stated on the tags to the counts in the prior year and the perpetual stock records.	3.81	2.427	0.017
45. Follow up all exceptions to make sure they are resolved.	4.09	6.445	0.000
46. Perform compilation tests to ensure that stock sheets total schedule agrees with the physical stock counts.	4.11	7.085	0.000
48. Trace balances of stock-listing schedules to the general ledger	4.02	5.554	0.000
49. Perform purchases cut-off test to ensure that goods in transit on F.O.B. shipping point basis are recorded as purchases and included in stock.	3.89	3.200	0.002
58. Review major adjustments for propriety.	3.95	4.192	0.000

Audit procedures	Mean	t Value	Significance Level
59. Examine financial statements for: [1] proper separate disclosure of raw materials, work in progress and finished goods; [2] proper description of the stock costing method; [3] inclusion of significant sales and purchase commitments; and [4] proper description of pledged stock.	4.32	11.087	0.000
12. Assessing the effect of applying information technology in managing inventory on inventory auditing.	4.32	10.504	0.000
Audit procedures evaluated as “effective at moderate level” in detecting fraud			
1. Review procedures for receiving, inspecting, and storing incoming items and for shipments out of the warehouse	3.90	.620	0.536
2. Review the last receiving document used at year-end to make sure the stock for that item was included in the physical inventory.	3.64	.002	0.002
4. Trace shipments to sales records, stock records, and bills of lading (shipping documents).	3.75	1.309	0.194
40. Test direct labour costs by comparing with labour payroll and union contracts.	3.56	-1.026	0.308
9. Review adequacy of physical security for the entire stock.	3.76	1.812	0.073
10. Determine if access to stock area is limited to only authorised personnel.	3.68	0.570	0.570
29. Record client’s counts for subsequent testing.	3.69	0.730	0.467
33. Examine shipping area for stock set aside for shipment, but not counted	3.57	-.884	0.379
34. Examine receiving area for stock that should be included in the physical count.	3.49	-1.792	0.076
35. Observe that non-owned goods are either identified or segregated	3.70	0.844	0.401
42. Obtain written confirmation of stocks in public warehouses	3.61	-.487	0.627
15. Examine stock descriptions on the tags and compare to the actual stock for raw materials, work in progress, and finished goods.	3.69	0.675	0.501
18. Compare unit costs of stock determined either with FIFO or AVCO valuation methods with previous year?	3.58	-0.922	0.359
21. Compare current stock levels and values with previous years and evaluate.	3.71	1.008	0.316
47. Test pricing by tracing unit costs from vendors' invoices to the perpetual stock records.	3.65	0.168	0.867
6. Review policies regarding stock returns.	3.54	-1.530	0.129
51. Observe that damaged or obsolete goods are valued at net realizable value.	3.51	-1.637	0.105
7. Draw flow chart of internal control and compare with written policies.	3.63	-.118	0.906
54. Verify that stock balances on stock sheets agree with perpetual records (stock subsidiary ledger).	3.66	0.303	0.762
Audit procedures were evaluated as “effective at low level” in detecting fraud			

Audit procedures	Mean	t Value	Significance Level
3. Check the additions of the stock sheets for raw materials, work in progress, and finished goods.	3.03	-8.224	0.000
5. Trace shipments to sales daybooks	3.39	-2.957	0.004
36. Review the last shipping document used at year-end and make sure the stock for that item was excluded from the physical count.	3.15	-6.440	0.000
38. Account for the direct material costs, direct labour costs, and overhead costs involved in the valuation of manufactured stocks.	2.6	- 13.269	0.000
39. Evaluate whether the percentage of completion recorded on the tags for work in progress is reasonable.	3.39	-3.274	0.001
41. Test number of hours needed to manufacture the product by comparing with engineering specifications.	3.07	-8.022	0.000
57. Extend the physical stock counts times the price on selected items on the stock summaries.	2.31	- 17.038	0.000
44. Send confirmations to lenders for pertinent details about warehouse receipts pledged as collateral for liabilities.	3.43	-2.615	0.010
20. Compare extended stock value with previous years	3.39	-3.476	0.001
22. Determine whether costs should be included in the valuation of a particular item of purchased stock such as freight, storage, discounts, and other costs and compare the findings with the prior year's audit working papers to make sure the valuation methods are consistent.	3.35	-3.150	0.002
23. If a standard cost system is used, determine if the valuation method is efficient and useful by reviewing and analysing the variances.	3.48	-1.988	0.050
50. Verify pricing by locating the appropriate and sufficient invoices to account for the entire quantity of stock for the particular item being tested, especially for FIFO valuation method.	3.47	-1.985	0.050
52. In pricing stock, consider whether historical or replacement cost is lower.	3.08	-7.353	0.000
53. Review contracts with suppliers and customers and enquire of management about the possibility of the inclusion of consigned or other non-owned stock, or of owned that is not included.	3.43	-3.074	0.003
55. Review warehouse records for duplicate locations for the same items.	3.13	-6.555	0.000
56. Account for all used and unused tags to make sure none are lost, added or intentionally omitted (record tag numbers for those used and unused for subsequent follow-up).	2.89	-9.554	0.000
8. Reviewing general documents about the result of inventory counting of clients, interviewing people conducting inventory counting and their methods to process result after counting.	3.44	-2.571	0.012
37. Sending confirmation letters to ask warehouse holder to confirm the amount of inventory put in leased warehouse (if material).	3.15	-5.904	0.000

Source: The result from T test - one sample analysis

19 auditing procedures (accounting for 32.2%) are evaluated effective at moderate level in detecting inventory frauds (table 2). Those procedures have points from 3.51 to 3.90, which are not statistically significantly different from 3.639 ($|t| < 1.96$ and $\text{sig.} > 0.05$). Among those 19 procedures, there are 7 out of 12 test of control procedures; 3 out of 11 analytical procedures; 4 out of 14 procedures about physical testing and 5 out of 22 test of details procedures related to inventory transactions.

The remaining 18 auditing procedures among 59 auditing procedures (accounting for 37.29%) are evaluated effective at low level in detecting inventory frauds (table 2). Those procedures have points from 2.60 to 3.48, which are statistically significantly lower than 3.639 ($t < -1.96$ and $\text{sig.} < 0.05$). Among those 18 procedures, there are 3 out of 12 test of control procedures; 3 out of 11 analytical procedures; 2 out of 14 procedures about physical testing and 10 out of 22 test of details procedures related to inventory transactions. Test of details procedures account for big proportion (55.55%) among those lowly effective procedures.

In brief, in classifying auditing procedures with different levels of effectiveness in detecting frauds, the study results are similar to the one of Moyes (1996), Owusu- Ansah et al. (2002) and Alleyne et al. (2010). Basically, auditing procedures directly collecting audit evidences are evaluated effective at high level and auditing procedure indirectly collecting audit evidences are evaluated effective at low level. However, some procedures which are evaluated effective at high level in previous studies are evaluated effective at moderate level in the study, including procedures 1, 10, 42, 54. The procedure 59 is evaluated the most effective in the study, but effective at low level in previous studies.

Comparing between respondent groups in evaluating the effectiveness of auditing procedures

Firstly, in terms of the difference between male and female auditors in evaluating the effectiveness of auditing procedures, the t test—two samples shows that there is no significant difference between male and female auditors in evaluating the effectiveness of auditing procedures, except for 3 out of 59 procedures. 2 out of those 3 procedures (procedures 9 and 26) are evaluated more effective in detecting frauds by female auditors than by male auditors; the procedure 23 is evaluated more effective in detecting frauds by male auditors than by female auditors. The study result is not consistent with the one of Alleyne et al. (2010) which shows that male auditors evaluate 19 out of 56 auditing procedures significantly more effective than female auditors do.

Secondly, in terms of the difference in evaluating the effectiveness of auditing procedures between auditors working in Big-4 firms and auditors working in non-Big-4 firms, there are 3 inventory physical testing procedures (procedures 29, 30, 35), 1 analytical procedure (procedure 15) and 1 test of control procedure (procedure 54). Hence, the study result is similar to the one of Alleyne et al. (2010) which shows 9 out of 56 procedures different in evaluating its effectiveness between various auditing firms. With 5 out of 59 procedures being different in evaluating its effectiveness, it is inconclusive about the effect of auditing firm characteristics on the evaluation of auditors about effectiveness of inventory auditing procedures.

Thirdly, in terms of the difference in evaluating the effectiveness of auditing procedures between auditors with various working experience, based on the result from t test- two sample, there is no difference in most of the 59 auditing procedures, except for 9 procedures. Among those 9 procedures, there are 2 test of control procedures (procedures 6 and 10); 2 analytical procedures (procedures 11, 12); 1 physical testing procedure (procedure 37) and 4 test of details procedures (procedures 33, 38, 48, 53). The study result is similar to the one of Alleyne et al. (2010) but inconsistent with the one of Moyes (1996). Moyes (1996) proves the significant relationship between auditors' experience and their evaluation of effectiveness of auditing procedures.

4. Conclusions and Policy Implications

According to the study results from auditor survey about evaluating the effectiveness of inventory auditing procedures, auditing firms need to consider selecting auditing procedures with high effectiveness in detecting inventory frauds when making their auditing engagement plan. Among highly effective auditing procedures in detecting inventory frauds, 2 test of control procedures being highly evaluated are *observing inventory count* and *assessing the effect of applying information technology on inventory management*. The good assessment of continuance and effectiveness of internal control will support auditors to determine well the scope of substantive tests to enhance auditing quality. In case that auditors' capacity is limited in assessing information technology, for clients with high audit risk, auditors need to use experts' opinion (Nguyen Thi Lan Anh, 2017). In addition, 5 analytical procedures such as horizontal, vertical and ratio analysis need to be used to recognize abnormal characteristics in inventory numbers, then design other suitable auditing procedures. For example, the procedure *Discuss with client management the stock and warehousing cycle* or *Perform analytical procedures by computing ratios and comparing them with previous years* is evaluated with high points in detecting frauds (>4). Among those highly effective auditing procedures, physical testing procedures account for a big proportion (36.36%) and 57.14% among testing of inventory physical existence procedures. The result proves that auditors highly evaluate the testing of inventory physical existence which is used to compare with other informations of clients. Besides, test of details related to collecting directly auditing evidence about potential frauds need to be added into audit programs.

During an auditing engagement, besides adding highly effective auditing procedures into auditing plan, auditors can flexibly conduct moderately effective auditing procedures in order to collect more evidences and consolidate their conclusions about inventory information on client's reports. For example, auditors can implement an analytical procedure by calculating financial ratios related to inventory and comparing with ratios in previous years to realize abnormal changes to consider additional procedures; examining inventory import and export procedures to assess the reliability of information on accounting documents or checking selling and inward return policies of clients. For auditing procedures effective at low level, auditors need to consider whether applying those procedures, given the aim of only detecting inventory frauds, the time and money cost of an audit engagement.

The study results show that there is no significant difference in evaluating the effectiveness of inventory auditing procedures between auditors working in Big-4 firms and auditors working in non-Big-4 firms. However, non-Big-4 firms need to consider the effectiveness of the procedure *Tour warehouse facilities and become familiar with storage, marking, and location procedures* as auditors working Big-4 firms evaluate the procedure up to 4.08 point. Besides, there is no significant difference in evaluating the effectiveness of inventory auditing procedures between male and female auditors, so auditing firms do not need to consider gender when assigning tasks for auditors. However, male auditors need to consider applying the procedure *Re-count a sample of client's counts to make sure the recorded counts are accurate on the tags (also check descriptions and unit of count, such as dozen or gross)* as female auditors evaluate the procedure up to 4.06 point.

Limitations and suggestions for future research

Despite trying our best to eliminate limitations of the study, due to the limitation of time and resources, we do not study in an auditing sample which reflect better population. Moreover, our auditing sample may not be totally objective as during the survey process, we randomly select respondents based on our relationships with respondents or friends of respondents. For future research, we suggest researchers should seek to obtain a more objective and larger sample. Besides, researchers can evaluate the effectiveness of auditing procedures related to other components of financial statements such as receivable account or payable account.

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Factors Affecting Quality of Financial Statement Audit of FDI Enterprises in Vietnam

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Abstract

The paper aims to develop a framework for empirical research on factors affecting quality of financial statement audit of FDI enterprises in Vietnam. The results show that there are nine over eleven factors having positive influence on audit quality, say: Professional attitude, Experience and Industry Expertise, Auditor's independence, Audit process and quality control, Auditor qualification, Audit time, Law system, Auditee's characteristics, and Audit market. The findings of this study provide recommendations for auditors and audit firms to improve the quality of financial audit in Vietnam.

Keywords: *Audit Quality, Audit of financial statement, Factors, Vietnam*

JEL Classification: *M420, M480*

1. Introduction

Independent audit plays an vital role in our economy. It has been seen as a tool to protect the stability of the economy through auditors' opinions on audited financial statements for decision-making of interested users. However, the well-documented collapses of companies, such as Enron and WorldCom, brought the issue of audit quality to the headlines. In Vietnam, after more than 20 years of development, the audit market has been increasing, contributing to the transparency of corporate financial information, creating a favorable investment environment, contributing to the socio-economic development. However, comparing with the long historical development of the audit, the audit market of Vietnam is still young, the legal system is not really complete, the professional competence and experience of auditors is not so high. And there are still unhealthy competitions among

auditing firms by lowering audit fees, resulting to the fact that the audit companies have to reduce audit time and necessary audit procedures. As a consequence, that would increase the audit risk and reduce the audit quality. After the violations of auditors and audit companies related to the collapses of Bong Bach Tuyet Joint Stock Company in 2008 and Vien Dong Pharmaceutical Joint Stock Company in 2011, several local audit firms have been recently warned by the Ministry of Finance of Vietnam for failing to meet regulatory requirements. Therefore, the audit quality in Vietnam is an issue that needs to be taken into account.

Among audit clients in the economy, FDI enterprises are prospective clients of the young audit industry in Vietnam. Since launching Renovation Policy (as *Doimoi* in Vietnamese) in 1987, Vietnam has attracted the flow of foreign direct investment into the country. A big potential market of more than 90 million people (in 2015) with very low labor costs and abundance of raw materials makes Vietnam one of the more attractive emerging markets for foreign direct investment. Generally, it is through FDI enterprises, including Internal Joint Ventures and 100% foreign-owned enterprises, that multinational corporations (MNCs) commonly enter many developing countries, Vietnam in particular. According to the Vietnamese Ministry of Planning and Investment (MPI), by the end of 2015, FDI enterprises made up about 59.5% of 20,069 foreign invested projects and over 78.9% of total invested capital of US\$ 281.88 billion registered capital (MPI, 2016).

From audit firms' perspective, FDI enterprises are important audit clients with the revenue always accounting for the highest proportion, up to 50% of total revenue of the audit industry in Vietnam. By the average number per customer, revenue from FDI enterprises is also superior to others and to the industry average. Hence, it can be said that FDI enterprises are the most potential clients of audit industry in Vietnam.

For the reasons above, this study aims to examine factors affecting quality of financial statement audit of FDI enterprises in Vietnam from auditors' perspective. Therefore, two main points will be studied in detail:

- i. Discuss different approaches to audit quality and develop a research framework for examining the factors affecting the quality of financial statement audit in Vietnam.
- ii. Do empirical study to determine the impact of factors that affect quality of financial statement audit of FDI enterprises in Vietnam from auditors' perspective.

2. Literature Review and Methods

2.1. Literature Review

Audit Quality

Audit quality is a controversial topic and therefore, there are many different views regarding audit quality. DeAngelo (1981) defines audit quality as the market-assessed joint probability that a given auditor will both detect material misstatements in the client's financial statements and report the material misstatements. In this sense, audit quality is a function of the auditor's ability to detect material misstatements (technical capabilities) and report the errors (auditor independence). Wallace (1987) defines audit quality as a measure of the auditor's ability to reduce noise and bias and meticulously improve

accounting data. Palmrose (1988) defines audit quality in terms of level of assurance. Since the purpose of an audit is to provide reasonable assurance on financial statements, audit quality is the probability that audited financial statements are free from material misstatements.

A different way of looking at audit quality focuses on the compliance with auditing standards and professional ethics (Beckmerhagen et al., 2004). In this sense, the quality of audit is achieved when the audit is performed on the basis of auditing standards which give all conditions to provide reasonable assurance that financial statements are prepared in accordance with generally accepted accounting principles and are not misstated due to fraud or error (GAO, 2003). According to the IAASB, high audit quality is likely to be achieved when the auditor’s opinion on the financial statements can be relied upon as it was based on sufficient appropriate audit evidence obtained by an engagement team that exhibits appropriate values, ethics and attitudes and when the team applies a rigorous audit process and quality control procedures. It is also most likely achieved when auditors have sufficient knowledge and experience, have sufficient time to perform the audit work, receive valuable and timely reports and interact appropriately with a variety of different stakeholders (IAASB, 2013).

Factors Affecting Audit Quality

Four common audit quality frameworks are briefly presented below.

The FRC’s Audit Quality framework (2008)

Following the discussion paper “Promoting audit quality” in 2006, the FRC published the “Audit Quality Framework” in February, 2008. Table 1 summarizes the contents of this template.

Table 1. Factors Affecting Audit Quality according to the FRC (2008)

Factors	Relationship
The culture within an audit firm	The culture of an audit firm is likely to have a positive contribution to audit quality.
The skills and personal qualities of audit partners and staff	The skills and personal qualities of audit partners and staff are likely to have a positive contribution to audit quality
The effectiveness of the audit process	An audit process is likely to have a positive contribution to audit quality.
The reliability and usefulness of audit reporting	Audit reporting is likely to have a positive contribution to audit quality.
Factors beyond the control of auditors	Factors beyond the control of auditors are likely to have contributions to audit quality.

Francis (2011) and Knechel et al. (2013) frameworks

Francis (2011) and Knechel et al. (2013) developed two frameworks based on extending DeAngelo's (1981) and previous studies on audit quality. For comparison purpose, in the table below (Table 2) Francis (2011) and Knechel et al. (2013) models are side by side presented.

Table 2. Audit Quality frameworks proposed by Francis (2011) and Knechel et al. (2013)

Francis (2011) framework	Knechel et al. (2013) framework
(1) <i>Inputs</i> : Audit tests; Engagement team personnel	(1) <i>Inputs</i> : Incentives and motivation; Professional skepticism; Knowledge and expertise; Within-firm pressures
(2) <i>Audit process</i> : Implementation of audit test by engagement team personnel	(2) <i>Audit process</i> : Judgment in the audit process; Audit production; Assessing risk; Analytical procedures; Obtaining and evaluating evidence; Auditor-client negotiations; Review and quality control
(3) <i>Accounting firms</i> : Engagement teams work in accounting firms; Accounting firms hire, train and compensate auditors and develop audit guidance (testing procedures); Audit reports are issued in the name of accounting firms	(3) <i>Context</i> : Audit partner compensation; Abnormal audit fees; Non-audit fees; Audit fee premium – Big N auditors and industry specialists; Audit tenure; Market perceptions of audit quality
(4) <i>Audit industry and audit market</i> : Accounting firms constitute and industry; Industry structure affects markets and economic behavior	
(5) <i>Institutions</i> : Institutions affect auditing and incentives for quality, e.g., Stage Boards of Accountancy, the AICPA, FASB, SEC, and PCAOB, as well as the broader legal system	
(6) <i>Economic consequences of Audit outcomes</i> : Audit outcomes affect clients and users of audited accounting information	(4) <i>Outcomes</i> : Adverse outcomes; Restatements; Litigation; Engagement team personnel; Discretionary accruals; Accounting conservatism; Audit reports

It can be seen that two frameworks are slightly different. On the one hand, factors including Inputs, Audit processes, and Economic consequences of audit outcomes in Francis's model are similar to those of Inputs, Processes, and Outcomes of Knechel et al. (2013) model. On the other hand, Accounting firms, Audit industry and audit markets, and Institutions of Francis's can be summed up in the Context of Knechel et al.'s (2013).

The IAASB (2013) framework

In 2011, the IAASB published a document entitled "Audit Quality: An IAASB Perspectives". In 2013, this organization published an advisory, entitled "A Framework for Audit Quality" in which the IAASB proposes a framework from the perspective of the Council for the International Standardization of Audit Quality. The IAASB audit quality framework comprises four factors related to audit quality, namely: Inputs, Outputs, Context, and Interactions.

(1) Inputs: the values, ethics and attitudes of auditors; knowledge and experience of auditors and time allocated to perform the audit; and the effectiveness of audit process and quality control procedures.

(2) Outputs: the value and timeliness of auditor’s report; and the audit firm’s related factors.

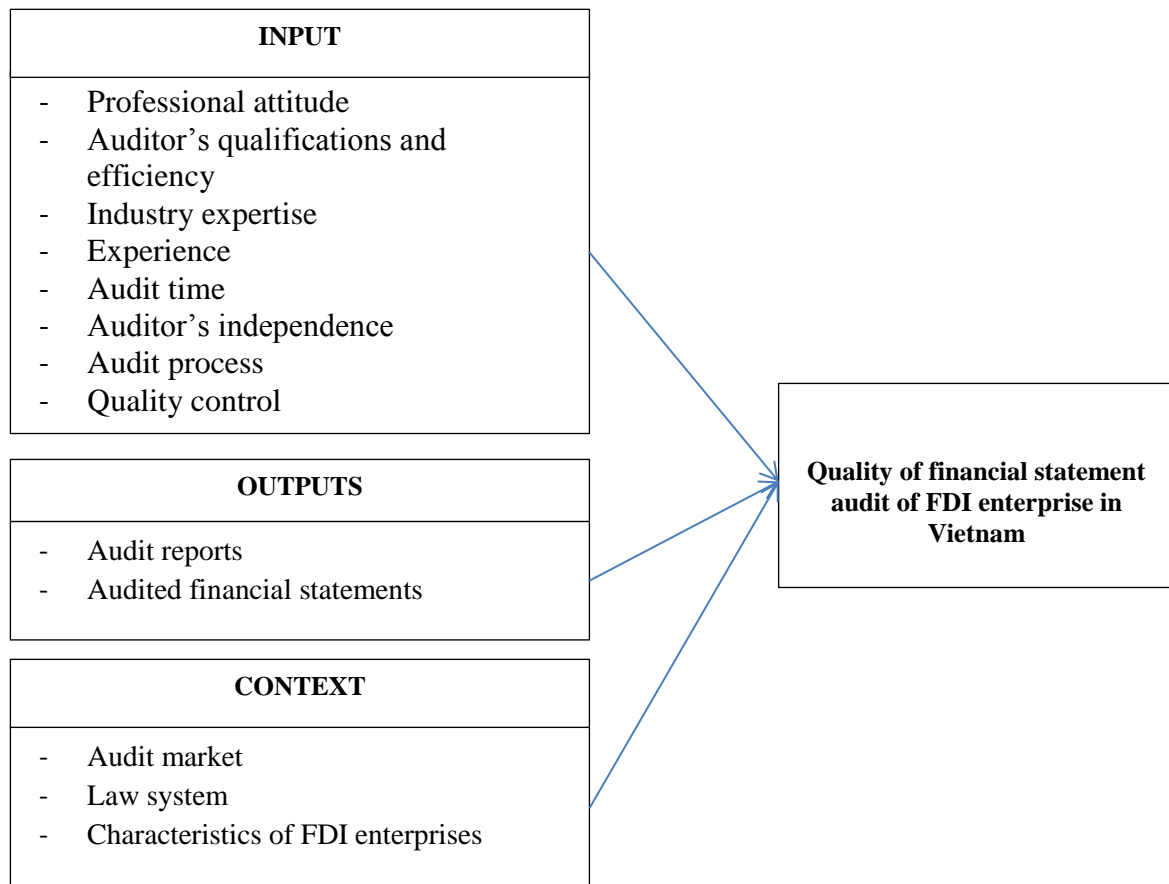
(3) Interactions: effective interactions between auditors, management, those charged with governance, regulators and users.

(4) Contextual factors: business practices and commercial law; laws and regulations relating to financial reporting; the applicable financial reporting framework; corporate governance...

Proposal model for audit quality in FDI enterprises in Vietnam

From four audit quality frameworks mentioned above, it can be said that the FRC (2008) and IAASB (2013) frameworks represent the views of standards setting bodies, while the frameworks of Francis (2011) and Knechel et al. (2013) represent the views of academic researchers. However, there are many similarities among the four models of audit quality. Thus, the integrated model to study the factors affecting audit quality of FDI enterprises in Vietnam will be developed as follows (see Fig. 1)

Fig. 1. Proposal model for audit quality in FDI enterprises in Vietnam



Research Hypotheses

From the proposed research model, the following hypotheses are presented:

H1: There is a positive relationship between the Professional attitude and Audit quality

H2: There is a positive relationship between Auditor qualifications and proficiency and Audit quality

H3: There is a positive relationship between Industry Expertise and Audit quality

H4: There is a positive relationship between Experience and Audit quality

H5: There is a positive relationship between Audit time and Audit quality

H6: There is a positive relationship between Auditor's independence and Audit quality

H7: There is a positive relationship between Audit process and Audit quality

H8: There is a positive relationship between Quality control procedures and Audit quality

H9: There is a positive relationship between Audit reports and Audit quality

H10: There is a positive relationship between Audited financial statements and Audit quality

H11: There is a positive relationship between Audit market and Audit quality

H12: There is a positive relationship between Law system and Audit quality

H13: There is a positive relationship between Characteristics of FDI enterprises and Audit quality

2.2. Research Methodology

Variables and scales

Variables are aggregated according to the factors and coded in the following table:

Table 3. Observed variables

No.	Coding	Indicators
I. INPUTS		
1. Professional attitude		
1	TDNN1	The audit team members as a group always exercised due care throughout the engagement
2	TDNN2	The auditor assigned to the engagement performs the audit with professional skepticism
3	TDNN3	The auditor is always highly focused and compliance to the professional standards in the audit
4	TDNN4	The auditor assigned to the engagement always considers all aspects of the audit before issuing audit conclusions.

No.	Coding	Indicators
2. Auditor qualifications and proficiency		
5	TDCM1	The auditor assigned to the engagement is very knowledgeable about auditing and accounting standards.
6	TDCM2	The auditor assigned to the engagement has the CPA certificate.
7	TDCM3	The auditor has updated the annual knowledge held by the Professional Association.
3. Industry Expertise		
8	CSNN1	The audit team members is very knowledgeable about the business sector of FDI enterprises
9	CSNN2	The auditor has conducted audits at other clients in the business sector of FDI enterprises
10	CSNN3	The auditor is able to identify and assess the level of risk associated with FDI enterprises
4. Experience		
11	KNKT1	The auditor assigned to the engagement has been on the audit for at least three years
12	KNKT2	The audit team leader has been on the audit for at least two years
13	KNKT3	The audit manager has been on the audit for at least two years
14	KNKT4	The audit firm has been performing the audit for at least three years
5. Audit time		
15	TGKT1	Audit time is defined in the audit plan
16	TGKT2	Time is determined to be sufficient to perform the audit, according to the size of the audit work
17	TGKT3	Time is determined to be sufficient to perform the audit, according to the complexity of the business
6. Auditor's independence		
18	DLKT1	The auditor assigned to the engagement is independent of emotional relationship with client.
19	DLKT2	The auditor assigned to the engagement is independent of economic relationship with client.
20	DLKT3	The auditor assigned to the engagement is independent in the collection and assessment of audit evidences.
21	DLKT4	The audit firm makes a declaration of independent commitment before the audit.
7. Audit process		
22	QTKT1	The audit methodology is adapted to developments in professional standards

No.	Coding	Indicators
23	QTKT2	The audit methodology encourages individual team members to apply professional skepticism and exercise appropriate professional judgment.
24	QTKT3	The engagement team complies with auditing standards, relevant laws and regulations
25	QTKT4	The engagement team makes appropriate use of information technology.
26	QTKT5	There is effective interaction with others involved in the audit including, where applicable, internal auditors.
8. Quality control procedures		
27	KSCL1	Rigorous quality control procedures are established and audit quality is monitored and appropriate consequential action is taken.
28	KSCL2	The audit firm is committed to quality assurance prior to each audit
29	KSCL3	The audit firm performs effective supervision and reviews of audit work in general
30	KSCL4	The audit firm has a department that carries out quality control for each audit
II. OUTPUTS		
9. Audit reports		
31	BCKT1	The auditor's report is issued and delivered to the management/board of directors on time
32	BCKT2	The auditor reports on client's going concern status
33	BCKT3	Audit reports are not reviewed by the authorities
10. Audited financial statements		
34	BCTC1	FDI enterprises do not have to adjust financial statements after audit
35	BCTC2	In audited financial statements, there is no profit adjustment by accrual accounting
36	BCTC3	Accountants of FDI enterprises apply the conservatism principle when preparing financial statements
III. CONTEXT		
11. Audit market		
37	TTKT1	There is a fair competition in the audit market
38	TTKT2	There is strong growth of Non-Big 4 auditing companies

No.	Coding	Indicators
39	TTKT3	Audit market is not dominated by Big 4 auditing companies
12. Law system		
40	HTPL1	The adequacy of the accounting and auditing standard system is ensured
41	HTPL2	The suitability of the accounting and auditing standards system is ensured
42	HTPL3	The update of the accounting and auditing standards system is ensured
43	HTPL4	There are punishments and responsibilities of the involved parties
13. Characteristics of FDI enterprises		
44	DDDN1	The management apparatus of FDI enterprises is streamlined and highly qualified
45	DDDN2	The integrity of the management board of FDI enterprises on the responsibility to publish the truth and fairness of financial statements is guaranteed
46	DDDN3	Internal audit department of FDI enterprises operates effectively
IV. AUDIT QUALITY		
47	CLKT1	The audit was performed by an engagement team that exhibited appropriate values, ethics and attitudes;
48	CLKT2	The audit was performed by an engagement team that was sufficiently knowledgeable and experienced
49	CLKT3	The auditor applied a rigorous audit process and quality control procedures
50	CLKT4	The auditor provided valuable and timely reports
51	CLKT5	The auditor interacted appropriately with a variety of stakeholders

The scale was a five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).

Sample selection and data collection

According to Hair et al. (2006), the sample size must be at least 100. Hoang Trong and Chu Nguyen Mong Ngoc (2008) set the sample size by 5 times of the number of observation variables. Accordingly, with 51 observation variables, the minimum sample size is $51 * 5 = 255$. For the sake of reliability, 350 questionnaires were sent to the auditors via the Google Document Tool.

Amongst 292 responses, 14 were rejected for invalid reasons. Therefore, the remaining number in the analysis was 278, of which 64.3% were CPAs, 42% were the audit managers from different auditing firms in Vietnam.

Scale reliability

To determine the reliability of scale, Cronbach's alpha was employed. In general, variables with a Corrected Item-Total Correlation greater than 0.3 and a Cronbach's Alpha coefficient of 0.6 or more are considered acceptable and analyzed in the next steps (Nunnally & Burnstein, 1994). Cronbach's Alpha coefficients are shown in Table 4.

Table 4. Cronbach's Alpha coefficient

Factors	Cronbach's Alpha	N
Professional attitude (TDNN)	0.788	4
Auditor qualifications and proficiency (TDCM)	0.898	3
Industry Expertise (CSNN)	0.797	3
Experience (KNKT)	0.872	4
Audit time (TGKT)	0.781	3
Auditor's independence (DLKT)	0.840	4
Audit process (QTKT)	0.737	5
Quality control procedures (KSCL)	0.715	4
Audit reports (BCKT)	0.653	3
Audit reports (BCTC)	0.614	3
Audit market (TTKT)	0.632	3
Law system (HTPL)	0.839	4
Characteristics of FDI enterprises (DDDNN)	0.753	3
Audit quality (CLKT)	0.762	5

Source: SPSS 20.0

Among variables, only variable KSCL3 with Corrected Item-Total Correlation less than 0.3, so this variable is rejected. Thus, the model retains 14 good quality factors, with 50 variables.

3. Results and Discussion

3.1. Exploratory Factor Analysis

The Table 5 shows that all conditions for the Exploratory Factor Analysis (EFA) are met with KMO = 0.715 and the Barlett's sig. = 0.000, indicating that the EFA model is suitable. The results from Principal Component and Varimax show 42 variables load quite strongly to each factor with absolute value of loadings is greater than 0.5. The remaining 3 variables have factors loadings smaller than 0.5 will be excluded. The 42 variables are then analyzed using EFA and 11 generated components are extracted from the analysis with total variances in the dataset 69.1%.

Table 5. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.715
Bartlett's Test of Sphericity	Approx. Chi-Square	7121.918
	df	861
	Sig.	.000

Source: SPSS 20.0

Table 6. Rotated Component Matrix^a (3 times)

	Component										
	1	2	3	4	5	6	7	8	9	10	11
KNKT1	.920										
KNKT2	.917										
KNKT3	.914										
CSNN2	.810										
CSNN1	.728										
CSNN3	.680										
KSCL2		.817									
KSCL4		.810									
QTKT4		.795									
KSCL1		.781									
QTKT1		.668									
QTKT2		.658									
QTKT5		.635									
TDNN4			.801								
TDNN2			.770								
TDNN1			.756								
TDNN3			.721								
QTKT3			.607								
DLKT4				.825							
DLKT1				.805							
DLKT2				.802							
DLKT3				.793							
HTPL1					.853						
HTPL4					.816						
HTPL2					.809						
HTPL3					.779						
TDCM1						.892					
TDCM3						.886					
TDCM2						.868					
TGKT3							.863				
TGKT2							.808				

	Component											
	1	2	3	4	5	6	7	8	9	10	11	
TGKT1							.781					
DDDN1								.828				
DDDN2								.813				
DDDN3								.765				
TTKT3									.803			
TTKT2									.702			
TTKT1									.663			
BCKT2										.770		
BCKT3										.723		
BCTC2											.836	
BCTC1											.791	

Source: SPSS 20.0

In Table 6, there are 11 factors that represent the audit quality, with the variables of the factor rearranged differently from the original model (13 factors):

Component 1 consists of variables: KNKT1, KNKT2, KNKT3, CSNN1, CSNN2, and CSNN3. These variables initially belonged to two factors: Experience and Industry Expertise. Based on the name of the variables, this factor is renamed as **Experience and Industry Expertise**

Component 2 includes the variables: QTKT1, QTKT2, QD4, QTKT5, KSCL1, KSCL2, and KSCL4. These variables initially belonged to two factors: Audit process and Quality control procedures. Based on the names of the variables, this factor is renamed **Audit process and Quality control procedures**.

Component 3 consists of variables: TDNN1, TDNN2, TDNN3, TDNN4, and QTKT3. These variables initially belonged to two factors: Professional attitude and Audit process. Based on the name of the variables, this factor is renamed **Professional attitude**

Component 4 includes variables: DLKT1, DLKT2, DLKT3, and DLKT4. These variables originally belonged to the factor: Auditor's independence. Therefore, this factor is called **Auditor's independence**.

Component 5 includes variables: HTPL1, HTPL2, HTPL3, and HTPL4. These variables originally belonged to the factor: Law system. Therefore, this factor is called **Law system**.

Component 6 includes variables: TDCM1, TDCM2, and TDCM3. These variables originally belonged to the factor: Auditor qualifications and proficiency. Therefore, this factor is called **Auditor qualifications and proficiency**.

Component 7 includes variables: TGKT1, TGKT2, and TGKT3. These variables originally belonged to the factor: Audit time. Therefore, this factor is called **Audit time**.

Component 8 includes variables: DDDN1, DDDN2, and DDDN3. These variables originally belonged to the factor: Characteristics of FDI enterprises. Therefore, this factor is called **Characteristics of FDI enterprises**.

Component 9 includes variables: TTKT1, TTKT2, and TTKT3. These variables originally belonged to the factor: Audit market. Therefore, this factor is called **Audit market**.

Component 10 includes variables: BCKT2, BCKT3. These variables originally belonged to the factor: Audit reports. Therefore, this factor is called **Audit reports**.

Component 11 includes variables: BCTC1, BCTC2. These variables originally belonged to the factor: Audited financial statements. Therefore, this factor is called **Audited financial statements**.

As a result, through the EFA, there are 11 components representing the factors affecting the audit quality with 42 variables.

3.2. Adjusted Research Hypotheses

Based on the results of the exploratory factor analysis, the research model is adjusted and the hypotheses are re-expressed as follows:

H1': There is a positive relationship between Experience and Industry Expertise and Audit quality

H2': There is a positive relationship between Audit process and Quality control procedures and Audit quality

H3': There is a positive relationship between the Professional attitude and Audit quality

H4': There is a positive relationship between Auditor's independence and Audit quality

H5': There is a positive relationship between Law system and Audit quality

H6': There is a positive relationship between Auditor qualifications and proficiency and Audit quality

H7': There is a positive relationship between Audit time and Audit quality

H8': There is a positive relationship between Characteristics of FDI enterprises and Audit quality

H9': There is a positive relationship between Audit market and Audit quality

H10': There is a positive relationship between Audit reports and Audit quality

H11': There is a positive relationship between Audited financial statements and Audit quality

3.3. Linear Regression Analysis

Based on the adjusted model after EFA, linear regression results are presented as follows:

$$\text{CLKT} = \beta_0 + \beta_1 \text{CSKN} + \beta_2 \text{QTKS} + \beta_3 \text{TDNN} + \beta_4 \text{DLKT} + \beta_5 \text{HTPL} + \beta_6 \text{TDCM} + \beta_7 \text{TGKT} + \beta_8 \text{DDDND} + \beta_9 \text{TTKT} + \beta_{10} \text{BCKT} + \beta_{11} \text{BCTC} + \varepsilon$$

✓ Dependent Variable: Audit quality (CLKT).

✓ Predictors: Experience and Industry Expertise (CSKN), Audit process and Quality control procedures (QTKS), Professional attitude (TDNN), Auditor's independence (DLKT), Law system (HTPL), Auditor qualifications and proficiency (TDCM), Audit time (TGKT), Characteristics of FDI enterprises (DDDND), Audit market (TTKT), Audit reports (BCKT) and Audited financial statements (BCTC).

Table 7. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.709 ^a	.503	.482	.33827	1.395

a. Predictors: (Constant), BCTC, DDDN, TDNN, CSKN, HTPL, TDCM, QTKS, TGKT, DLKT, TTKT, BCKT

b. Dependent Variable: CLKT

Table 8. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.756	11	2.796	24.434	.000 ^b
	Residual	30.438	266	.114		
	Total	61.194	277			

a. Dependent Variable: CLKT

b. Predictors: (Constant), BCTC, DDDN, TDNN, CSKN, HTPL, TDCM, QTKS, TGKT, DLKT, TTKT, BCKT

Table 9. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.708	.266		2.659	.008		
CSKN	.158	.026	.263	5.976	.000	.965	1.037
QTKS	.096	.020	.217	4.863	.000	.940	1.064
TDNN	.217	.026	.376	8.396	.000	.932	1.073
DLKT	.104	.021	.227	4.982	.000	.900	1.111
HTPL	.124	.027	.203	4.578	.000	.952	1.050
TDCM	.084	.019	.208	4.368	.000	.824	1.213
TGKT	.048	.021	.104	2.277	.024	.903	1.108
DDDN	.064	.028	.102	2.300	.022	.953	1.049
TTKT	.038	.019	.093	2.006	.046	.861	1.162
BCKT	-.019	.023	-.041	-.840	.402	.774	1.291
BCTC	-.022	.026	-.039	-.851	.396	.894	1.119

Source: SPSS 20.0

From the above results, it can be seen that:

Multi-collinearity testing: The VIF of all independent variables is less than 10, so the multi-collinearity in the model is considered not to be serious.

The Durbin Watson Test is a measure of autocorrelation (also called serial correlation) in residuals from regression analysis. The Durbin-Watson value is 1.395 (between 1 and 3). Model does not have autocorrelation.

Result of ANOVA test with Sig. = 0.000 shows that the linear regression model was constructed in accordance with the dataset and was usable.

The R² (R Square) = 0.503 means that 50.3% of the variation in the audit quality of financial statements of FDI enterprises in Vietnam will be explained by factors with independent variables in the research model.

Results of regression analysis indicate that independent variables including CSKN, QTKS, TDNN, DLKT, HTPL, TDCM, TGKT, DDDN, TTKT are statistically significant (Sig. <5%) to CLKT. Thus, the research hypotheses H1', H2', H3', H4', H5', H6', H7', H8', H9', H10' are accepted. However, with the data collected, we do not find significant effect of BCKT and BCTC on CLKT (Sig.> 5%). Therefore, the research hypotheses H11', H12' are rejected.

Standardized regression equations are as follows:

$$\text{CLKT} = 0.263 \text{ CSKN} + 0.217 \text{ QTKS} + 0.376 \text{ TDNN} + 0.227 \text{ DLKT} + 0.203 \text{ HTPL} + 0.208 \text{ TDCM} + 0.104 \text{ TGKT} + 0.102 \text{ DDDN} + 0.093 \text{ TTKT}$$

And the importance of each factor on audit quality is presented on the following table:

Table 10. The influence of the factors

Factor	Beta	Proportion
CSKN	.263	14.67%
QTKS	.217	12.10%
TDNN	.376	20.97%
DLKT	.227	12.66%
HTPL	.203	11.32%
TDCM	.208	11.60%
TGKT	.104	5.80%
DDDN	.102	5.69%
TTKT	.093	5.19%
Total	1.793	100%

Source: calculates from the regression results

It can be seen from the Table 10 that among 9 factors affecting audit quality of financial statement audit of FDI enterprises in Vietnam, the most impacted factor is TDNN (20.97%), followed by CSKN on the second place (14.67%). On the third place are the factors DLKT, QTKS, TDCM and HTPL with influence proportion from 11.32% to 12.66%. The forth group is the lowest impacted factors including TGKT, DDDN and TTKT with impact proportion between 5.19% and 5.80%.

4. Conclusions

This study focused on the factors that affect the quality of financial statement audit of FDI enterprises in Vietnam. The empirical research found out nine key factors affecting the audit quality, namely: Experience and Industry Expertise, Audit process and Quality control procedures, Professional attitude, Auditor's independence, Law system, Auditor qualifications and proficiency, Audit time, Characteristics of FDI enterprises, and Audit market.

The findings of the research provide recommendations for auditors and auditing firms to improve quality of assurance services provided, such as: emphasizing on Professional attitude (TDNN with $\beta = 0.376$ and impacted proportion 20.97%), Experience and Industry Expertise (CSKN with $\beta = 0.263$ and impacted proportion 14.67%), Auditor's independence (DLKT with $\beta = 0.227$ and impacted proportion 12.66%), Audit process and Quality control procedures (QTKS with $\beta = 0.217$ and impacted proportion 12.10%), and Auditor qualifications and proficiency (TDCM with $\beta = 0.208$ and impacted proportion 11.60%).

The research findings are limited to the quality of audited financial statements of FDI enterprises in Vietnam. However, they can be referred as a reference for other empirical studies on quality of financial statement audit in Vietnam.

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The Factors that Affect the Auditor Independence in Financial Statements Audit in Vietnam

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Abstract

Financial information that meets the needs of the user must be accurate, sufficient, timely and reliable. Consequently, national laws and international auditing standards require the auditor to provide confidence in the audited financial information. To achieve this, the auditor independence must be ensured. However, the auditor independence is influenced by various factors such as the provision of non-audit services, audit fees, audit time, etc. This article identifies the factors that affect the auditor independence in financial statements audit in Vietnam at present, so there are some suggestions to improve the quality of financial statements audit. Using a questionnaire instrument, Viet Nam interested parties' perceptions of the influence on auditor independence of a large set of 26 factors are elicited. Most factors have a significant influence on independence perceptions for all groups. The principal threat factors relate to audit fee, audit tenure and non-audit service provision, while the principal enhancement factors relate to risks to auditor arising from poor-quality audit and disclosure of financial relations.

Keywords: *Independence, Auditor, Perception*

1. Introduction

According to DeAngelo (1981, p.186), “*Audit quality is the market assessed joint probability that a given auditor will both (1) discover a breach in the client’s accounting system and (2) report the breach*”. The probability that a given auditor will discover a breach depends on the auditor's technological capabilities, the audit procedures employed on a given audit, the extent of sampling, etc. The conditional probability of reporting a discovered breach is a measure of an auditor's independence from a given client. The aim of this paper

is to investigate the appearance standard by empirically exploring both auditors' and users' perceptions of auditor independence (PAI) in Viet Nam. Most of the research on this topic has been done in large countries such as USA and UK (Beattie et al., 1999; Bartlett, 1993; Pany and Reckers, 1988) or in small developing countries like Viet Nam, such as Barbados, Bahrain, Hong Kong, Malaysia. More specifically, within the context of Viet Nam, Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) has performed the only work to date on this issue, as it exists in Viet Nam. In view of the above, Viet Nam has been chosen as an ideal case for research.

2. Literature Review and Hypothesis

Auditor independence has been a major concern for a long time. But, the concept of independence has proved difficult to define precisely (Antle, 1984, p.1; Schuetze, 1994, p.69). Representative definitions are:

DeAngelo, 1981a, p.186 - *'the conditional probability of reporting a discovered breach'*;

Knapp, 1985 - *'the ability to resist client pressure'*

AICPA, 1992; Moizer, 1994, p.19; Schuetze, 1994, p.69 - *'an attitude/state of mind'*

The AICPA White Paper definition (AICPA, 1997) – *'an absence of interests that create an unacceptable risk of bias'*

ISB, 2000 – *'freedom from those pressures and other factors that compromise, or can reasonably be expected to compromise, an auditor's ability to make unbiased audit decisions'*

These representative definitions all reflect the importance of objectivity (ability to suppress biases) and integrity (willingness to express an opinion that truthfully reflects the evaluation of what has been discovered during the audit) as the two key aspects of auditor independence (Dunmore and Falk, 2001, p.8). Auditor independence has been assessed based on two standards, that is, fact and appearance. Independence in fact refers to the actual objective state of the relationship between auditing firms and their clients. Independence in appearance refers to the subjective state of that relationship as perceived by clients and third parties. Firth (1980) argues that if the auditor is not seen to be independent, users will have less confidence in the financial statements, and the auditor's opinion on the company's financial statements will be of no value. Thus, the credibility of auditors depends not only on facts but also, just as importantly, on the perception of independence. Both actual as well as perceived auditor independence are critical elements in the maintenance of public confidence in the auditing profession (Pany and Reckers, 1980).

In Vietnam, independence is provided for in the Code of Professional Conduct for Accountants and Auditors issued in accordance with Circular No. 70/2015 / TT-BTC dated 8 May 2015 of the Ministry of Finance as well as in the Independent Auditing Law of 2011. Independence is the first and most important principle for the professional ethics of auditors.

There are two types of study about auditor independence in appearance (also called perception of auditor independence – PAI). The majority of empirical studies on the PAI focused upon identifying the factors which potentially influence independence, and assessing their impact upon perceived independence since independence in fact is unobservable (such as Pany and Reckers, 1980; Gul, 1989; Gul and Tsui, 1992; Shockley, 1981; Bartlett, 1993; Teoh and Lim, 1996...). The second type of study on PAI focused on the differences in the positions of auditor independence among various groups. Some studies focus on the differences of opinions among different groups of preparers and users (Lavin, 1976; Dykxhoorn and Sinning, 1981; Jenkins and Krawczyk, 2001; Patel and Psaros, 2000...).

Some case studies include:

Imhoff (1978) conducted an investigation of auditors and users of financial statements to affect the auditor independence when auditor agreed to accept the offer of work for their client company. The survey results show that both groups (auditor and users of financial statements) think that the auditor independence will increase if the time lapse between auditing and working for a client firm increase.

Teoh and Lim (1996) investigated the different effects of existence of audit committees, full disclosure of non-audit fees, unlimited auditor tenure, provision of management consulting services, and audit fee dependency in Malaysia. The results show that these five factors seriously affect the perception of the independence of Malaysian credit officers, in which the auditor independence on income from a client is the most important factor.

A study by Beattie et al. (1999) investigated factors influencing the auditor independence: chief financial officers (CFOs), audit partners, and financial journalists. Their investigative instrument consists of 45 economic and legal factors that represent the threat or enhancement of the auditor independence. They report that almost of the threat factors are the economic dependence of the auditor and the provision of non-audit services while significant enhancements are the existence of an audit committee, the risk associated with the financial statements review and the risk to the auditor of the loss of registered technicians.

Abu Bakar et al. (2005) reported that credit officers in Malaysia recognized that the auditor independence was influenced by the size of the audit company, the audit firm's tenure, high level of competition within the external audit market, the existence of the audit committee, the provision of non-audit services and audit fee.

Alleyne et al. (2006) investigated the auditor independence in Barbados from the point of view of auditors and users. They reported that the independence was negatively impacted by a number of factors such as the auditor's economic dependence on customers, the provision of non-audit services, high competition, scale the status of a single audit specialist, the length of the tenure or the scale and proximity of the Barbados society.

The study by Alajmi (2011) also shows the effect of different factors on the auditor independence in Bahrain. The authors used a sample of auditors, credit officers, and financial

analysts to investigate the six groups of influencing factors. These are among the most important factors that are perceived by all the three groups to enhance AI.

The study by Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) summarized and indicates a number of factors that affect the auditor independence such as the provision of non-audit services, audit fees, auditing market competition, audit risks....

Based on previous studies on the factors affecting the auditor independence as well as legal conditions in Vietnam, the author inherits and synthesizes the typical elements of the model of Imhoff (1978), Abu Bakar et al. (2005), Alajmi (2011) and Nguyen Thi Phuong Hong, Ha Hoang Nhan (2015) to review factors affecting the auditor independence.

Suggested factors include: audit tenure; the provision of non-audit services; audit fee (the extent of economic reliance of auditors on their clients); the relationship between the auditor and their clients; high level of competition within the external audit market and the size of the audit firm; the existence of the audit committee; risks for the auditor from providing poor quality audit services and the disclosure of financial relationship.

Audit tenure (Tenure of an audit firm serving the needs of a given client)

After the Enron incident, there have been many recommendations concerning the limitation of the term of the auditor and the rotation of the auditor. Under the 2002 SOX Act, auditor is not considered independent if they audited a client for four years.

An audit period is defined as the period during which audit firms provide audit and non-audit services to clients. For example, an audit firm that audits a financial statement for a foreign direct investment enterprise for three years from 2016 to 2018, the audit period is three years. At present, there are many studies on the relationship between audit tenure and audit quality, and there are various views that long audit periods will have an impact on audit quality as well as on two part of the audit quality is the capacity and auditor independence.

The point of view of the audit rotation is that long audit tenure will reduce the auditor's independence and thereby reduce the audit quality. They argue that a long audit period will undermine the audit quality, and the auditor's ability to work is also likely to decrease as the audit period increases, the auditor independence will be destroyed by the long-term relationship of the audit with their clients (Hoyle.J, 1978). Long audit tenure is more likely to lead to less stringent audit procedures (Shockley. RA, 1982). Farmer et al. (1987) and Ryan et al. (2001) found that auditors were more likely to agree with corporate client management in important decisions when the time of incorporation audit is extended. Auditors will become more comfortable with their clients, reduce their professional scepticism, and reduce their diligence in finding audit evidence (Wooten, 2003). Therefore, an obligatory limitation on the audit period is required to reduce the influence of the customer on the auditor's opinion, thereby improving the audit quality.

On the other hand, the studies of Teoh & Lim (1996) and Beattie et al. (1999) concluded that the rotation of partners was viewed as one of the factors contributing to increase the auditor independence. The provisions of the Sarbanes - Oxley Act (2002)

stipulate a rotation of at least five years to ensure the independence, although it is not necessary to change the audit firm. According to Gate et al. (2007), there is a greater belief in the financial statements of the companies that have the rotation of the auditor than the companies that transfer the audit partners or not.

However, Dart (2011) believes that most UK investors do not agree that long-term auditing is a threat factor to independence. This study suggests that the audit firm may be more discerning and familiar with the client company's organization through repetition of the audit work, and therefore the audit quality will increase as the audit period is longer. Beck, Frenka & Solomon (1988) argue that the lack of knowledge of customer characteristics in the first years of auditing will reduce the ability to detect critical errors contained in financial statements. The relationship between the customer and the auditor will allow the auditor to rely less on management estimates and become independent of customer management (Solomon et al., 1999).

In Vietnam today, the auditing period and rotation of auditors are clearly defined in the legal documents and auditing standards. Independent Auditing Law of 2011 as stipulated in Article 58: "*Auditing enterprises and branches of foreign auditing enterprises in Vietnam are not allowed to appoint auditing practicing auditors to a public interest unit for five consecutive fiscal years.*" when audited for public interest entities. However, Article 16 of Decree No. 17/2012 / ND-CP dated March 13, 2012 of the Government detailing and guiding a number of articles of the Law on Independent Auditing: "*Practicing auditors must not sign audit reports for an audited unit for more than three (03) consecutive years*".

Dr. Ha Thi Ngoc Ha (2011) pointed out the importance of the audit tenure, the audit term and the impact on the audit quality. It specifies that the audit period should comply with international regulations, from 3 to 5 years and at the same time there are different provisions on the rotation duration and the deadline for returning auditors is the audit responsibility and the auditor is responsible for controlling the quality of the audit.

The results of the survey by Nguyen Thi Phuong Hong, Ha Hoang Nhan (2015) also show that the audit tenure in particular is that the auditor performs an audit for a client over a period of more than five years that is a threat to its independence, although this is one of the three least threatening factors on the Likert scale.

The provision of non – audit services

Non-audit services are services other than auditing services provided by the independent audit firm to the same auditing client. Non-audit services include: Management consulting services, system design services, tax consulting services...

There are different views on the influence of non-audit service delivery on audit quality. Some researchers believe that the audit firm's provision of non-audit services will increase the auditor's ability to improve audit quality. According to Grout, Jewitt, Pong and Whitting (1994), providing non-audit services enable auditors to be diversified and less dependent on auditing clients. The provision of non-audit services allows the auditing

company to gain an understanding of auditing clients, better understanding of the internal control system of auditing clients as well as understanding the financial risks that auditor customers may face. (Wooten, 2003).

In contrast, many researchers believe that the quality of the audit will be reduced when the audit firm provides audit and non-audit services to the same client. The auditor independence will be affected when the audit firm provides additional non-audit services to the client (Canning and G.William, 1999). Auditors tend to accept requests from auditors when the audit firm provides additional management consulting services to clients. (Lindsay, 1989). The temptation to earn more non-audit fees may reduce the auditor's independence (Frankel, Johnson, & Nelson, 2002). According to the studies by Beattie et al. (1999) in England, Teoh & Lim (1996) in Malaysia, Law (2008) in Hong Kong, Al-Ami & Saudagaran in Bahrain (2011), non-audit fees of more than or equal to 100% of audit fees are considered as one of the most threatening factors to independence. Lower fees are also seen as a threat to independence.

MA Le Doan Minh Duc (2017) also pointed out that the provision of non-audit services in Vietnam, especially accounting services and tax consulting services significantly diminished the auditor's independence while other services had a negligible decline.

Research by Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) also shows that non-audit service fees accounted for 100% of auditing service is the most threatening factor for the auditor independence.

Under the provisions of Article 40 of the Independent Auditing Law of 2011, accounting and tax consulting services provided in conjunction with auditing services for the same client would reduce audit independence. At the same time, the code of ethics of auditing in Vietnam does not allow auditing companies to simultaneously provide these services simultaneously providing audit services to one customer. (Article 30 of the Law on Independent Auditing 2011). However, in the opinion of the audited entity, auditor independence is ensured if audit and non-audit services are performed by different groups of people. In addition, non-audit services will spread knowledge to audit services, increasing auditing efficiency.

Audit fee

To reduce the risk of losing a charge from a contract, the auditor can fulfil the customer's requirements and even cooperate in fraudulent activities (Gavious, 2007). According to Beattie et al. (1999), Alleyne et al. (2006) and previous studies, economic dependence is considered to be one of the most threatening factors of independence, in particular when audit fees from a client account for up to 10% of the firm's revenues. In contrast, studies by Craswell et al. (2002) in Australia, DeFond et al. (2002) and Callaghan et al. (2009) show no evidence of a link between audit fees and giving the opinion of auditor.

When surveying in Vietnam, Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) show that the audit fee factor has only relative threat to independence. Research by Phan Thanh Hai (2012) points out some limitations of Vietnamese auditing services in the process of operation, that is, lowering the price, shortening the audit time to retain customers affect the quality of the audit and the transparency of the financial statements.

The relationship between the auditor and their clients

The relationship between the customer and the auditor will affect the auditor independence. The auditor independence will be impaired if they participate or have a position that may affect the audit group of the old audit firm that is conducting an audit at the audit client where the auditor get a job offer (Independence Standard Board, 2000).

Imhoff (1978) conducted an investigation of auditors and users of the financial statements to assess the auditor independence when the auditor accepts for their client company. The survey found that both groups (auditors and users) assumed that the auditor independence would increase when the length of time that the auditor accepts will work at the client's company until the new audit is performed.

Section 290.34 of Vietnam Accounting Standards for Auditing & Accounting also specifies: “*If the previous member of the audit team or the board of directors of an audit firm currently holds the same position in the client but has no significant relationship with the audit firm, the existence and severity of the risk from familiarity or threat is subject to the following factors:*

(1) The position of such member at the auditing client;

(2) The relevance of that member to the audit team;

(3) The period since the member is no longer a member or audited or a member of the Board of Directors of the auditing firm until the time of conducting the audit;

(4) The previous position of that member in the audit group or in the audit firm, for example, whether the member is responsible for regular contact with the board of directors or the management of the clients.”

In this case, the audit firm must assess the seriousness of the risk and apply the necessary protection measures to eliminate or reduce the risk to an acceptable level.

Article 30 of the Law on Independent Auditing of Vietnam also states in cases where audit firms are not allowed to conduct audits when they have affectionate or economic relationships with their clients, such as: the auditing member, manager or executive member of the audit firm is a member, contributing capital to the audited entity or having other economic or financial relations with clients in accordance with the standards of professional ethics of accounting and auditing;....

The existence of audit committee

There is no precise, complete definition of the audit committee. Under the Sarbanes - Oxley Act (2002), the audit committee is “*A Board (or equivalent body) is established and*

is one of the board of directors of an issuer for the purpose of monitoring the accounting processes and financial statements of issuers and the auditing financial statements of issuers". Results from previous studies have shown that the existence of an audit committee is one of the factors that increase the auditor's independence (Beattie et al. (1999), Teoh & Lim (1996), Abu Bakar et al. (2005), Alleyne et al. (2006), Al – Ajmi & Saudagaran (2011); Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015).

High level of competition within the external audit market and the size of the audit firm

According to the study by Beattie et al. (1999), the high competition in the auditing market and the small size of the audit firm from both the auditor's and the financial reporting user's point of view are potential factors that threaten the auditor independence. Large audit firms, members of international firms are often judged more independent than small auditing firms or local firms. (Alleyne et al (2006), Al Ajmi & Saudagaran (2011), Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015). However, Canning & Gwilliam (1999) conclude that the small size of the audit firm and the proximity of the audit market in Ireland reinforce the independence. As of 31/08/2017 there are 162 audit firms in Vietnam, of which 03 are foreign audit firms and 32 are audit firms for public interest entities. The number of small and medium firms accounts for more than $\frac{3}{4}$. This makes the higher competition in audit and non-audit services, with many factors threatening the auditor independence.

Risks for the auditor from providing poor quality audit services

A number of studies have shown that identifying and evaluating risk factors for auditors who do not guarantee independence may affect the quality of the audit that will increase their independence. These factors are: the risk of litigation against the auditor, the risk of disciplinary action against auditors from professional organizations or law enforcement, the risk of damaging the reputation of auditors in the public, risk of losing audit practice certificate. In particular, the study by Beattie et al. (1999), Teoh & Lim (1996), Abu Bakar et al. (2005), Alleyne et al. (2006), Al-Ami & Saudagaran (2011) and Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015)

Disclosure of financial relations

The study by Beattie et al. (1999) in England, Alleyne et al. (2006) in Barbados, Al-Ami & Saudagaran (2011) in Bahrain, Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) in VietNam show the disclosure of information about services provided to clients and fees increases the auditor independence when examining the views of auditors, bank loan officers, accomplishments.

With the factors defined above, set up research hypothesis:

H1a. Audit tenure (TK); the provision of non-audit services (DV); audit fee (the extent of economic reliance of auditors on their clients) (P); the relationship between the auditor and their clients (QH); high level of competition within the external audit market and the size of the audit firm (CT) have a negative impact on the auditor independence

H1b. The existence of the audit committee (UB), the risk to the auditor from the provision of poor quality audit services (RR), and the disclosure of financial relations (CK) have a positive impact on the auditor independence.

H2. There is no significant difference in perception of the positive and negative factors affecting the auditor independence between the two groups (auditors and users)

3. Research Methodology

In VietNam, there are not many studies on perceptions of auditor independence. The study by Nguyen Thi Phuong Hong and Ha Hoang Nhan (2015) summarized and indicates factors that affect the auditor independence such as the provision of non-audit services, audit fees, auditing market competition, audit risks.... as well as consider the views of different subjects on these factors. The subjects in the study were divided into three main groups: auditors, accountants, and users of financial statements including investors and credit officers. There are also different perceptions between users and auditors of those levels of influence. However, in addition to the above subjects, managers also regularly use financial statements and have high requirements for financial statements and audit reports to serve the business operations should also consider their views on the auditor independence. So, this study have separate 2 groups subject: auditors and users of financial statements (bank credit officers, individual investors, managers,.....), not including accountants (financial reporters). This survey focus on auditing firms in Hanoi such as AASC, Kreston Vietnam, A & C, etc. and on some banks, export company, trade company, other services company

With the research variables developed, the author contributes a questionnaire. The questionnaire consisted of two parts: demographic questions and questionnaires on the degree of influence of the factors on the auditor independence.

A total of 150 respondents were surveyed directly and through online survey, with 123 respondents (82%), 34 male (27.64%) and 89 female (72.36%).

The survey gave their views on the impact of 26 factors on the independence of the Likert scale: (1) serious threat independence, (2) rather threatening independence, (3) not influencing independence, (4) increasing independence, (5) strongly increasing independence.

Then, to test the hypotheses H1a and H1b, this study uses the Compare Mean tool included in IBM SPSS 20 and the support of MS Excel 2013 to compare the average value that auditors and the users measure on the level of the influence of each factor. Then classified into two distinct groups: a group of factors that threaten independence (mean value <3) and a group of factors that increase independence (mean value > 3) and rank in each the group. To test the H2 hypothesis, this study of the Independent Samples T-test analysis tool on IBM SPSS 20 looked at the difference in opinion among the groups at which factor and the specific difference.

4. Results and Discussion

*** Demographic characteristics**

Of the surveyed subjects, the percentage of auditors was 59.3%, while the users of financial statements was 40.7% divided into different sectors such as managers, investors, bank credit officers.... The age of the respondent is from 30 to 50 years old so that the knowledge and experience needed for the occupation. The auditors has a high level of experience in auditing and accounting, with 12 members of the CPA, ACCA; experience in accounting and auditing is lower in users, but also have one member of ACCA. The frequency of uses of the surveyed subjects also focused on the auditors, while the uses were lower.

*** Hypothesis testing H1a, H1b:**

Mean scores and ranks are presented in Table 1 - 2 for the two samples (auditors and users). Table 1 includes those factors (17 factors) which respondents consider to undermine auditor independence (means less than three); whereas table 2 includes those factors (9 factors) which respondents believe to enhance auditor independence (means greater than three).

Table 1. Factors undermining independence

Factors	Auditor		User		Sum	
	Mean	Rank	Mean	Rank	Mean	Rank
(DV1) Non-audit services fee from incubent >= 100% audit fee	1,92	1	2,02	4	1,96	1
(DV4) Audit firms and auditors seek and appoint majority personnel for the client	2,38	7	1,78	1	2,14	2
(DV2) Non-audit services fee from incubent from 50% to 100% audit fee	2,29	4	1,98	3	2,16	3
(P1) Partner's income depends on the retention of a specific client	2,34	5	1,90	2	2,16	3
(CT1) Competition among audit firms	2,11	2	2,52	15	2,28	5
(TK1) Auditor has been auditing the client for more than 3 years	2,41	8	2,22	8	2,33	6
(CT4) Budget pressures imposed by audit firm on staff	2,18	3	2,60	16	2,35	7
(CT2) Auditor's desire not to lose status by losing key client	2,47	13	2,20	7	2,16	8
(TK2) Partner has been auditing the client for more than 3 years	2,42	9	2,30	10	2,37	9
(CT6) Small local audit firm	2,37	6	2,44	14	2,40	10
(QH1) The time lapse between auditing and	2,45	11	2,32	11	2,40	10

Factors	Auditor		User		Sum	
	Mean	Rank	Mean	Rank	Mean	Rank
working for a client firm <= 30 months						
(QH2) The time lapse between auditing and working for a client firm > 30 months	2,44	10	2,34	12	2,40	10
(P2) >=10 percent of total firm revenues from one client	2,58	13	2,16	6	2,41	13
(CT3) Competitive audit fee among audit firms	2,64	15	2,22	8	2,47	14
(DV3) Non-audit services fee from incumbent from 25% to under 50% audit fee	2,81	16	2,14	5	2,54	15
(QH3) The rank of the ex-auditor who accepts employment with a client firm	2,56	12	2,64	17	2,59	16
(TK3) Audit firm has been auditing the client for more than 5 years	2,81	17	2,34	12	2,62	17

In which, the three biggest threats to independence are *(DVI)*, *(DV2)*, *(DV4)*, *(P1)* with an average of 1.96; 2.14 and 2.16. These factors belong to the provision of non-audit services (DV) and audit fees (P). However, there are differences in rankings for each respondent. The users agree on threat factors but the ranking has changed: *(DV4)*, *(P1)*, *(DV2)*. Whereas, according to the auditor, the most threatening factors to independence are: *(DVI)*, *(CT1)*, *(CT4)*.

According to all respondents, the three least threatening factors to independence were *(DV3)*, *(QH3)*, *(TK3)* with an average of 2.54; 2.59 and 2.62. These factors belong to three different groups of factors: the provision of non-audit services (DV), the relationship between the auditor and the client (QH) and the audit tenure (TK). The auditors only agree with two factors that threaten independence at the lowest level are *(DV3)*, *(TK3)*, *(CT3)*. Meanwhile, for users, the least threatening factors to independence are *(CT1)*, *(TK1)*, *(QH3)*.

It can be seen that the provision of non-audit services (DV), audit fees (P) and competition among audit firms in Vietnam are very important. This can be explained by the strong competitive market in Vietnam because the opening of Vietnam' economy with the entry of large audit firms, there has been a lot of pressure on domestic audit firms. However, the foreign audit firms when participating in the Vietnamese auditing market must also meet the characteristics and demands of auditing of Vietnamese enterprises, causing changes in audit fees, the provision of non-audit services. Moreover, Vietnamese law currently does not contain detailed regulations on the determination of audit fees, management of audit fees and non-audit services.

The new factor included in the survey is that the relationship between the auditor and the client is alleged to have a negative impact on the auditor independence but at a low level

(11th and 17th) in line with Imhoff (1978). The results of the survey on the provision of non-audit services, the audit tenure, and the size of the audit firm are consistent with previous studies.

Table 2. Factors enhancing independence

Factors	Auditor		User		Sum	
	Mean	Rank	Mean		Mean	Rank
(RR3) Risk of damage to auditors' reputation from public scandals	4,23	1	3,90	7	4,10	1
(RR2) Risk to auditor of disciplinary action by professional body	4,16	2	3,84	8	4,03	2
(RR1) Risk of litigation against auditor	3,90	3	4,18	1	4,02	3
(RR4) Risk to auditor of loss of practicing certificate	3,77	6	4,04	5	3,88	4
(CT5) Being a big four international firm, being a big size company, being a member international audit firm	3,84	5	3,92	6	3,87	5
(UB) The existence of audit committee	3,89	4	3,72	9	3,82	6
(CK2) Disclosure of audit fees	3,41	9	4,16	2	3,72	7
(CK1) Disclosure of non-audit services	3,45	7	4,08	4	3,71	8
(CK3) Disclosure of non - audit fees	3,44	8	4,10	3	3,71	8

Starting with the analysis of the factors considered to be the most robust independent, we find that for the overall sample, that is, risks for the auditor from providing poor quality audit services (RR). This is also consistent with the auditor's point of view. In the meantime, users claims that (RR1), (CK2) and (CK3) are the three most powerful factors of independence, according to what publicity is easier to control than what is not public, especially costs.

In the group of least significant factors that increased the independence, according to all respondents, there were three factors: (CK1) *Disclosure of audit fee*, (CK2) *Disclosure of non-audit services*, (CK3) *Disclosure of non-audit fees* with a ratio of 3.71; 3,72; 3,71. On the other hand, auditor agrees with these three factors but with a different ranking, the user that the three factors that increase independence are: (RR3), (RR2), (UB). Thus, unlike previous studies, factor (UB) *the existence of audit committee* that appointed auditor did not really have a strong impact on the auditor independence, the reason may be due to the specificity in Vietnam, the organizational structure of the enterprises is inadequate; most of the enterprises do not have the Audit Committee. The survey subjects are mainly small enterprises so they have not the audit committee on the board.

*** Hypothesis testing H2**

To investigate differences in the views of the two groups on the extent to which factors influence their independence, the study used the Independent Sample T - test. With 95% confidence, Sig value. <0.05 is considered to be a difference in opinion between the two groups. Accordingly, the results show that there are 17 factors that differ from one another in the two groups in Table 3.

Table 3. Results of t - test

Factors	Mean	Std. Deviation	Std. Error Mean
TK1. Auditor has been auditing the client for more than 3 years	Auditors 2,41	,940	,110
	Users 2,22	,815	,115
TK2. Partner has been auditing the client for more than 3 years	Auditors 2,42	,956	,112
	Users 2,30	,909	,129
TK3. Audit firm has been auditing the client for more than 5 years	Auditors 2,81	,828	,097
	Users 2,34	,917	,130
DV1. Non-audit services fee from incumbent >= 100% audit fee	Auditors 1,92	,662	,077
	Users 2,02	,685	,097
DV2. Non-audit services fee from incumbent from 50% to 100% audit fee	Auditors 2,29	,905	,106
	Users 1,98	,654	,093
DV3. Non-audit services fee from incumbent from 25% to under 50% audit fee	Auditors 2,81	,923	,108
	Users 2,14	,833	,118
DV4. Audit firms and auditors seek and appoint majority personnel for the client	Auditors 2,38	,892	,104
	Users 1,78	,582	,082
P1. Partner's income depends on the retention of a specific client	Auditors 2,34	,853	,100
	Users 1,90	,839	,119
P2. >=10 percent of total firm revenues from one client	Auditors 2,58	,644	,075
	Users 2,16	,792	,112
QH1. The time lapse between auditing and working for a client firm <= 30 months	Auditors 2,45	,817	,096
	Users 2,32	,819	,116
QH2. The time lapse between auditing and working for a client firm <= 30 months	Auditors 2,44	,866	,101
	Users 2,34	,798	,113
QH3. The rank of the ex-auditor who accepts employment with a client firm	Auditors 2,56	,799	,094
	Users 2,64	,776	,110
UB. The existence of audit committee	Auditors 3,89	1,048	,123
	Users 3,72	1,070	,151
CT1. Competitive audit fee among audit firms	Auditors 2,11	,809	,095

Factors		Mean	Std. Deviation	Std. Error Mean
	Users	2,52	,677	,096
CT2. Auditor's desire not to lose status by losing key client	Auditors	2,47	,668	,078
	Users	2,20	,728	,103
CT3. Competitive audit fee among audit firms	Auditors	2,64	,537	,063
	Users	2,22	,840	,119
CT4. Budget pressures imposed by audit firm on staff	Auditors	2,18	,839	,098
	Users	2,60	,639	,090
CT5. Being a big four international firm, being a big size company, being a member international audit firm	Auditors	3,84	,687	,080
	Users	3,92	,724	,102
CT6. Small local audit firm	Auditors	2,37	,717	,084
	Users	2,44	,644	,091
RR1. Risk of litigation against auditor	Auditors	3,90	,748	,088
	Users	4,18	,720	,102
RR2. Risk to auditor of disciplinary action by professional body	Auditors	4,16	,764	,089
	Users	3,84	,792	,112
RR3. Risk of damage to auditors' reputation from public scandals	Auditors	4,23	,773	,090
	Users	3,90	,707	,100
RR4. Risk to auditor of loss of practicing certificate	Auditors	3,77	,698	,082
	Users	4,04	,699	,099
CK1. Disclosure of non-audit services	Auditors	3,45	,867	,101
	Users	4,08	,853	,121
CK2. Disclosure of audit fees	Auditors	3,41	,847	,099
	Users	4,16	,681	,096
CK3. Disclosure of non - audit fees	Auditors	3,44	1,014	,119
	Users	4,10	,909	,129

In general, 17 factors have different viewpoints, there are 10 threatening factors and 7 factors that increase the auditor independence. Among factors that differ from one another, it is possible to see factors such as (TK 3), (P1), (P2), (DV3), (DV4), (CT1), (CT3), (CT4), (CK1), (CK2), (CK3) are the biggest difference with Sig value at T-Test <0.01. Users rated higher threat in 8 threatening factors of independence (TK3, DV2, DV3, DV4, P1, P2, CT2, CT3) and evaluated the higher increase in the five factors that increased independence from auditors (RR1, RR4, CK1, CK2, CK3). This difference can be explained by two reasons: firstly, is derived from the delegated theory; secondly, the characteristics of the

operations of Vietnamese audit firms, together with the qualifications and experiences of the surveyed subjects.

Derived from delegated theory, because users are not directly involved in the process of auditing the financial statements of auditor, therefore, they found that the audit tenure of an audit firm for a client was too long (for over 5 years, auditors will become more comfortable with their clients, reduce their professional skepticism, and reduce their diligence in finding audit evidence), non-audit services such as non-audit services fee from incubent over 25% or more audit fee (for the user is large, the auditor can defy to obtain this very high fee), audit fee (≥ 10 percent of total firm revenues from one client) or an audit firm providing human services (can dominate the audit) has a higher level of threat to independence. On the other hand, they also expect factors that increase independence higher than those of auditors. The five factors undermining independence are informations which users desired to be published so that the auditor independence can be considered and assessed more specifically, this can be a pressure on the auditors to ensure independence, to satisfy the requirements of the users.

Derived from the characteristics of the operations of the Vietnamese audit firms, the pressures experienced by audit firms in the performance of their work such as budget pressures, competition among foreign enterprises This can cause unhealthy competition, reduce the auditor independence and reduce the quality of auditing financial statements.

On the other hand, due to the level and experience of the respondents, the subjective assessment of factors may also make a big difference between the two groups.

5. Conclusions and Policy Implications

In summary, by synthesizing and analyzing the results of the survey of factors affecting the auditor independence, the author gives some comments as follows:

First, the H1a and H1b hypotheses are proven. Basically, both groups of respondents stated that there are 17 factors that threaten independence and 9 factors that increase independence in line with the hypothesis although there are differences in threat ranking or independence in each factor.

Second, reject the H2 hypothesis. Independence testing with 95% confidence intervals showed a difference in viewpoint between the two groups of 17 factors (Sig < 0.05), including 10 threat factors and 7 factors that increase the auditor independence. The most obvious difference was found in 11 factors with Sig value < 0.01 . In general, users rated higher levels of threat in 8 factors of independence and assessed the higher levels of increase in 5 factors of independence than those of the auditor.

The study has possible practical and policy implications.

Firstly, the results of the study can inform policy makers, governments, and professional accounting bodies in emerging markets in countries that share similar economic, political, and cultural environment on how policies and frameworks related to PAI can be structured to ensure adequate regulation of the capital market. Specifically: The

regulator should issue documents clearly regulating the rotation of auditors in line with the regulations in the world, it may be five years. Regulators may also issue documents requiring publicly audited non-audit services and specific fee rates for each service to manage and adjust in necessary cases, ensuring healthy competition; or for public interest entities, when disclosing financial statements, the audit fee should be clearly stated in the notes to the financial statements. There should be specific regulations on the implementation of annual audits on the quality of financial statements audited by audit firms. Selection criteria may be based on: the audit period in a company more than 03 years; the audit firm provides both audit service and non-audit services;

Secondly, the study serves to enhance the awareness of users and auditors about the contextual factors surrounding the role of an auditor, in addition to the possible threats and enhancement factors that affect PAI. For audit firm, when selecting audit team members, a commitment must be made to ensure the auditor independence; it is necessary to develop a specific basis for the calculation and determination of fees in accordance with audit and non-audit services... For users of financial statements, consideration should be given when choosing an audit and non-audit service provider, if possible choose two different companies to implement these two services; regularly reviewing and changing auditing companies over time in accordance with the law to ensure independence and quality of auditing.

This study has several limitations. First, this study investigates the perceptions of the factors influencing PAI of five objects using financial reports. Other users, such as academics, financial analysts, economists, tax officials, policy makers ...are not covered in this study. Second, the samples were drawn only from institutions that were willing to take part. Consequently, the results might not be applicable to those that did not take part in the study. Third, data were collected using a survey questionnaire which may affect the reliability of the respondents' answers. So, researchs in the future should to contribute the linear regression for estimating the level of influence on the auditor independence.

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**Enhancing Auditee's Implementation of Audit Recommendations:
A Case of the State Audit of Vietnam**

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Abstract

The implementation of the State Audit's recommendations plays a vital role on determination of audit quality. However, it depends on many dimensions, such as: audited entities' attitudes, nature of the feasibility of recommendations and so on. The paper carries out a study on the implementation of audit recommendations, the practice of implementing the State Audit of Vietnam's recommendations, the causes of outstanding issues. On that basis, a number of solutions are proposed to improve the ability of the State Audit's recommendations being adopted

Keywords: *Auditing, Audit recommendations, State Audit.*

JEL codes: *M49*

1. Introduction

The implementation of the State Audit's recommendations is one of the contents related to the validity of audit activities and closely related to the quality of audit. The effectiveness of audit and the quality of audit depends largely on whether the conclusions and recommendations of the State Audit are implemented.

Over the past few years, The State Audit of Vietnam reported that the rate of implementation of financial recommendations was about 60% to 70% which means about 30% to 40% of the financial recommendation have not been implemented. In other words, audit recommendations are not thoroughly implemented by auditees. One of the reasons is that the examination, management and monitoring the State Audit's recommendation implementation done by the State Audit of Vietnam is still inadequate, especially with regard

to the remaining recommendations over the years. Currently, The State Audit of Vietnam only focuses on the implementation of the audit recommendations of the previous year and focus on financial recommendations.

On the academic side, in recent years, the issue of the effectiveness of the audit recommendations has received attention of many scholars around the world. However, this theoretical system is mainly applied to independent audit firms in auditing financial statements of enterprises.

Consequently, a study to properly recognize the theoretical and reasonable assessment of the practical situation of implementing audit recommendations as well as how to apply it effectively in The State Audit of Vietnam is still a real need.

2. Literature review on the effectiveness of the implementation of audit recommendations

The researches conducted on the topic of effectiveness of the audit recommendations can be summarized as follows:

Firstly, regarding to factors affecting the implementation of audit recommendations proposed by the state auditors: In a comprehensive research of Aikins, SK (2012), they have summarized several factors that affect on the implementation of audit recommendations including factors related to the auditor (the auditor's qualifications, the independence of auditors,...); factors related to audit quality control; factors related to audit techniques (auditing approach, monitoring of implementing audit recommendations); factors related to auditees (the confidence of auditee, the opportunity to revise the audit report of the auditees before issuing the official audit report).

Secondly, the relationship between audit recommendation implementation and audit quality: Some researches also indicate that audit quality in general and audit recommendations quality in detail plays an important role on ensuring an effectiveness of implementation of audit recommendations. However, audit quality is a concept without clear consensus (Kilgore et al., 2014; Knechel et al., 2012). It depends on different perceptions of stakeholders and specific contexts (Behn et al., 1997; Carcello et al., 1992; Kilgore et al., 2014, Knechel et al., 2012, Schroeder et al., 1986). On the other hand, researches of Aikins (2012), Alzeban & Swain (2015), Burton et al. (2012); Carslaw et al. Malik (2014), Matkin (2010), Modlin & Stewart (2014), Rice & Weber (2012), Sneed et al. (2015) also consider compliance and implementing audit recommendations is one factors reflecting audit quality of audit engagements.

Thirdly, the study on the auditee's satisfaction with auditors' recommendations also attracts several studies recently. Aikins (2012) has conducted a research about the relationship between audit quality and satisfaction characteristics. Aikins (2012) recognizes that the audited entity's assessment of the quality of an audit is based on the satisfaction of them on audit findings, and then it will affect the willingness of implementation of audit recommendations.

Fourthly, the knowledge and experience of auditors may affect the effectiveness of audit recommendations: Aikins (2012), Alzeban and Sawan (2015), Modlin & Stewart (2014) and Samelson et al. (2006) shown strong evidence that experience and knowledge of the auditor effects on the implementation of audit recommendations, for example, if auditors have expertise in the auditee's industry, they will be able to make more reasonable recommendations and thus increase the feasibility of implementing audit recommendations.

Fifthly, research on the implementation of audit recommendations in the public sector: The most recent studies in the field of public audit have shown evidence that there is a close relationship between the implementation of recommendations and audit efficiency, quality and satisfaction (Aikins, 2012, Alzeban & Sawan, 2015, Djati & Payamta, 2013). Aikins (2012) has supported that if audit recommendations are made for managers of local government agencies, they will have more chance to be implemented and then it will be an important step in achieving a high quality audit. Both Aikins (2012, 2013) and Alzeban & Sawan (2015) argue that the auditees will tend to adopt recommendations if they are clarified to be following up audited entity.

However, previous studies were mainly applied to independent auditing firms with auditing financial statements of enterprises. There is still lack of study that focuses deeply on theoretical knowledge and the rational assessment of the practical implementation of audit recommendations to propose measures to enhance the effectiveness of audit recommendation are really needed.

3. General theoretical framework on the implementation of audit recommendations proposed by State Audit

3.1. Recommendations of State Audit

The recommendation of State Audit is a compulsory suggestion of audit team based on audit findings that requests a organization and/or individual must consider and resolve according to their functions and tasks prescribed by laws. The proposing recommendations is an important part of the State Audit's functions and is a basic content of the audit report issued by the State Audit in order to contribute to restriction, prevention and remedy of errors in the management and use of state budget. It also contributes to eliminate and prevent the phenomenon of corruption, waste and inefficient use of public resources.

From the state management view, the State Audit's recommendations reflect view and position of the State Audit on audit results. As required by law, conclusions and recommendations of the State Audit must be implemented by an identified organization or an individual. In case, it is not implemented by any reason, it must be clearly reported to The State Audit of Vietnam. If the State Audit Office believes that the recommendation is still valid, it shall continue to request the organization or individual to implement recommendations or even propose the recommendation to a higher levels management.

3.2. Classification of audit recommendations of State Audit

The audit recommendations of State Audit are categorized in different ways depending on the purpose of the classification and the criteria used to classify them. According to the nature, the audit recommendations of State Audit include:

(i) Recommendations to adjust financial statements according to the audit results to ensure a true and fair view of the financial statements.

(ii) Recommendations to ensure a rational and effective management and use of public resources, in accordance with policies and regulations to reduce loss, waste of public resources.

(iii) Recommendations on the handling of responsibilities of collectives and individuals related to wrongful acts detected in order to promptly correct limitations and violations and overcome the consequences due to limitations, infringements caused in the management and use of state budget, money and property.

(iv) Recommendations for further investigation and handling in accordance with the law for cases showing signs of law violation but beyond the scope of functions and tasks of State Audit as prescribed by law.

(v) Recommendations on mechanisms, policies and regimes of financial and economic management. Strengthening the management and direction of the functional agencies to ensure the efficiency and effectiveness of the management of state budget, money and property.

3.3. Managing and monitoring the implementation of audit recommendations

Managing and monitoring the implementation of audit recommendations of State Audit is a process of orienting and organizing the use of resources to ensure the audit recommendations of the State Audit will be implemented efficiently. Therefore, the management of the implementation of audit recommendations will include all steps of consolidation, monitoring, inspection, processing and disclosure results of implementing audit recommendations.

In principle, to manage and monitor the implementation of audit recommendations, the State Audit must plan and organize an inspection to auditees to make sure that all audit recommendations has been implemented by auditees.

An inspection of implementing audit conclusions and recommendations might take by one of the following forms: (i) Request auditees to report in writing on the results of implementation of audit conclusions and recommendations; (ii) Organize an visiting inspection of implementing audit conclusions and recommendations at the office of auditees and other relevant organizations or agencies.

4. Research Methodology

The author combines both information sources: secondary information and primary information, as follows:

Firstly, the collection of primary information: Primary information will be collected through conducting surveys for managers in the State Audit of Vietnam, state auditors and managers of auditees in public sectors. Specifically, the author conducted in-depth interviews with 34 auditors and managers in the auditees to find out about the status of

implementing audit recommendations and the causes of the shortcomings in implementing audit recommendations of the State Audit.

Secondly, the collection of secondary information: The author collects articles, research works, and presentations by scientists, managers, and researchers on implementing audit recommendations of the State Audit. This resource is collected from: the world's leading electronic data pages on science such as ScienceDirect, Proquest; materials from the mass media: newspapers, magazines, internet,... and especially from the State Audit of Vietnam (including legal documents and public annual summary reports of the State Audit of Vietnam).

On the basis of collected information, the author shall synthesize and evaluate the actual situation of managing and monitoring the implementation of audit recommendations of the State Audit of Vietnam, determining the causes of existing problems.

5. Research results

Current situation of managing and monitoring the implementation of audit recommendations of the State Audit of Vietnam is presented in the following sections:

5.1. Some primary results of implementing the State Audit's recommendations in recent years

According to the annual audit report of The State Audit (2017), the results of implementing audit recommendations on the fiscal year 2015 shows that most of audit recommendations have been strictly implemented, of which:

The number of financial recommendations have been implemented in 2016 is VND 30,082 billion, accounting for 78.2% of the total recommendations (in 2014, this figure is 64.3%, in 2015, it is 75.6%), of which the number of recommendations have been implemented that increase the state budget's revenues and reduce the state budget's expenditure is about VND 13,477 billion, accounting for 75%, specifically:

Table 1. The State Audit of Vietnam's financial recommendations implemented in 2016

<i>Unit: Billion VND</i>				
No.	Contents	Recommended figure	Implemented figure	Percentage of implementation (%)
(1)	(2)	(3)	(4)	(5)=(4)/(3)
1	Increase the state budget's revenues (taxes, fees ...)	4,248.3	2,434.4	57.3
2	Other state budget revenues	8,341.3	7,833.7	93.9
3	Reduce regular expenditure	1,558.4	979.2	62.8
4	Reduce in construction investment	3,834.2	2,230.2	58.2
5	Settlement of outstanding debts, loan	9,339.8	7,380.4	79.0
6	Accounts payable, refunded and managed through the state budget	11,128.4	9,224.3	82.9
Total		38,450.4	30,082.2	78.2

(Source: The State Audit of Vietnam, 2017)

Results of implementing audit recommendations related to financial correction have had positive changes. Specifically, the provinces' local budget adjusted VND 6,187 billion (in total of VND 9,945 billion), accounting for 62.2%; the ministries' central budget adjusted VND 701 billion (in total of VND 841 billion), accounting for 83.4%; State-owned enterprises and financial-banking institutions adjusted VND 12,033 billion (in total of VND 12,376 billion), accounting for 97.2%; Capital construction projects and national programs adjusted VND 10,161 billion (in total of VND 13,741 billion), accounting for 73.9%; Defense, security and party organizations adjusted VND 746 billion (in total of VND 876 billion recommended), accounting for 85.1%.

Regarding the amendment and supplementation of mechanisms and policies: There are 40 documents (in total of 150 documents recommended) which have been canceled, amended or supplemented by the Government, ministries, branches and localities according to the recommendations of the State Audit (including 01 Decree, 05 circulars, 02 resolutions, 14 decisions, 18 other documents). Other recommendations are continue being considered a revision.

In order to achieve the results in 2017, the State Audit has made many drastic measures to improve the effectiveness of the audit recommendations, for example, cooperating with the Ministry of Finance, the General Department of Taxation and other agencies to prompt the implementation of audit recommendations; issuing documents and have directly meeting with the auditee managers to check for the implementation of audit recommendations; promoting communication and publicizing audit recommendations to media to oversight.

However, as reported, there is still 22% recommendations of financial and several other recommendations are not implemented. Base on interviewing with 34 auditors and auditee's managers, the main reasons are that the recommendations have not been implemented may summarized and classified as:

- (i) The auditees face with financial difficulties and have not yet been allocated sources for state budget payment;
- (ii) The auditee fails to perform;
- (iii) The auditee is dissolved;
- (iv) Waiting for comments from relevant ministries;
- (v) The auditee has not provided adequate evidence to prove that the implementation of the recommendations;
- (vi) Some investment projects are in the process of being implemented or have been completed but have not yet been approved for settlement;
- (vii) Some recommendations are still unclear, not sufficient audit evidence, so it is difficult for the auditees to implement;
- (viii) There are no sanctions to deal with cases where the auditees have not seriously complied with the State Audit's recommendations.

5.2. Current status of organizing inspection of implementing audit recommendations

The survey shows that specialized and regional State Audit offices are in change in conducting inspections of the implementation of audit recommendations. The inspecting results will be collected, synthesized and analyzed in order to present on the annual audit report. However, the report of implementation of audit recommendations only focus on the immediately previous year and does not show any evidence about the implementation of audit recommendations that made from years before the previous year.

Moreover, there are some shortcomings in the implementation of audit recommendations. Specifically, a number of specialized and regional State Audit offices have not paid much attention to information collection, analysis and assessment of the reporting situation, the implementation of the audit recommendations when the inspection plan is drawn up, which leads to the selection of inspected units does not meet the principle, selection criteria according to regulations. Regarding the time of inspection, when planning inspection, many specialized and regional State Audit offices arranged inspection time not in accordance with the nature, number of recommendations, subjects recommended inspection, which leads to not enough time to collect, review and verify the evidence, identify the causes of the on-going, unresolved (objective, subjective) recommendations. Currently, the report of implementation of audit recommendations is mainly based on auditee's report.

5.3. Current situation in coordination with relevant agencies in the process of managing and monitoring the implementation of audit recommendations

As regulated by the State Audit Law, the Standing People's Council and People's Committees of provinces and cities have responsibility to direct the implementation of recommendations that related to their functions and tasks. They also discuss with the State Audit on issues which still remain unconfirmed. Otherwise, they shall direct the agencies and units in the localities to concentrate on organizing the implementation of the State Audit's recommendations.

Besides, implementing the coordination agreement between the State Audit and the Ministry of Finance, the Ministry of Finance shall coordinate with the State Audit in reviewing and classifying the recommendations of the State Audit before the State Audit sums up and reports the results of implementing audit recommendations to the National Assembly.

According to the report of the National Assembly's Finance and Budget Committee, the Ministry of Finance has sent a document to ministries, central and local agencies to strictly implement the recommendations of the State Audit. The Ministry of Finance sets deadlines for reporting and sanctions to punish agencies or units who fail to send reports on time. However, according to the monitoring results of the Finance and Budget Committee, the coordination between the State Audit and related agencies (the Finance and Budget Committee, the Ministry of Finance, the State Treasury...) is still not efficient enough. The coordination between the auditees and the State Audit in the process of implementing the audit recommendations is not really tight, in which there are some reasonable explanations

of the auditees but are not considered by the State Audit (due to the unlawfulness), resulting in the low level of cooperation of the auditees, affecting the quality and results of implementing the recommendations proposed by the State Audit.

6. Research's conclusion and recommendations

In the coming time, in order to enhance the effectiveness of the implementation of audit recommendations proposed by the State Audit of Vietnam, we should implement the following measures:

Firstly, it is necessary to improve the quality of audit activities to ensure that the recommendations are appropriate and feasible. Audit quality not only maintains the prestige of the State Audit, but also ensures the effectiveness of auditing through the implementation of its recommendations. Therefore, the State Audit of Vietnam should implement and control the quality of audits in specialized and regional state audits in order to eliminate inappropriate, general, unrealistic recommendations. Periodically, the State Audit of Vietnam should have a department to review the recommendations and reject the inappropriate ones, while actively monitoring the recommendations that are highly feasible but not yet implemented. This is also a measure to minimize the risk in the audit.

Secondly, it is necessary to intensify the monitoring and reminding the implementation of auditing recommendations: the General Affairs Division of the specialized and regional State Audit offices should intensify the monitoring, reminding and synthesize reports on the implementation of audit recommendations; they should advise the Directors of Department of the specialized and regional State Audit offices to solve problems arising in the implementation of audit recommendations and to answer any complaint of the auditees. This department will be responsible for reminding periodically and reminding immediately after the deadline for reporting the implementation of audit recommendations at the request of the State Audit in the audit report. The method of reminding also needs to be more diversified, such as: in writing, through the implementation of the audit recommendations, through auditing activities,... To implement this task proactively, the Auditor General may authorize the Directors of Departments in the specialized and regional State Audit offices to sign official dispatches to remind auditees of implementing audit recommendations within the assigned scope. The specialized divisions of the specialized and regional state audit offices should actively review unimplemented audit recommendations and advise the managers of the State Audit on timely response of the auditees' questions to unimplemented recommendations. The reason is that the auditees have not yet agreed with the recommendations of the State Audit. These specialized divisions are responsibility for reviewing and reporting to the managers of the State Audit all audit recommendations which cannot be implemented and proposing solutions.

Thirdly, it is necessary to strengthen the coordination between the State Audit and functional agencies: If there is close coordination between the State Audit and other relevant agencies in the process of inspecting implementation of the audit conclusions and recommendations, this will help the audit recommendations will be implemented fully and

seriously. Many of the audit recommendations are related to macro-financial management and therefore it needs to have the coordination of many authorities. For example, the recommendation on the improvement of the management mechanism requires involving many policy-making agencies and the need for political determination to be implemented. So, if there is no co-ordination, the auditees will not be able to implement these recommendations. For example, in the audit of local government, the audit team recommends that the local authorities improve the land price management mechanism for land use projects which generate income from land lease. This recommendation requires the coordination of many local branches and the support from the central government to be implemented. Even in some cases, the State Audit should hold conferences with local or central authorities to discuss how to implement the conclusions and recommendations.

Fourthly, it is necessary to strengthen the propaganda and dissemination of law so that agencies, organizations and individuals understand the law and strengthen the law enforcement. In fact, over the years, many auditees have not fully understood the provisions of law as well as the sanctions for implementing the State Audit's conclusions and recommendations. As a result, the dissemination of laws will help the auditees better understand the implementation of audit conclusions and recommendations. Propaganda could be done in many forms, in which each auditor must be a communicator. The process of auditing should show the auditees any errors found, and advise them the manner in which they should do and specify punishing sanctions if the auditee fails to implement the audit recommendations.

In conclusion, the implementation of the State Audit's recommendations plays an important role on determination of audit quality. Therefore, Vietnam should implement some above recommendations to improve the ability of the State Audit's recommendations being adopted.

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**Teaching Big Data for Accounting and Auditing Students
in Vietnam Universities**

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Abstract

Industrial revolution 4.0 has changed every aspects of the economy. In this study, the impacts of big data, one of the main industrial revolution 4.0 characteristics, on accounting and auditing activities will be examined. Big Data has become a tool to help accountants practice their careers with a more effective approach than the traditional tools. It has also created challenges for accountants with data asset valuation. This study also points out that accounting and auditing students should have big data knowledge and data analytic skills. Hence Big Data topics should be embedded in existing courses across accounting curricula and Vietnamese universities need to change their educational programs in order to adapt the employers' demand.

Keywords: *Accounting curriculum, Big data, Data analytics*

1. Introduction

Industrial revolution 4.0 is going to bring about great changes in all fields and sectors, including accounting and auditing. According to Islam (2017), the first change in auditing and accounting is the introduction of sophisticated technologies and artificial intelligence that will be increasingly applied in accounting and auditing. These technologies not only improve the efficiency of existing accounting operations but can even replace traditional approaches. Intelligent software systems (including cloud computing) will support the use of outsourced services (including outsourcing services abroad). Furthermore, the use of social media through smart technology will improve cooperation between owners and the wider community. According to a study by ACCA published in 2016, accounting practice

will be reshaped by the trend of digital technology and the impact of digital technology on business. Intelligent software and systems will replace manual accounting and accounting, and these software and systems will automate the processing of accounting records. complex programming. Thus, an accountant will need to acquire knowledge of new models in business, transporting, and manufacturing. Even accountants must become experts in the use of new technologies.

One of the major contents of the Industrial Revolution 4.0 is Big Data. Big Data is defined as a term used to refer to a very large set of data and is so complex that traditional data processing tools and applications cannot handle. The size of Big Data is increasing day by day, and so far it can be in the tens of terabytes to many petabytes for just one dataset.

According to Bholat (2015), Big Data can be defined as data having one or more of the following characteristics:

- The data is large, as they are usually reported on very detailed bases, for example the data set of each loan, of each securities account.

- These data are constantly moving, because these data are updated regularly, collected and analyzed in real-time, meaning that they are analyzed at the time of the data generation.

- These data differ in quality, meaning they may not be numbers, such as text or video, but may also be extracted from new sources such as social media, Internet search history or biometric sensor.

Big Data contains a lot of valuable information that, if extracted successfully, it will help a lot for business, scientific research, anticipation of emerging diseases and even real-time traffic conditions, ... In the area of accounting, auditing, large data can be used in decision making, risk management, and data valuation. In this study, the effects of large data on accounting activity will be analyzed, thus indicating new requirements for training and research in the accounting field.

2. Impacts of Big Data on accounting and auditing

First of all, the use of big data creates new requirements in accounting for company's assets. According to ACCA (2013), Big Data is not just a business tool, used as a purely competitive advantage, but has become a business model. Today's profits are being built on large data. Internet companies such as Google are pioneers in making money from Big Data, and many other companies, working in many other fields, are following this trend. Telefonica has recently built a division called Dynamic Insights. This department uses the company's corporate data repository to create new services and revenue streams. ACCA recognizes that in the next 10 years, data will become an important source of wealth for the company, so it must be seen as a business asset, to be valued and to account. In the Dynamic Market study (2012), 20% of large companies classified data as an asset in their balance sheet, and with large companies with more than 10,000 employees, this rate is 30%. Consequently, this poses a requirement for accountants to be able to value the data.

Determining the value of data assets is a very difficult task. Tangible assets are increasingly important in the knowledge economy, but they tend to be hidden in reports and governance systems. The first challenge in pricing data is the issue of depreciation. The rapid increase in the value of old data quickly becomes obsolete, losing value as soon as new data becomes available. Another problem is that the value of the data varies with relevancy, and the relevance varies with the user. This makes it difficult to measure objectively the value of a dataset because it may be less important to one group, but it is worthwhile to another.

Secondly, Big Data itself also becomes a tool to help accountants practice their careers with a more effective approach than the traditional tools. There is a huge opportunity in accountancy for using big data for real-time impacts and financial predictions. Accountants can incorporate big data into the financial performance measures they regularly provide to businesses. You could start by asking clients for their website's analytics reports to develop deeper insights into the business. Accountants have access to an unprecedented amount of big data and there is an opportunity to use it for financial advantage. It can be used to increase operating efficiencies, assess risks and identify advantages and weaknesses through analysis. Rezaee and Wang (2017) have shown the influence of big data on accounting and auditing on financial accounting, management accounting, and auditing. According to two authors, there have been two main trends in the application of big data into financial accounting. Firstly, various data sources are being integrated into the accounting information systems such as text, video, audio data, customer purchase activity, Url tracking. Secondly, regarding the reasonable valuation, the emergence of data service companies that collect and evaluate data from different sources can minimize subjective assumptions in estimating and calculating the fair value of assets and capital.

According to ACCA (2013), Big data also has the potential to improve the performance management system. For example, the finance and accounting department of a manufacturing company can obtain standard data from a financial services provider and compare the company's performance below the average. Companies can monitor employee phone calls, emails and other office activities such as web usage and clicks. By applying big data analysis techniques, traditional management can be transformed through the deployment of comprehensive monitoring and control systems. For example, using big data can help identify new motivational approaches and analyze the relationship between good management performance and previously unverified variables. For example, corporates can measure employee's enthusiasm by voice and phone conversations made on the company's device. They can also measure productivity by the number of emails sent by the manager and measure the customers' satisfaction by the customer's body language.

In the area of auditing, auditors need to understand the big data to be able to track how their customers manage their data. With the new data analysis tools available, accountants can use large data to reduce auditing costs and increase profitability. For example, to verify the database with independent trading partners, the accountant can perform automatic validation instead of manual verification. Confirmation.com provides an example of an automated audit certification. The company provides safe audit

certification services to over 14,000 accounting firms, 100,000 auditors and 700,000 organizations. With large data, auditors can analyze both structured and unstructured data to identify potential abnormal transactions (eg, illegal disbursements), behavioral patterns (for example, payment split to overcome transaction limits), and trends (such as increased fraud transactions before a long holiday). As a result of the use of automatic data collection and analysis techniques to determine the error, the auditor may change the responsibility for error detection in the data to assess what error is worth investigating more.

The ACCA report (2013) also shows that big data can be used in decision making and risk management. The increase in volume of both structured and unstructured information, combined with more sophisticated analytical tools, has facilitated greater data-driven decision making. Large data usage will aid in decision making in real time. The financial and accounting department of an enterprise can improve data flow both within the enterprise and outside organizations, saving costs, time and efficiency. Accountants and financial professionals can help maximize the value of the data by identifying the points at which the data can be shared most effectively with internal and external stakeholders. The timely exchange of data between departments can improve consistency and clarity and avoid situations where decision makers receive different answers to the same question or analyze the same sentence. asked twice. In addition, large data can be used in risk management with the use of data sources used in risk prediction is expanded, risk is determined in real time. From analyzing these impacts, ACCA also points out that big data is an opportunity for accounting and finance to play a more strategic role and help shape the future. Trained to collect and analyze data (structured and unstructured), the accounting and finance department can provide critical advice to management and business leaders. For example, accountants can use big data to find behavioral patterns in consumers and market. These patterns can help businesses build analytic model that, in turn, help them identify investment opportunities and generate higher profit margins. Accountants have access to an unprecedented amount of big data and there is an opportunity to use it for financial advantage. It can be used to increase operating efficiencies, assess risks and identify advantages and weaknesses through analysis. Accountants can use big data analysis to position themselves as strategic business partners instead of their more traditional accounting role. Finance departments are now using predictive analytics tools together with customer data to make forecasts. The IT department has traditionally managed big data; however, the marketing department is moving to position itself as the natural home of big data. Accountancy and finance professionals can bridge the gap between IT, marketing and the business that needs insight to maximize big data opportunities.

Table 1: Opportunities and challenges Big Data presents the accountancy and finance profession

Area	Opportunity	Challenge
1. Valuation of data assets	<p>Helping companies value their data assets through the development of robust valuation methodologies</p> <p>Increasing the value of data through stewardship and quality control</p>	<p>Big data can quickly ‘decay’ in value as new data becomes available</p> <p>The value of data varies according to its use</p> <p>Uncertainty about future developments in regulation, global governance and privacy rights and what they might mean for data value</p>
2. Use of big data in decision making	<p>Using big data to offer more specialized decision-making support in real time</p> <p>Working in partnership with other departments to calculate the points at which big data can most usefully be shared with internal and external stakeholders</p>	<p>Self-service and automation could erode the need for standard internal reporting</p> <p>Cultural barriers might obstruct data sharing between silos and across organisational boundaries</p>
3. Use of big data in the management of risk	<p>Expanding the data resources used in risk forecasting to see the bigger picture</p> <p>Identifying risks in real-time for fraud detection and forensic accounting</p> <p>Using predictive analytics to test the risk of longer-term investment opportunities in new markets and products</p>	<p>Ensuring that correlation is not confused with causation when using diverse data sources and big data analytics to identify risks</p> <p>Predictive analytic techniques will mean changes to budgeting and return on investment calculations</p> <p>Finding ways to factor failure-based learning from rapid experimentation techniques into processes, budgets and capital allocation</p>

Source: ACCA (2013)

3. Needs for changes in accounting and auditing education

3.1. Knowledge and skills related to big data that accounting students should have

Under the influence of the industrial revolution 4.0, accounting students increasingly need to be equipped with the knowledge of digital technology such as cloud computing and the use of big data. The future of the accounting profession depends on embracing new forms

of data and revising accounting standards and practices to embrace both structured and unstructured data. Employers are seeking students with big data and analytics skill. As reported by ACCA (2016), knowledge of digital technology is an important capacity however this is an area where accountants also have many skills shortage. Especially with big data being increasingly applied in accounting and auditing activities, students in the field of accounting and auditing must be equipped with knowledge of data mining and new appropriate data analysis methods. First of all, students need the skill in data mining. Although the volume of information is extremely large, bias and representativeness persist in the data collected. This may reduce the quality of the data. For example, a huge amount of information is collected through social networks. However, this information only focuses on reflecting the characteristics of individuals or organizations that use social networks, while those who do not use social networking may have different characteristics. Therefore, data collected through social networks may be biased and non-representative. This will require additional information to adjust the statistics, and include this additional information in the overall data section to ensure the quality of the data source. Also from exploited data, there must be appropriate treatment methods. For example, statistical correction should still be carried out because information can be posted or repeated many times. Especially when an event occurs, the volume of information related to that event will be huge. Increasing this amount of information does not necessarily indicate a change in the demand for the economy. For example, when the emissions scandal in the auto industry happens, people will search for more car-related information. This comes from the anxiety and the need to observe the impact of this scandal on the auto market, and does not mean that people are increasing their demand for a car.

3.2. Teaching Big data in the accounting curriculum

In order to meet the demand for change in training, the universities need to update their training programs in addition to new ones. Some emerging areas under the influence of the industrial revolution 4.0 that students in the field of accounting and auditing should be equipped with include:

- Developing intelligent accounting system
- The emergence of new models, needs and business services
- Social media and its role in business and in information disclosure
- Internet access - cost and connection quality
- Applying cloud computing
- Data mining and new analytical methods
- Digital Publishing (Annual Report)
- New ways to find new capital
- Using technology to improve the quality of financial statements

At the present time, very few accounting and auditing institutes in Vietnam develop curricula for accounting students in line with the future needs of the 4.0 technology revolution in general and the need for knowledge of big data in particular. Therefore, Vietnamese universities may adopt big data accounting programs of foreign educational institutions and universities in order to apply to their current accounting and auditing curriculum.

For examples, PricewaterhouseCoopers (2015) has developed recommendations for curriculum changes and include the following skills for undergraduate programs to learn big data accounting:

- Learning of legacy technologies (Microsoft Excel and Access)
- Understanding of structured and unstructured databases (SQL, MongoDB, Hadoop)
- Obtaining and cleaning data
- Introduction to data visualization (Tableau, SpotFire, Qlikview)
- Univariate and multivariate regression, machine learning, and predictive tools
- Early coverage of programming languages such as Python, Java, or R.

The following skills are recommended for graduate programs:

- Advanced statistics
- Text mining, HTML scraping
- Solving optimization problems
- Data analytics internships, allowing students to solve real business issues.

Gamage (2016) has also summarized Big Data topics that can be included within existing courses, as listed in table 2

Table 2: Big Data topics that can be included within existing courses

Courses	Topics
Taxation	Indirect tax and Big Data, tax value and non- tax value form data that is collected in the tax function, Visualize accounting data
Forensic Accounting	Big Data, Benford's Law, Financial Analytics, Data Analytics for Fraud, Anomaly Detection in Forensics and Security
Auditing and Assurance	Data Analytics in auditing, Mine new sources of data, Data integrity, Privacy, Safeguards, Cybersecurity, Design and evaluate IS controls, Manage IS risks and compliance, Overseeing fraud risk assessment
Accounting Information Systems	Business intelligence, Enterprise analytics Information search and retrieval, Data mining, familiarity with

Courses	Topics
	languages such as XBRL, specialized software/reporting systems with decision support, ERP systems, Cybercrime, Data management issues
Management Accounting	Application of Big Data to competitor analysis, Big Data as a strategic resource
Business Information Systems	Advanced Databases, Information Retrieval, Advanced Data Mining Applications, Predictive Analytics for Decision Making, Big Data information management
Business Statistics	Data gathering techniques, Data exploration, Data summarisation, Data analysis, Data visualization, Communication of analytical findings

Source: Gamage (2016)

Universities in Vietnam might combine managerial accounting, finance, or information systems tracks, which allows accounting students to specialize in another area of interest. Data analytics could be incorporated into the information systems track or be a separate track of its own. The accounting department will have not the resources to teach these subjects. Consequently, the accounting department should coordinate with other departments, such as banking and finance department, information technology department, and so on. The Macquarire univesrsity (Australia) have suggested three noticable tips for teaching big data in accouting departments:

Tools focus where students learn how to extract data using machine learning techniques and to conduct automated analysis using a new generation of tools beyond the spreadsheet, including (but not limited to) Microsoft Power BI, Google Spreadsheet and Fusion Tables. Text analysis tools help pinpoint emotional signals from word patterns and phrases to determine any hint of insider trading. By providing access to different tools, students can determine which are best suited for controls testing or visualising fraudulent claims.

Non-financial large data sets are part of essential weaponry to develop big data accounting skills. Such data includes website data from Google Analytics or even video footage from a drone conducting an inventory of goods in one space. The data sets need not be big in terms of millions of rows of data - thousands of rows are adequate to teach the concepts.

Building predictive data analytic skills through hands-on work, with tools and data to not only solve problems but explore large data sets to check first-hand for any useful discoveries amongst the data. For example, using big data instead of trend historical data and looking at each customer to predict whether the customer will pay or not is an ideal use case for introducing accounting students to predictive analytics.

Vietnamese universities might consider these suggestions when they built up their own big data and accounting curriculum.

4. Conclusions

Big data has a significant impact on accounting and auditing. By using non-traditional data such as URL tracking, body language, transaction history, and real-time data makes accounting operations more accurate and effective than the traditional approaches. Furthermore, big data also creates new requirements in accounting, specifically setting the requirements for data asset valuation. This makes the accountants and auditors need to be equipped with the knowledge of big data and data analysis skills. Currently, accounting training programs in Vietnamese universities do not have knowledge and skills related to big data. Consequently, Vietnamese universities and educational institutions need to update their curricula so that graduates can meet the needs of employers. Further research might be conducted to construct the accounting and auditing curricula with big data knowledge and data analytic skill included that appropriate with Vietnam markets.

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Analyzing Audit Service Quality Using SERVPERF Model

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Abstract

Vietnam's economy maintains strong growth. The stock market is playing important role in the development of attracting capital channels for economic organizations. The quality of financial information published by enterprises can be seen as one of key factors concerned by investors and other stakeholders. Independent audit firms can contribute to the quality improvement of financial information by providing financial statements audit service that enables interested users to access the reliable and reliable financial information. However, financial statements audit service quality in Vietnam is still a controversial matters. Therefore, This research arms to provide readers with an objective view on current financial statement audit service quality in Vietnam. The researcher collected data by using questionnaires and applied the SERVPERF model to assess financial statement audit service quality.

Keywords: *Audit service quality, Financial statement audit, SERPERF model*

1. Introduction

After more than 30 years of reform since the Sixth Party Congress in 1986, Vietnam has emerged from the economic crisis, achieving rapid growth, strengthened its infrastructure and created a premise for the new stage of development, industrialization and modernization. The country will soon become a modernly industrialized country by 2020. These are two of the five achievements Vietnam has achieved over 30 years of innovation. Together with the country's general development achievements, audit was officially launched in 1991 - marking a solid step for the development of the market economy in Vietnam. The establishment of audit in Vietnam is an inevitable requirement of the market economy. As part of the market economy, audit has been formed and developed over the

past 25 years, which is not only an indispensable and objective demand, but also an essential component of the system of macroeconomic management tools for finance – economy in general. Independent audit is the earliest established audit organization in Vietnam. According to the former Independent Audit Development Strategy, there had been expected to establish 100 audit firms; but in 2010 there were 151 audit firms (over 50%) including 141 limited companies, 5 100% foreign invested audit firms, 2 foreign invested audit firms and 4 partnerships. Currently, according to data reported by the Ministry of Finance - the managing body of independent audit activities in Vietnam, there are over 160 audit firms and nearly 2,000 certified auditors. By service quality, the status of independent audit firms is enhanced by the increasing diversity of customers and the society's interest in independent audit.

2. Results and Discussion

The researcher conducted a survey on audit service quality by submitting questionnaires via the internet (Google docs toolbar) and sending questionnaires directly to 200 audit customers. Survey results are analyzed as follows:

Table 1: Questionnaire distribution results

Content	No. of questionnaires	No. of respondents	No. of valid answer sheets	Response Rate
Internet	150	77	77	51.3%
Direct distribution	50	35	35	70%
Total	200	112	112	56%

(Source: Synthesis of the Author)

With 112 respondents divided by type of enterprises using financial statement audit service, and main purpose when using the audited financial statements and type of audit firm from Table 2 to Table 4, specifically:

Table 2: Types of enterprises using financial statement audit service

Type of enterprises	No. of answer sheets	Ratio %
Listed enterprises	30	26.79
Unlisted state-owned enterprises	25	22.32
Unlisted private company	40	35.71
Foreign invested company	17	15.18
Total	112	100.00

(Source: Synthesis of the Author)

Table 3: Sample structure by main purpose when using the audited financial statements

Main purpose of use	No. of answer sheets	Ratio %
Mandatory requirements of the state	65	58.04
Completion for tax inspection purposes	20	17.86
Completion for administration purposes	5	4.46
Completion of tender documents	17	15.18
Others	5	4.46
Total	112	100.00

(Source: Synthesis of the Author)

Table 4: Sample structure by type of audit firm providing audit service

Type of audit firm	No. of answer sheets	Ratio %
Big4 Audit Firms	15	13.39
Non-Big4 Audit Firms	97	86.61
Total	112	100.00

(Source: Synthesis of the Author)

Thus, the author believes that the above sample is appropriate.

In assessing financial statement audit service, the researcher used SERVPERF model revised by Cronin and Taylor (1992) (adapted from SERVQUAL model created by Parasuraman, 1988) consisting of five variables: reliability, responsiveness, assurance, empathy, tangibles through 22 observations. Customers will evaluate on a 5-point Likert scale for each variable ranging from 1 referring to totally disagree to 5 referring to totally agree. The following is an assessment of financial statement audit service quality.

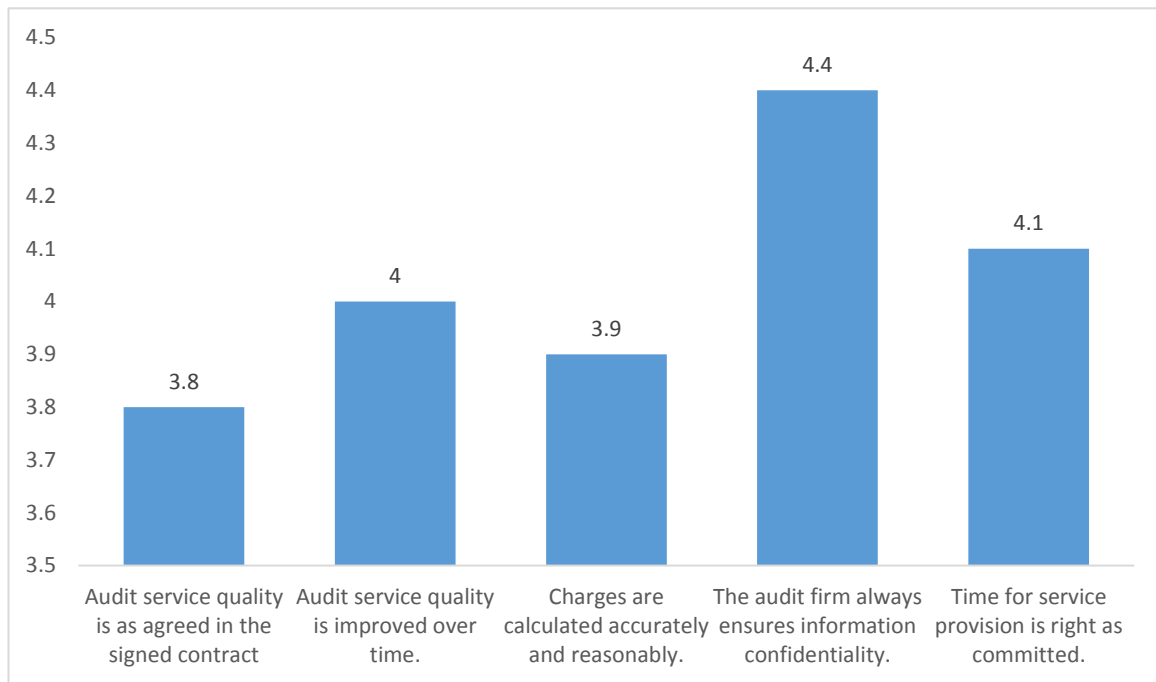
• ***Firstly, Reliability of financial statement audit service quality***

Reliability of financial statement audit service provided by independent auditors is reflected in five observable variables:

- Audit service quality is as agreed in the signed contract
- Audit service quality is improved over time.
- Audit fee is calculated accurately and reasonably.
- The audit firm always ensures information confidentiality.
- Time for service provision is right as committed.

The results are shown in the following table (Figure 1)

Figure 1: Evaluating Reliability of financial statement audit service quality



(Source: Synthesis of the Author)

Throughout the survey, customers were satisfied with Reliability of service quality with mean of 3.8 to 4.4. In particular, customers appreciated that audit firms always ensure the confidentiality of information (highest mean at 4.4). However, customers did not very agree with financial statement audit service as per contractual commitment (lowest mean at 3.8). This partly reflects the current reality of financial statement audit service. As the development of financial statement audit service in the country now only complying with commitments stated in contracts. There are just some big companies such as BIG FOUR paying attention to improve service quality towards the direction of global integration. This will be a great barrier to Vietnam's deep integration in the future.

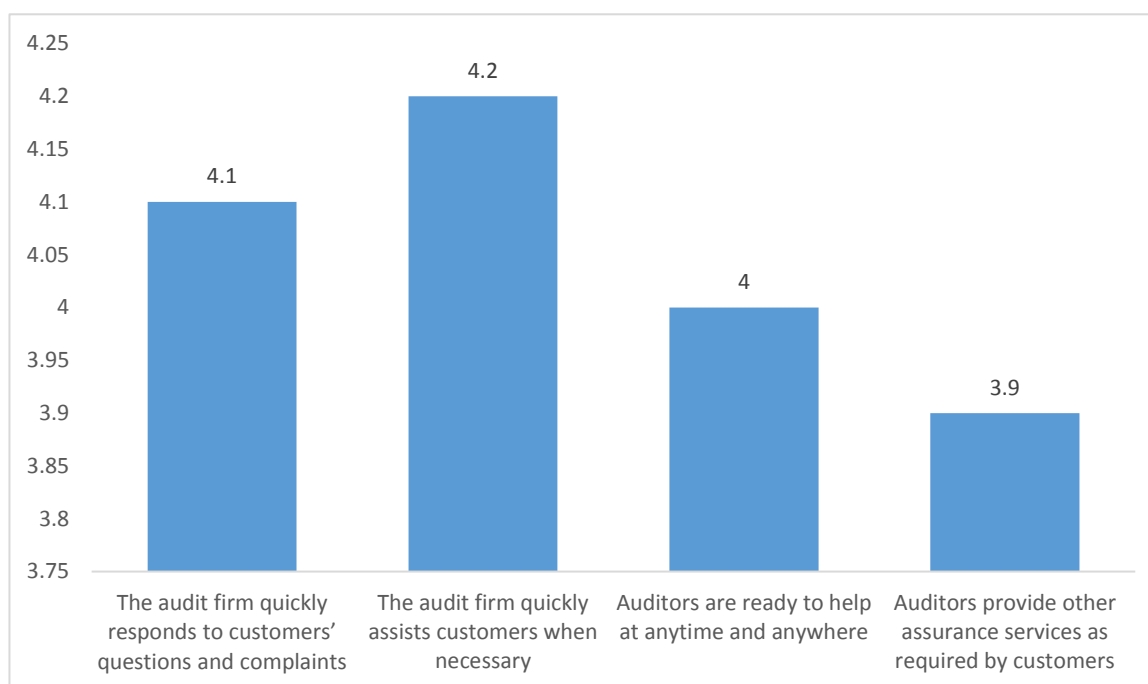
• ***Secondly, Responsiveness of financial statement audit service quality***

The level of Responsiveness of financial statement audit service provided by independent auditors is reflected in four observable variables:

- The audit firm quickly responds to customers' questions and complaints
- The audit firm quickly assists customers when necessary
- Auditors are ready to help at anytime and anywhere
- Auditors provide other assurance services as required by customers

The results are shown in the following table (Figure 2)

Figure 2: Evaluating Responsiveness of financial statement audit service quality



(Source: Synthesis of the Author)

Throughout the survey, customers were satisfied with Responsiveness of financial statement audit service with means of 3.9 to 4.2. In particular, customers believed that variable: 'The audit firm quickly responds to customers' questions and complaints' achieves the highest mean (4.2). This totally meets with professional behaviors of audit service as well as the attitudes and responsibilities of audit firms and auditors. However, customers did not very agree that that auditors provide other assurance services (mean of 3.9). This will also greatly affect the growth and development of financial statement audit service. Audit firms should consider increasing other assurance services such as corporate governance, information technology, human resources, etc. through a team of professional, diverse and dynamic employees.

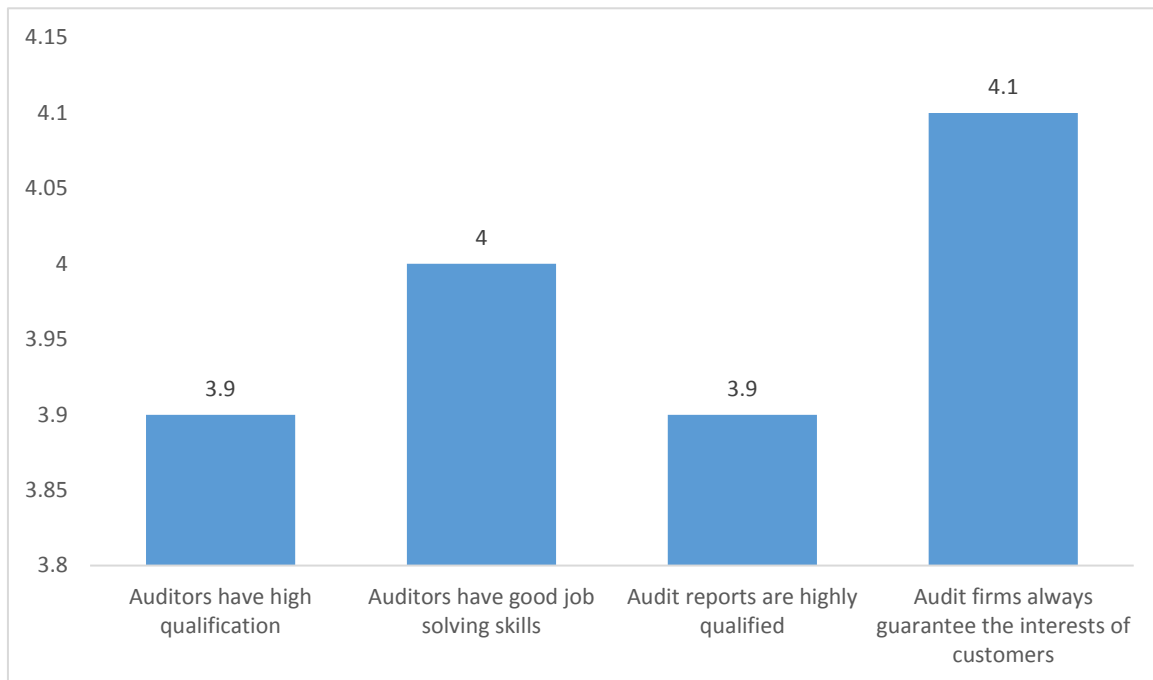
- ***Thirdly, Assurance of financial statement audit service quality***

The level of Assurance of financial statement audit service provided by independent auditors is reflected in four observable variables:

- Auditors have high qualification
- Auditors have good job solving skills
- Audit reports are highly qualified
- Audit firms always guarantee the interests of customers

The results are shown in the following table (Figure 3)

Figure 3: Evaluating Assurance of financial statement audit service quality



(Source: Synthesis of the Author)

Throughout the survey, customers were satisfied with the Assurance of financial statement audit service with means of 3.9 to 4.3. In terms of the factors affecting the Assurance of financial statement audit service, customers had the lowest appreciation towards the qualification of auditors and the quality of audit reports (mean of 3.9). Financial statement audit service is greatly affected by the qualification of auditors. This can be seen by evaluating audit service quality through previous factors such as low appreciation towards audit service quality as committed in contracts. In addition, customers also lowly appreciate the ability auditors in providing other assurance services, etc.

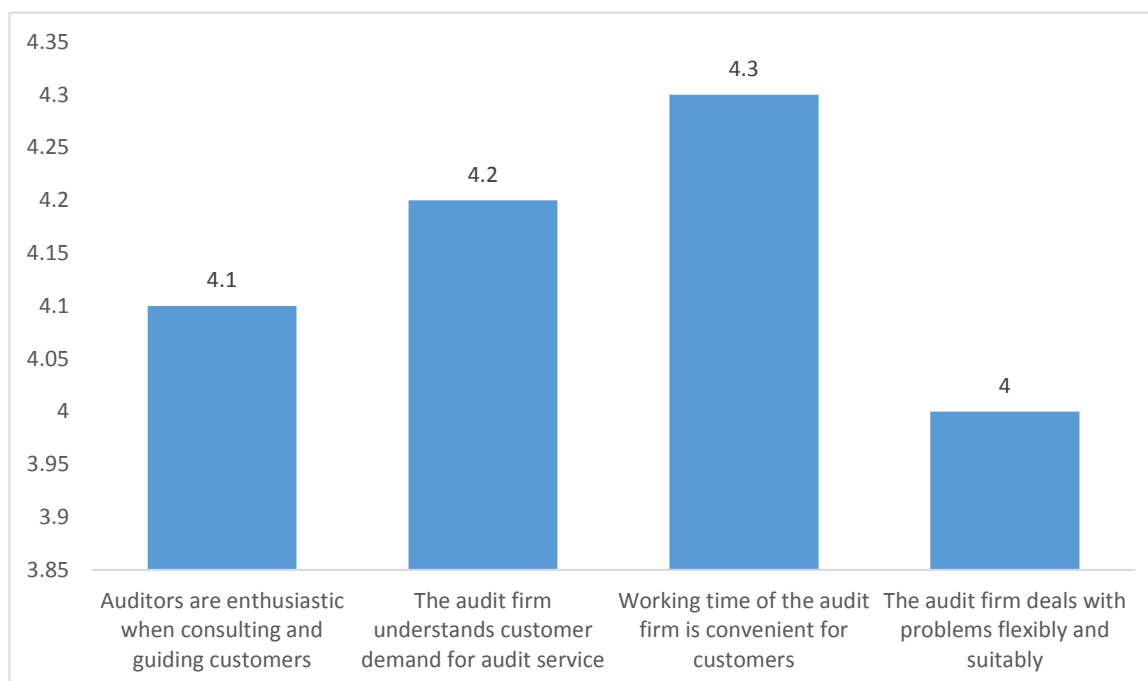
• ***Fourthly, Empathy of financial statement audit service quality***

The Empathy of financial statement audit service provided by independent auditors is reflected in four observable variables:

- Auditors are enthusiastic when consulting and guiding customers
- The audit firm understands customer demand for audit service
- Working time of the audit firm is convenient for customers
- The audit firm deals with problems flexibly and suitably

The results are shown in the following table (Figure 4)

Figure 4: Evaluating Empathy of financial statement audit service quality



(Source: Synthesis of the Author)

Throughout the survey, customers were satisfied with the Empathy of financial statement audit service with means of 4.0 to 4.3. This is also the group of factors with no mean below 4.0 (4.0 or higher). In terms of the five factors affecting financial statement audit service provided by independent auditors, Empathy is evaluated with the highest mean. This shows the great empathy of auditors and audit firms with customers. Empathy is clearly expressed through highly appreciation towards the ability of audit firms in dealing with problems in a flexible and suitable manner. Audit activities in general and independent audit in particular will require great support from customers. In practice, in audit planning, auditors and audit firms always have a very detailed, clear and specific discussion to ensure audit in compliance with time schedule. In addition, the discussion on audit time also receives a clear consensus of audit customers, which helps make the audit work very effective. When quickly interviewing chief accountants of state-owned customers that used audit service, they all believed that the time of independent audit was more appropriate, flexible and shortened than that of state audit.

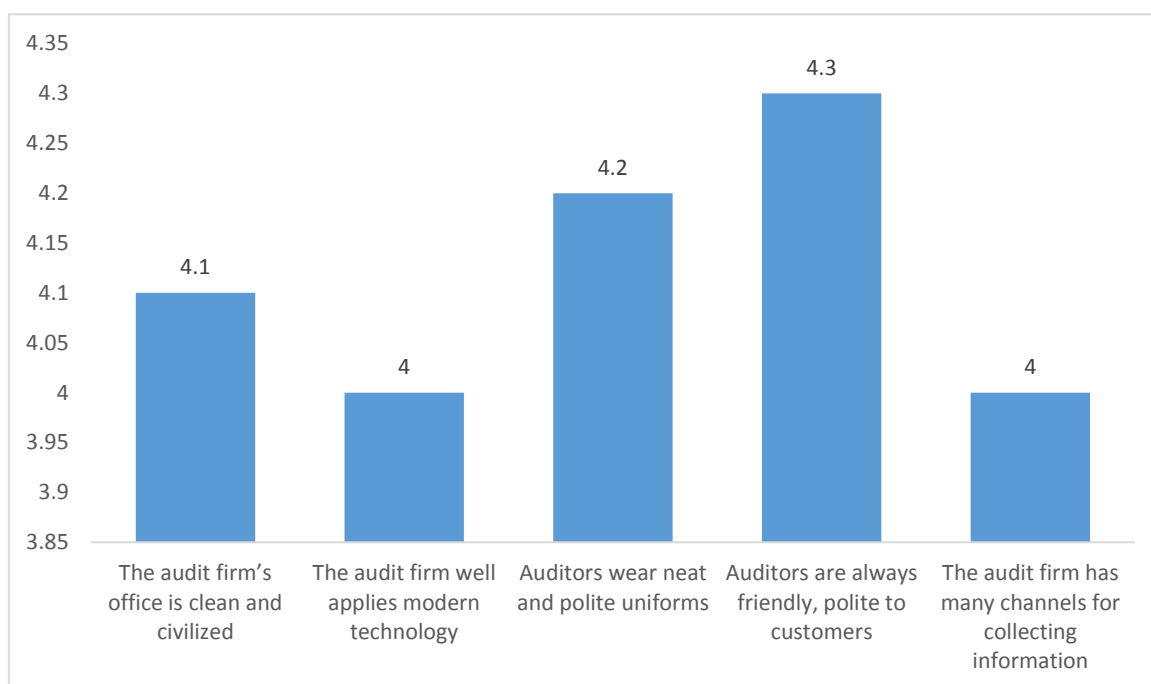
• ***Fifthly, Tangibles of financial statement audit service quality***

The Tangibles of financial statement audit service provided by independent auditors is reflected by five observable variables:

- The audit firm's office is clean and civilized
- The audit firm well applies modern technology
- Auditors wear neat and polite uniforms
- Auditors are always friendly, polite to customers
- The audit firm has many channels for collecting information

The results are shown in the following table (Figure 5)

Figure 5: Evaluating Tangibles of financial statement audit service quality



(Source: Synthesis of the Author)

Throughout the survey, customers were satisfied with the Tangibles of financial statement audit service with mean of 4.0 to 4.3. In particular, customers had the highest appreciation towards the friendly and polite attitude of auditors (mean of 4.3). However, customers did not very agree that the audit firm well applies modern technology and the audit firm has many channels for collecting information. Currently, audit firms mainly receive opinions of audit information users via two basic channels: audit customers and state agencies (Department of Accounting & Auditing Regime - Ministry of Finance, Vietnam Association of Certified Public Accountants (VACPA) and State Security Commission of Vietnam). In addition, investors, individuals and organizations rarely make direct contact to audit firms and auditors. This is also one of the weaknesses to overcome to increase financial statement audit service quality.

4. Conclusions

Based on the survey conducted by the researcher, financial statement audit service quality provided by independent audit firms has reached an average level with analysis on financial statement audit service quality for all factors affecting service quality (Table 5). In particular, the factor that is best appreciated by customers is Empathy. This is considered as the strength of financial statement audit service in particular and the audit industry in general. When customers trust services provided by independent auditors and at the same time find a great deal of empathy from auditors and audit firms (highest mean of 4.15 among variables of Empathy), thus enabling the audit of financial statements in particular and independent audit in general to develop the market and provide better service quality.

Table 5: Summary of analysis on financial statement audit service quality

No.	Independent variables	Mean
1	Reliability	4.04
2	Responsiveness	4.05
3	Assurance	3.98
4	Empathy	4.15
5	Tangibles	4.12

(Source: Synthesis of the Author)

Financial statement audit in Vietnam today is very well developed. Audit firms are constantly growing and continuously enhancing their audit programs as well as improving the quality of auditors to meet the requirements of customers and the market

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Factors Influencing Professional Skepticism and Audit Quality: The Case of Vietnam

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Abstract

This study was conducted on the basis of data collected from 513 auditors to measure the factors affecting the professional skepticism of the auditors and the quality of audit output. The methods of descriptive statistics, Cronbach's Alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were used in this study. The research result show that : professional skepticism is highly influenced by traits, time and audit workloads. At the same time, the professional skepticism and time and audit workloads have a decisive influence on the audit quality. In contrast, the audit quality have a great influence on the auditor's knowledge and experience. However, the results of the study also show that, despite the impact on the professional skepticism of the auditor, the characteristics of evidence, incentives, knowledge and experience of auditors are not statistically significant. The results of this study are a scientific basis for managers in auditing firms to make the right decisions to improve their auditors and the quality of their services.

Keywords: *Professional skepticism, Audit quality, Vietnam.*

JEL Classifications: *M4, M420*

1. Introduction

There have been a number of studies that have examined the factors that affect professional skepticism and the quality of output audits, such as the studies Nelson (2009), Hurt (2010, 2013), Brazel et al. (2014, 2018), Persellin et al. (2014), Westerman et al.

(2015), Arumega Zarefar et al. (2016). All these studies share the view that job skepticism is Impact on the quality of output audits and is influenced by various factors.

In Vietnam, the issue of quality audit output has been heavily discussed in the studies of various authors. However, a deep study of professional skepticism, the factors that influence this attitude and its impact on the quality of the output audit are few authors mentioned. Although in his studies, authors like Tran Khanh Lam (2011), Phan Thanh Hai (2014, 2016), Bui Thi Thuy (2014), Pham et al (2014), Phan Van Dung (2015). It refers to the role of the auditor for auditing quality. However, these studies have not explored, explored and measured the impact of factors affecting professional skepticism, the effect of this attitude on the quality of output audits.

Recently, some authors have mentioned the basic theory of professional skepticism, such as Nguyen Thi Phuoc (2018) and Nguyen Thi Hai Van (2018). However, there is no empirical study on this issue at present. This is also the reason for the author to study and publish the results of his research in this article.

The goal of this research is to help managers in auditing firms understand the causes and factors that affect the professional skepticism of the auditor in the past. Perform audit. From there, suggestions, solutions and recommendations to enhance the professional skepticism of auditors will help to improve the quality of audit output that the company provides customers.

2. Theoretical basis and research model

2.1. Theoretical basis

The audit quality is the study subject of many scientists and according to the research by Arezoo Aghaei chadegani (2011), the audit quality is a potential area for researchers to undertake many valuable coming research projects provided for the competent state authorities, audit experts, users of the financial statements ...

According to the GAO (2003,13), *"the audit quality is consistent with the generally accepted audit standards (GAAS) to provide reasonable assurance that the financial statements have been audited and relevant disclosures are: (1) presented in accordance with generally accepted accounting principles (GAAP) and (2) no significant issues related to errors or fraud."* Some authors argue that the quality of the audit is questionable in terms of: (1) the possibility that auditors will (a) discover shortcomings in the customer's accounting system and (b) make a report on these restrictions (DeAngelo, 1981; Watts and Zimmerman, 1983); (2) the possibility that auditors refuse to issue full acceptance reports for financial statements containing major errors (Lee et al., 1983); (3) the level of compliance with audit standards during the audit implementation process (Aldhizer et al., 1995; McConnell & Banks, 1998; Krishnan & Schauer, 2001); (4) the possibility that auditors can reduce errors and improve the accuracy of accounting data (Wallace, 1987); The truthfulness of the financial information presented on the financial statement after audit (Beatty, 1989; Krinsky & Rotenberg, 1989; Davidson & Neu, 1993).

In Vietnam, currently, there are a lot of studies on the audit quality and basically all researches share the same viewpoint that: The audit quality is a broad concept that is understood and expressed in many respects and is subjected to the influence of many different factors both inside and outside of the audit business. Prominently, of all these research, it is the study of the authors: Tran Khanh Lam (2011), Bui Thi Thuy (2014), Pham, H., Amaria, P., Bui, T., & Tran, S. (2014), Phan Thanh Hai (2016), Phan Van Dung (2015), Ngoc Kim Pham and his associates (2017).

2.2. Professional skepticism and the factors affecting professional skepticism

According to the Vietnamese Auditing Standards (VSA 200), "professional skepticism is an attitude that is always questionable, alert to specific situations, which may be a sign of error, confusion or fraud, should be carefully assessed for audit evidence". Professional skepticism (PS) is an important component of the auditor's mindset and exercising the PSI is an essential characteristic of a quality auditor (Nelson, 2009). Hurtt, Brown-Liburd, Earley and Krishnamoorthy (2013) argue that auditors' professional skepticism may be influenced by internal and external factors.

Nelson's (2009) study argues that this professional skepticism is influenced by elements of the evidential input; the incentive of the auditing enterprise (Incentives); Characteristics of auditors (Traits); Knowledge, experience and training. Finally, this professional skepticism affects the quality of evidential outcomes and affects audit results.

- Characteristics of auditors: According to research results of Nelson (2009), Hurtt (2013), this is the factor affecting the professional skepticism. Since each auditor has a different training process, the personality of each person is different. Most of the auditors have a long experience of working, they are more careful, meticulous, alert to specific situations in the process of auditing.

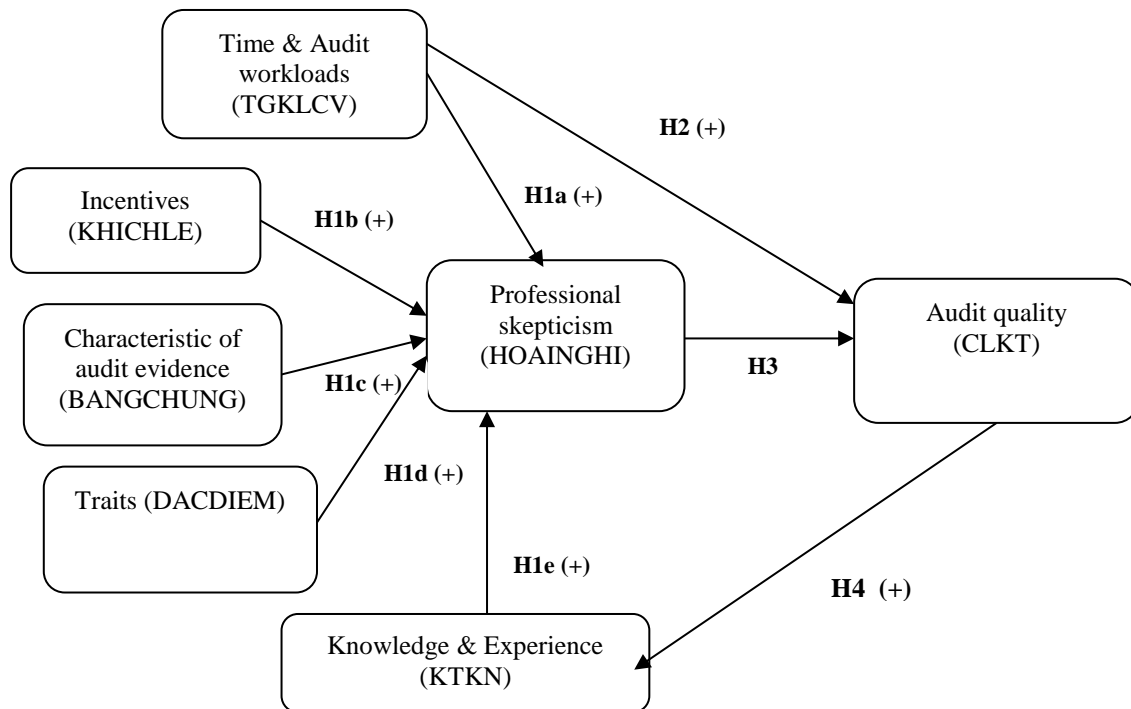
- Encouragement for auditors: Research by Nelson (2009), Brazel (2018) shows that the auditing firms's policy on reward and punishment for auditor in the audit process gives them motivation in increasing the professional skepticism, contributing to reducing audit risk and improving the quality of output audit results.

- The research of Arumega Zarefar et al (2016), the condary susplication is the result of the progress of the progress of magic, experience and ability of the checker and the effect with the quality check out. Before that, Hurtt et al (2013) from the next model of the research of the Nelson (2009) has been given that the condary condary of the photo of 4 of the element is: auditor characteristics, evidence characteristics, client characteristics and evironmental characteristics.

- Auditing time and volume: Studies by Persellin et al. (2014), (Brazel et al. (2018), both argue that the longer the auditing time for an item can reduce the skepticism. Therefore, DNIs need to limit auditing time and rotation, and Westerman et al (2014) concludes that The amount of work assigned to large technicians increases the pressure on accountability and the completion time from which it impacts professional skepticism.

2.3 Model and hypothesis

Figure 1. The proposed research model



Research hypotheses are specified as follows:

- Hypothesis H1a: The time and audit workloads have a positive influence on the professional skepticism of auditor.
- Hypothesis H1b: Incentives in the policy of the audit firms has a positive effect on auditor's professional skepticism.
- Hypothesis H1c: Characteristics of auditing evidence have a positive effect on auditor's professional skepticism.
- Hypothesis H1d: Traits have a positive effect on their professional skepticism.
- Hypothesis H1e: Auditor's knowledge and experience have a positive effect on auditor's professional skepticism.
- Hypothesis H2: The time and audit workloads have a positive influence on the audit of quality.
- Hypothesis H3: Auditor's professional skepticism has a positive influence on the audit of quality
- Hypothesis H4: Audit of quality has a positive influence on knowledge and experience of auditor.

3. Research Methodology

3.1. Data collection

To test the hypotheses of the study, the author collected data from the auditors currently working directly in the auditing firms in Vietnam. The data collection is done by issuing questionnaires directly, sending a questionnaire via Google Drive, emails to the auditors and the respondents answered by filling in the questionnaire independently, answer

emails, fill in the available files on Google drive questions. Results were analyzed using SPSS software, the scale is calibrated to determine reliability. Then the model are established for testing the research hypothesis

3.2. Scale

Researchers designed a questionnaire with 32 observations including 2 dependent variables, using the 5-level Likert scale (Score 1: Absolutely disagree, Point 5: Absolutely agree). Questionnaires and scales were checked and adjusted based on 4 bases: (1) qualitative research, (2) expert interviews (10), (3) in-depth interviews with 20 auditors, (4) Results of survey test 50 samples.

The scale of time and audit workload (symbol: TGKLCV). This scale is expressed through 5 observable variables; Scale of Incentives (Symbol: KHICHLE) with 4 observations; Scale of audit evidence (Symbol : BANGCHUNG) with 4 observations; Scale of Traits (symbol: DACDIEM) with four observations; Scale of Knowledge and experience (symbol: KTKN) is represented by five observations; Scale auditor's professional skepticism (symbol: HOAINGHI) is represented by five observations; Scale of audit quality (CLKT) is represented by 5 observations.

The content of these scales is inherited and corrected by studies by Nelson (2009), Kathy Hurtt and his associates (2013); Noel Harding (2016); Christina Chiang (2016); Hurtt et al (2010, 2013), Arumega Zarefar et al (2016), Brazel (2018)

3.3. Sample size

The author sent the questionnaire by issuing questionnaires, sending them via google drive, emailing to 700 auditors on the list provided by the Vietnam Association of Certified Public Accountants in the period from April 2017 to June 2018. As a result, there were about 160 auditors who did not respond to the questionnaire. After rejecting the invalid responses, 513 questionnaires were submitted. Compared with the original 32-item questionnaires, the sample size was at least $32 \times 5 = 160$, and the number of questionnaires was appropriate. According to Bollen (1989), the appropriate ratio for choosing the sample size with the number of parameters in the metric analysis should be 5: 1.

3.4. Analytical methods

The author tests the model using SPSS 20 software in combination with AMOS 20 through the following steps:

- Scale Verification: Scales are tested in three techniques: Cronbach's Alpha Reliability Factor, Exploratory Factor Analysis EFA, Confirmatory factor analysis CFA.

- Model testing: The proposed theoretical model and theoretical hypotheses were tested by [structural equation model](#) analysis (SEM) with AMOS 20 software.

4. Research results

4.1. Descriptive statistics about the sample

SPSS 20.0 software was used to conduct the analysis in the study. With the valid responses from 267 auditors, information is shown in detail in Table 1.

Table 1. Sample survey statistics

Charateristics	Frequencies	Percent%
Sex	N = 513	100%
Male	344	67.1%
Female	169	32.9%
Work experience	N = 513	100%
Under 5 years	140	27.3%
From 5 to 10 years	193	37.6%
From 10 to 15 years	71	13.8%
From 15 to 20 years	84	16.4%
Over 20 years	25	4.9%
The age of auditor	N = 513	100%
Under 25 years old	142	27.7%
From 25 to 35 years old	169	32.9%
From 35 to 45 years old	88	17.2%
From 45 to 55 years old	86	16.8%
Over 55 years old	28	5.5%

Source: Analysis results from SPSS 20

4.2. Cronbach's Alpha

Table 2. Cronbach's Alpha Output

Scale	Symbol	Number of observed variables	Cronbach's Alpha
Independent variables			
1.Knowledge and experience	KTKN	5	0.795
2.Characteristic of evidence	BANGCHUNG	4	0.743
3.Time and audit workloads	TGKLCV	5	0.762
4.Incentives	KHICHLE	4	0.704
5.Traits	DACDIEM	4	0.729
Dependent variables			
1.Professional skepticism	HOANGHI	5	0.759
2. Audit quality	CLCV	5	0.820

Source: Analysis results from SPSS 20

Cronbach's Alpha test results for the scale shown in Table 2 above show that these scales have a coefficient of Cronbach's Alpha > 0.6 and a total correlation coefficient of > 0.3. Thus, after the Cronbach's Alpha test, the scale of the study remained 32 observations for further use in subsequent EFA analyzes.

4.3. Analysis of the EFA and CFA discovery elements

4.3.1. Analysis of EFA scale factors

From the results of the survey, the data was analyzed using the SPSS 20 software, after eliminating variables with a factor of less than 0.5. The final result is shown in Table 3.

Table 3. Results of EFA

Observed variables	Factors						
	1	2	3	4	5	6	7
CLCV5	.738						
CLCV1	.733						
CLCV3	.729						
CLCV4	.726						
CLCV2	.720						
KTKN3		.746					
KTKN4		.729					
KTKN5		.721					
KTKN1		.701					
KTKN2		.696					
TGKLCV4			.773				
TGKLCV3			.742				
TGKLCV2			.723				
TGKLCV1			.660				
TGKLCV5			.603				
HOAINGHI2				.757			
HOAINGHI4				.702			
HOAINGHI1				.692			
HOAINGHI5				.682			
HOAINGHI3				.656			
BANGCHUNG1					.792		
BANGCHUNG4					.790		
BANGCHUNG3					.693		
BANGCHUNG2					.653		
DACDIEM1						.772	
DACDIEM4						.735	
DACDIEM2						.709	
DACDIEM3						.688	
KHICHLE1							.736
KHICHLE3							.687
KHICHLE4							.645

Observed variables	Factors						
	1	2	3	4	5	6	7
KHICHLE2							.617
Eigenvalue	4.535	3.829	2.687	2.185	1.822	1,431	1.156
% of Variance	14.170	11.965	8.396	6.828	5.694	4,470	3.612
Cumulative %	14.170	26.135	34.531	41.359	47.053	51,523	55.135
KMO	.812						
Bartlett's Test	Chi-Square				4607.863		
	df				496		
	Sig.				.000		

Source: Analysis results from SPSS 20

The analysis results show that $KMO > 0.5$, the Bartlett test has a p-value of $0.000 < 0.05$, a variance of $> 50\%$, the factor load factor is greater than 0.5 and the coefficient Eigen Value > 1 . Thus the criteria for using the EFA discovery analysis show that the factors are consistent with the data set of the study. Seven factors were extracted from the results of the analysis, including 32 observation variables used for subsequent analyzes.

4.3.2. Results of factor analysis confirm CFA

The suitability of the model

The model has 443 degrees of freedom; the CFA shows Chi-squared = 609,688 with the value $p = 000$; A number of other indicators that are less sensitive to sample size are used to assess model fit: RMSEA = 0.027 is small; Chi-Square / df = 1.376 (less than 2); GFI = 0.932, TLI = 0.960, CFI = 0.965 were all greater than 0.9; Thus the results of the analysis show that the data is acceptable with the proposed model.

Evaluate reliability, convergence value and discriminative value.

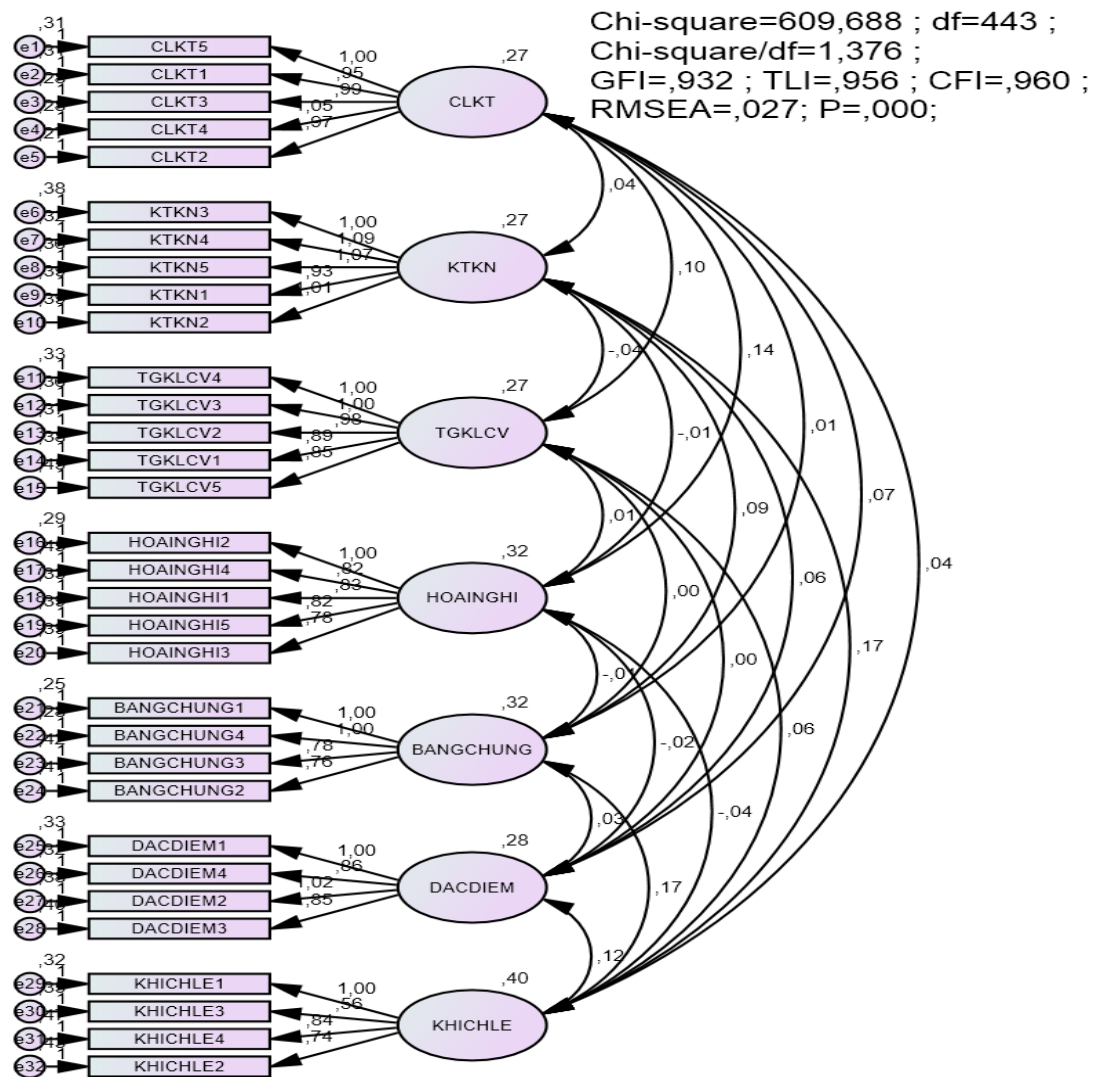
Table 4. The test result of the reliability and convergence of scale

Scales	Symbol	Number of observations	Composite reliability	Variance extracted
Knowledge and Experience	KTKN	5	0.967	0.854
Characteristic of Evidence	BANGCHUNG	4	0.895	0.705
Time and audit workloads	TGKLCV	5	0.977	0.894
Incentives	KHICHLE	4	0.875	0.645
Traits	DACDIEM	4	0.936	0.786
Professional skepticism	HOAINGHI	5	0.930	0.728
Audit quality	CLKT	5	0.979	0.903

Source: Analysis results from AMOS 20

According to Table 4, the reliability of C.R is greater than 0.7, the total deviation is greater than 50%, so it can be concluded that the components in the scale are reliable and convergent. Performing the analysis of the correlation coefficient between the factors we have the lowest value of 0.012 and the highest of 0.383 and not exceeding 0.85, the factors that satisfy the condition of the discriminative value.

Figure 2. Standardized CFA results



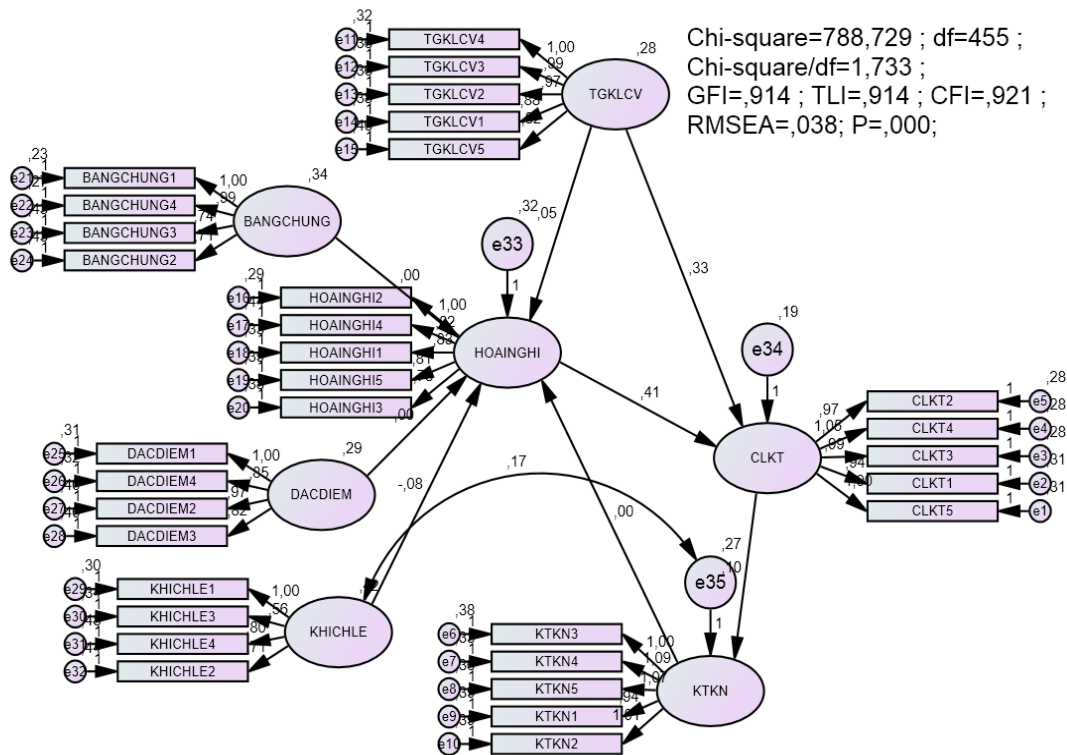
Notes : Chi-square/df. Ratio < 5 (Schumacker & Lomax, 2004), TLI > 0.90 (Hair et al., 2006), CFI > 0.95 (Hu & Bentler, 1999), RMSEA < 0.07 (Hair et al., 2006), p-value > 0.05 (Hair et al., 2006).

4.4. Model testing and research hypothesis

4.4.1. Verification of the research model

The author uses SEM to test existing models and hypotheses. The results of the model estimation show that the test model has 455 degrees of freedom (p = 0.00) and the indicators indicate the appropriate model for market data (chi-square /df = 1.733; GFI = 0.914; CFI = 0.921, TLI = 0.914, and RMSEA = 0.038).

Figure 3. Results of the research model SEM formal (standardized)



Notes : Chi-square/df. Ratio < 5 (Schumacker & Lomax, 2004), TLI > 0.90 (Hair et al., 2006), CFI > 0.95 (Hu & Bentler, 1999), RMSEA < 0.07 (Hair et al., 2006), p-value > 0.05 (Hair et al., 2006).

4.4.2. Research Hypothesis Testing

Table 5. Results of testing the research hypothesis

Variables		Estimate	S.E.	C.R.	P	Label
HOAINGHI	<--- BANGCHUNG	-.003	.056	-.050	.960	Reject H1c
HOAINGHI	<--- TGKLCV	.050	.062	.810	***	Accept H1a
HOAINGHI	<--- DACDIEM	.003	.061	.051	***	Accept H1d
HOAINGHI	<--- KHICHLE	-.082	.066	-1.232	.218	Reject H1b
CLCV	<--- TGKLCV	.327	.055	5.942	***	Accept H2
CLCV	<--- HOAINGHI	.406	.054	7.503	***	Accept H3
KTKN	<--- CLCV	.104	.059	1.760	.028	Accept H4
HOAINGHI	<--- KTKN	-.002	.089	-.019	.985	Reject H1e

Source: Analysis results from AMOS 20

Estimation parameters (normalized) were statistically significant (p < 5%). Based on the results of regression weights between the concepts we can see the test results of the hypotheses of the research model as follows:

- Accept H1a: Estimate = 0.050, p-value = 0.000. The auditor's time and workloads have a positive impact on professional skepticism.

- Reject H1b: Estimate = -0,082, p-value = 0.218. This shows that the incentives of the auditing firms in helping raise the professional skepticism in auditor's working process is unclear.

- Reject H1c: Estimate = -0.003, p-value = 0.96. This means there is no statistical significance in the results of the study, assuming that the characteristics of the audit evidence affect auditor's professional skepticism.

- Accept H1d: Estimate = 0.003, p-value = 0.000. The auditor's skepticism has a positive relationship with traits.

- Reject H1e: Estimate = - 0.002, p-value = 0.985. This means that the influence of knowledge and experience on auditor skepticism through empirical research is unclear and statistically significant.

- Accept H2: Estimate = 0.327, p-value = 0.000. Time and audit workloads has a positive relationship with the audit quality.

- Accept H3: Estimate = 0.406, p-value = 0.000. The professional skepticism of good auditor staff will lead to higher audit quality.

- Accept H4: Estimate = 0.104, p-value = 0.028. Audit quality will help auditor's knowledge and experience be better.

Thus, the results of the study showed that 5 out of 8 initial research hypotheses were accepted and three theories were rejected because of insufficient statistical significance.

5. Conclusions and recommendations

5.1. Conclusion

Based on the results of quantitative research on the factors affecting the professional skepticism and the quality of output audit through auditor survey, it is possible to draw some conclusions as follows:

- CFA shows that critical models are suitable for market data, and the scales ensure convergence, uni-directionality, reliability, covariance and discriminant values. From the CFA results, SEM linear analytical processing was performed, showing that the formal research model was consistent with market data.

- Research has identified the key features of auditor, Time and workload assigned directly affect the Skepticism. In that time and workload are the factors that influence the same direction and impact most strongly on this skepticism. Meanwhile, through the research results, the factors of auditing evidence characteristics, incentives of auditing firms, knowledge and experience, despite their influence, have not yet reached the level of confidence in the significance level. millet

The study also pointed out that, through the experimental survey, auditor in Vietnam said that professional skepticism and time and audit workloads affect the audit quality . At

the same time, the process of working to the final output has a repercussion effect on auditor's knowledge and experience.

5.2. Recommendations

Through research findings, it can be seen that auditor's professional skepticism is one of the factors that affect the quality of output audits. Therefore, in order to continuously improve the audit quality, managers in the auditing firms should pay attention to issues related to professional skepticism, especially the allocation of audit workloads, timing audit, human selection. As follows :

- Managers at audit firms need to pay close attention to the selection of appropriate auditors for each audit, especially those who influence the audit risk. The layout of the technicians is cautious, careful, thorough, vigilant when conducting information, collecting and evaluating audit evidence is essential to ensure professional skepticism. get the best attention. Normally, auditing firms send qualified and experienced long-term auditors to be team leaders, team leaders and auditors by seniority and long-term work experience. will be more cautious, career skeptic than the young auditors. More important, the professional skepticism is higher than the young auditor.

- Managers at audit firms should consider and consider setting up auditing plans for specific contracts, in particular the allocation of workload to each member, real-time does the job assigned to it. Auditing time and reasonable workload will help auditor reduce the stress and pressure of accomplishing tasks, focusing the skepticism on the work, collecting and evaluating the audit evidence. more accurate, thereby contributing to improving the quality of output audit.

- As mentioned above, the quality of output audits affects the knowledge and experience of auditor so after the conclusion of auditing contracts, the leader of the auditing firm should hold a public meeting to discuss the result. commenting on shortcomings in the work process, assigning tasks and arranging time to help auditor especially the young staff members learn more useful experiences and knowledge.

5.3. Limitation and further research

This research is carried out following a convenient sampling method. Therefore, the result is based on the viewpoint of the researcher which is still subjective and general. For further research, the using of probabilistic sampling need to be considered to ensure higher representation as well as increase the size of the sample that leads to more accurate analytical results. Additionally, the scope of this study is only implemented in the Vietnamese market. Consequently, the result as shown just generates several general conclusions as well as empirical solutions but not provide practical solutions accompanied to specific accounting business. Further research needs to be expanded in both scope and time for achieving a more comprehensive assessment

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**International Conference on Finance, Accounting and Auditing (ICFAA 2018)
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Applying International Experiences on Internal Audit in Vietnam

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Abstract

Internal auditing is an assessment activity that is established as a service to the organization. Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes. However, the significant role of internal audit has not really worked in Vietnam. The article shows experiences of internal auditing in accordance with international practices and applied in Vietnam in the present context.

Keywords: *Internal audit, International experiences, Vietnam.*

1. Introduction

Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

At its simplest, internal auditing involves identifying the risks that could keep an organization from achieving its goals, making sure the organization's leaders know about these risks, and proactively recommending improvements to help reduce the risks. For internal auditing to be effective, the organization's leaders must be open to discussing tough issues and seizing opportunities to make necessary changes for improvement. And the internal auditors must have an independent reporting line to the highest governing body (e.g., the audit committee of the board of directors), ensuring them the requisite authority to access

all areas of the organization and know that they will be supported if and when their views differ from those of management.

Internal auditors' independence and broad perspective of the organization make them a valuable resource to executive management and the board of directors. They ensure that the organization is held accountable to its stakeholders, whether those stakeholders are investors (as in the case of a publicly traded company) or the general public, served by a government organization. Ultimately, internal auditors add value to their organizations by providing assurance, insight, and objectivity. Internal auditors can save their organization substantial amounts of money and protect its reputation in the marketplace by identifying operating inefficiencies, wasteful spending, employee theft, fraud, and cases of noncompliance with laws or regulations, for example. They keep an eye on the corporate climate and perform a variety of activities such as assessing risks, analyzing opportunities, suggesting improvements, promoting ethics, ensuring accuracy of records and financial statements, educating senior management and the board on critical issues, investigating fraud, detecting wasteful spending, raising red flags, recommending stronger controls, monitoring compliance with rules and regulations, and much more.

2. Background and Reality of Internal auditing

2.1. International Internal Auditing

The strong growth of internal auditing in the world is closely linked to the emergence of the global institution of internal auditors (The IIA Global). The IIA Global was established in 1941 in New York City by a small group of dedicated internal auditors who wanted a professional organization that would represent their profession, and provide educational activities and standards for the professional practice of internal auditing. Since then, the IIA has become a dynamic international organization that meets the needs of a worldwide body of internal auditors. The IIA's Mission is to be the primary international professional association, organized on a worldwide basis, and dedicated to the promotion and development of the practice of internal auditing. With over 180,000 members in approximately 180 Chapters, globally, the IIA is proud to be the world leader in certification, education, research, and technological guidance for the profession worldwide. In North America and in the Caribbean, of which the Guyana Chapter is an affiliate, there are approximately 72,000 members. Headquartered in Altamonte Springs, Florida, the IIA is obligated to meeting the needs and development of Internal Auditors worldwide

The modern internal audit has made great changes in many aspects. Table 1 shows the changes of internal audit in all aspects. At the same time, it also gives the latest and most advanced trend that modern internal audit has achieved. Specifically, internal auditors have applied the technology in auditing activities, especially the application of automated testing and continuous monitoring in audit functions. If risk assessment was focused mainly on financial risks in the past, it has been expanded to business risk assessment of the entire unit now, which helps the unit to identify in advance hidden risks in all aspects, since having suitable measures for risk management and help the unit achieving the goal. In addition, tool

kit which is used for doing internal audit functions is more advanced, including: Risk frameworks and self-assessments

Table 1. Changes Taking Place in Internal Auditing

	Historic	Mainstream	Cutting-Edge
Focus	Audit entities based on rotational plan	Prioritize audit entities based on risk	Focus on strategic, business, and process risk
Perspective	Historic	Historic	Future
Style	Corporate police	“Father knows best”	Consultant and advisor
Mandate	Historic	Compliance with policies and procedures	Assurance on financial control; compliance Business assurance
Risk Focus	Financial	Financial plus	Enterprise risks
Tool Kit	Compliance work programs	Audit work programs for key processes; controls	Risk frameworks, self-assessments
Technology	None	Automated work papers	Automated testing and continuous monitoring

Source: Norman Marks (2018, pg 18)

2.2. Internal auditing in Vietnam

The organization and operation of internal audit in firms in Vietnam is regulated in Decision No. 832/1997QĐ-BTC on the issuance of the Regulation on Internal Audit (Internal Audit) applicable to State Enterprise (Enterprise); Circular No. 171/1998/TT-BTC of December 22, 1998 guiding the implementation of internal audit at State firms, whereby the internal audit system shall apply to State firms. Internal auditing includes auditing, review, evaluation, management and monitoring activities for all public bodies and organizations to ensure the economy, efficiency and effectiveness of operations, governance of the unit.

In recent years, new internal audits have been more concerned. Specifically, the revised Accounting Law takes effect as from January 1, 2017 for the first time regulating internal auditing. According to Article 39 of the Accounting Law (2005), internal audit is the examination, assessment and supervision of the adequacy, suitability and effectiveness of internal control. Internal auditors have the tasks of: checking the suitability, effectiveness and effectiveness of the internal control system; To examine and certify the quality and reliability of economic and financial information of financial statements and management accounting reports before submitting them for approval; To inspect the compliance with the principles of operation, management, compliance with law, financial and accounting policies, resolutions and decisions of the leaders of the accounting units; To detect loopholes, weaknesses and frauds in the management and protection of the units' property; To propose solutions to improve and perfect the management and operation system of the accounting units.

In Vietnam, the units have been operating and conducting internal audit of small scale, mainly credit institutions, fund management organizations, insurance organizations which are required to conduct internal audit in accordance with Vietnamese law. However, the internal audit functions in these units have not actually achieved the desired effect. Some

have failed to perform the core functions of internal auditing, others are poorly content-based, failing to play a role as protection shield and creating value for the enterprises. In fact, it comes from the following reasons:

Firstly, Manager`s perception.

This is the biggest barrier that affects the organization and operation of internal audit in the unit. Managers have different views on the role and effect of internal audits in the unit's control activities. There are many views that the organization of the internal audit department is unnecessary, as it can make the cumbersome management, increase the unit cost, especially the mentality of managers. Management does not want to have a section to examine and evaluate activities by themselves as managers and operators.

Secondly, Uncertainty of state management agencies.

The current State management agencies only stop issuing internal audit regulations, there are no regulations as well as regulations that require enterprises to organize internal audit. The National Assembly has promulgated the Law on Accounting, the State Audit Law and the Independent Auditing Law, but have not yet promulgated a separate law on internal audit, which only stipulates an internal audit in the Accounting Law 2015, not yet promulgated. Comply with the internal audit standards as well as regulations on the legal status, responsibilities and powers of internal audit.

Thirdly, There are many limitations in training and human resource development in internal audit

Universities and training institutions have not paid enough attention to training on internal audit. Most Vietnamese economic universities only focus on professional training on independent audit, state audit, not internal audit, even not have internal audit subject into the curriculum. In addition, there are very few professional training centers on internal audit, since a serious shortage of internationally-accredited human resources for IA will occur. It will be a major challenge for Vietnam to develop internal auditing in line with integration requirements and transparency requirements. Statistics show that most of the current internal auditors are recruited from other professions such as independent auditing, accounting or control, or are appointed and rotated from other departments.

Fourthly, Independence of internal auditors has not been established and guaranteed.

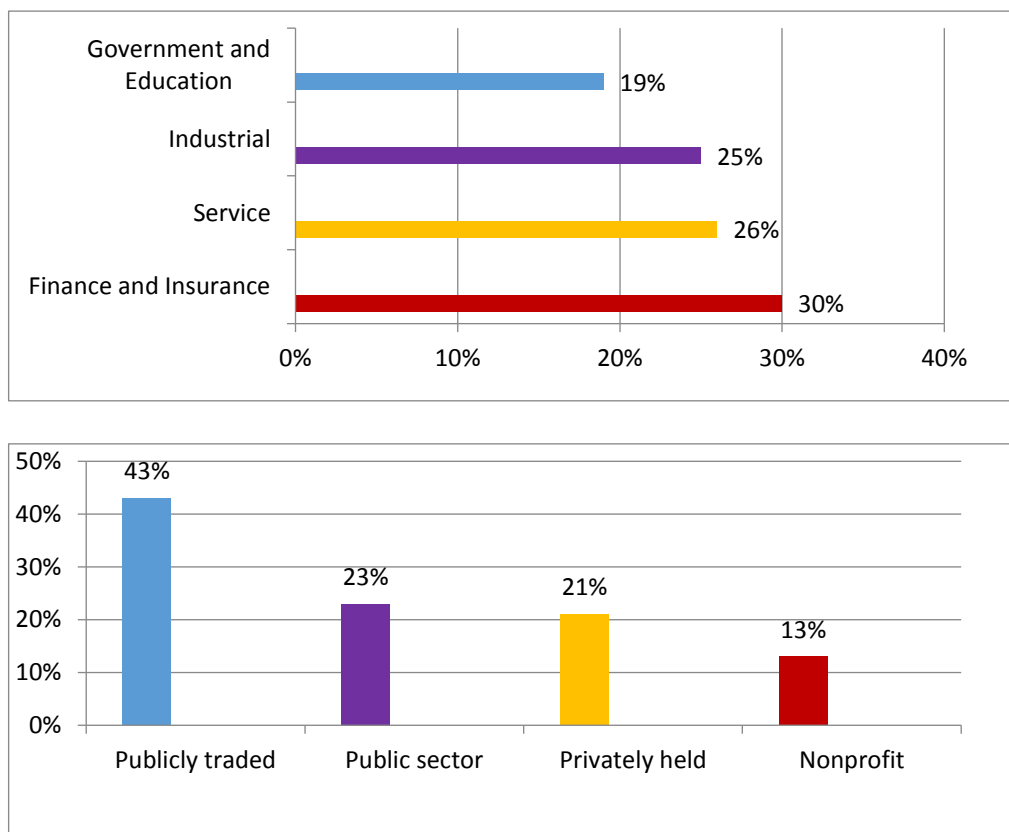
The internal audit department is a unit under the top, and it conducts the inspection and control of the main operation of the unit. Therefore, independence has not been ensured. At many units, internal auditors are still in charge of other work positions. As a result, the internal auditors are unable or unwilling to give their opinion objectively in the audit process as well as in presentation of their opinions in the audit report.

Therefore, internal audit in Vietnam has not really become an effective management tool, not effectively implement the prevention, detection and handling of negative behaviors, frauds, errors in managing and running business activities in the enterprise

3. Methodology

The authors have used the qualitative methodology in the study of the situation and proposed solutions to build and improve internal audit in Vietnam according to international practice. We focus on internal audit research around the world and recent developments associated with internal audit analysis in Vietnam, to provide international experiences for development of internal auditing in Vietnam. The IIA Global (2018), *Global America Pulse of Internal Audit* is used mainly to identify the status and development trends of worldwide internal audits in terms of: Internal Auditing scope; Audit force, resources for auditing and the audit law system which creates the legal corridor for internal audit development. *The Global America Pulse of Internal Audit* collects information about both established and emerging issues that are important to the profession as well as information about internal audit management (such as areas of focus and staff levels). In Pulse reports, Chief Auditor Executives (CAEs) and directors/senior managers are collectively referred to as CAEs, and the terms audit department, audit function, and audit activity are used interchangeably. *The Global America Pulse of Internal Audit 2018* gathered 636 responses, including 552 CAEs and 84 directors/senior managers from 04 organization types and 04 Industrial groupings.

Figure 1. Industrial groupings and organization types in Global America Pulse of Internal Audit 2018



Source: *The IIA Global, Global America Pulse of Internal Audit report (2018, pg 2)*

In addition, in Vietnam we use the primary data collected from the questionnaires and interviews directly with managers at all levels and internal auditors at enterprises. Then,

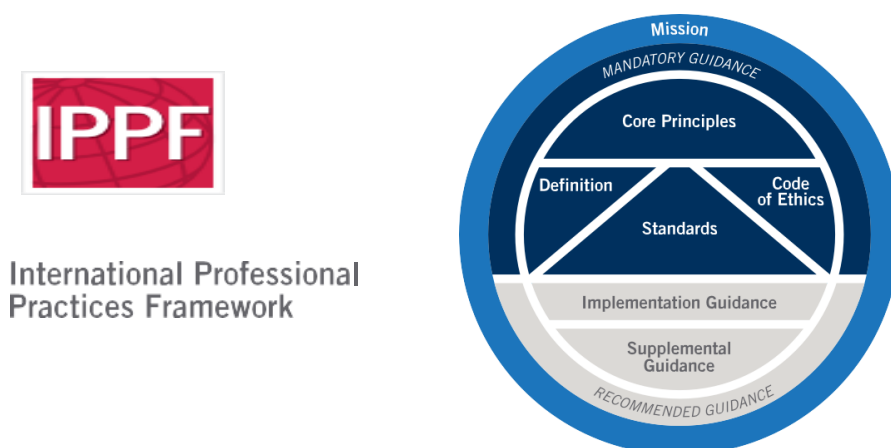
from the selected sample, we summarized and indicated the level of development of the internal audit as well as some existences, reasons why the internal audit of Vietnam has not promoted its core role. For reasons, the authors focus on the system of causes from the major components involved in the chain of operations of internal auditing in Vietnam. Based on the research results from the articles of economists, researchers and PhD students on internal audit in Vietnam's recent economic, accounting and auditing journals from 2014 up to now, we have identified the main causes from government, universities, training institutions and enterprise in affecting the effectiveness of internal auditing in Vietnam. Since, we propose some solutions in order to promote the development of Internal Audit in Vietnam as followings.

4. Discussion and recommendations

Completing the legal framework and guidelines for internal auditing: In 2016, the Draft Decree on Internal Auditing has been submitted to the Government by the Ministry of Finance for its comments and, in the future, if it is promulgated, it will help to standardize the definition, position, role, the methodology for conducting internal audit in accordance with international standards issued by the International Institute of Internal Auditors (IIA) provides the basis for more advanced internal audit. Hopefully, the Draft Decree on Internal Auditing in Vietnam will soon be approved as a basis for building and implementing internal audits for Vietnamese enterprises. In addition, the Government should coordinates with experts in drafting documents guiding the implementation of internal audit in each type of enterprise, each audited subjects and audited contents such as guiding circulars, books internal audit.

Governments and Vietnamese enterprises can refer to internal audit guidelines from the IIA, such as the International Professional Practices Frameworks (IPPF). This is one of the scientific guidelines for building and operating effectively internal audit in Vietnam according to international standards

Figures 2. IIA Implementation and Supplemental Guidance



Source: IIA Global (2017, pg 15)

Implementing internal audit requiresto ensure independence and objectivity, to

prevent inequity, prejudice and conflict of interest in order to receive the highest IA functions in the enterprises. For example, the chief audit executives, internal auditors, internal audit assistants are restricted to audit the internal regulations, policies, procedures, and processes for which they are the primary responsible person in elaboration of those regulations, internal policies, procedures and processes; chief audit executives, internal auditor, internal audit assistant must not have conflicts of rights and economic interests with audited units and sections; The chief audit executives, the internal auditor and the internal audit assistant will not be allowed to audit the units or sections where such unit's managers are related persons; Chief audit executives, internal auditors and internal audit assistants will not be allowed to participate in the audit of activities or sections where they are responsible for carrying out their operations or managing such departments within 3 years. Since, Vietnamese governance should notes to complete IA legal framework.

Extending the scope of Internal Audit in Vietnam: According to a report by Richard Chambers, CEO of IIA Global, the scope of internal audit activities have changed dramatically in the world. It is not only in audit compliance but also has extended to all areas of the companies such as financial audit, risk management, cost reduction ... Meanwhile, in Vietnam, internal audits have grown rather slowly, with few companies holding internal audits. In the case of construction, the audit function is misunderstood as internal control, performs the task of auditing the compliance of the principal and therefore does not promote the same effect as the nature of the internal audit. Therefore, conducting internal audit, the managers need to diversify to ensure maximum use of internal auditing with the goal of creating added value for Vietnam enterprises in the future.

Table 2. Top focused areas in International Internal Audit

	Top areas of focus	Rate
1	Financial – Related	15%
2	Compliance/Regulatory	16%
3	IT and Cybersecurity	15%
4	Operational	14%
5	Risk management	8%
6	Cost/Expense reduction/containment	4%

Source: The IIA Global (2018, pg 26)

Internal Auditing Training: As stated above, training of internal auditors in Vietnam is currently limited. Universities and training institutions have not paid enough attention to training on internal audit. Most Vietnamese economic universities only focus on professional training on independent audit, state audit, not internal audit, even not have internal audit subject into the curriculum. Also, there are very few professional training centers on internal audit.

Since, training of internal auditors satisfies job requirement is an objective requirement in Vietnam. However, training auditors with professional skills to meet social needs and meet international standards is a difficult issue for organizations and universities.

According to the latest report of IIA Audit Executive Center (2018 Global America Pulse of Internal Audit), there are some skills of Internal audits which are in demand and also most difficult to find:

Table 3. Demanded skills and Skills found hard

What skills are in demand?			How hard are they to find	
	<i>Skills being actively recruited</i>	<i>Rate</i>		<i>Skills most difficult to recruit</i>
1	Analytical/Critical thinking	74%	1	Cybersecurity and Privacy
2	Communication	63%	2	Data Mining and Analytics
3	Business Acumen	60%	3	Industry-Specific Knowledge
4	Accounting and Finance	56%	4	Innovative Thinking
5	Risk management Assurance	55%	5	Fraud Investigations and/or Auditing
6	Process Improvement	52%	6	Business Acumen
7	Data Mining and Analytics	50%	7	Analytical/Critical thinking
8	Innovative Thinking	45%	8	Risk management Assurance
9	Industry-Specific Knowledge	45%	9	Persuasion and Collaboration
10	Cybersecurity and Privacy	39%	10	Process Improvement

Source: The IIA Global (2018, pg 125)

With the necessary skills and hard-to-find skills, the orientation for the training of internal auditors in Vietnam in particular and in the world in general. Besides training basic knowledge base of auditors, the priority of training skills such as Analytical/Critical thinking, Communication, Business Acumen, Cybersecurity and Privacy, Data Mining and Analytics, Industry-Specific Knowledge ... is strategic training orientation for building the team of internal auditors profession

Implementation of Auditing Tools: the application of technical means in the workplace is an inevitable requirement in all fields and sectors. However, the level of application depends on many factors such as nature of industry, level of development ... The application of auditing tools in Vietnam is still poor, so the work efficiency is not high. In the current industrial revolution 4.0, the application of technical tools is quite common. According to the IIA, the application of Electronic Workpapers is 77%, Data Analytics (62%), Automation of routine Internal audit tasks (18%) and Automation of analysis of evidence (13%). In the future, internal auditors will be step by step used by Robotics and artificial intelligence to maximize the efficiency of their work

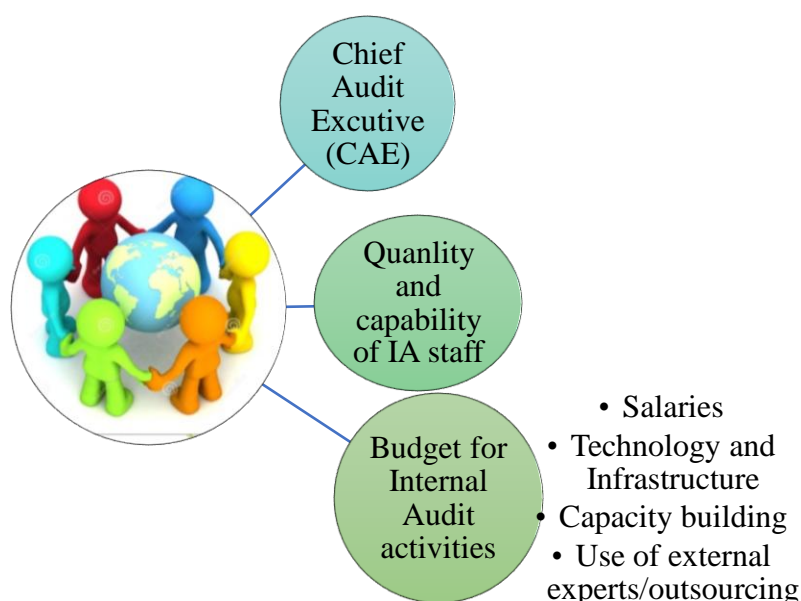
Table 4. Deploy the Best Navigation Tools

	<i>Implementation of Technology Solution</i>	<i>Full or Partial</i>	
1	Electronic Workpapers	77%	* New technologies create agile and future-focused functions
2	Data Analytics	62%	* Today`s tools of the trade - Audit management systems - Data analytics
3	Automation of routine Internal audit tasks (e.g. robotics process automation)	18%	* Tomorrow`s tools of the trade - Robotics - Artificial intelligence
4	Automation of analysis of evidence (e.g. automated judgement, artificial intelligence)	13%	* Deploy solutions that will yield dynamic results/insight

Source: The IIA Global (2018, pg 85)

Resources for IA: According to Mr Hoang Hung – *PwC Partner – Vietnam markets Leader, International Expert at World Bank and Ministry of Finance`s Internal Audit Project*, the resources for internal auditing include three divisions: The chief audit Executive, the number and quality of internal auditors and budget for internal audit activities. Beside the human resources factor, the budget for internal audit contributes largely to audit effectiveness. This budget includes: salary, Technology and Infrastructure, Capacity building, Use of external experts/outsourcing. In Vietnam, due to poor awareness of the role of internal auditing, leading to limited budget allocation, resulting in limited scope of audit, audit time, audit density is not suitable, since internal audit effectiveness has not been promoted. In the future, it is necessary to have appropriate investment to improve the efficiency of internal audit in enterprises

Figures 3. Essential resources for IA activities



(Source: Hung, Hoang Ngoc, 2018, International Conference)

5. Conclusion

In order to build and promote the effectiveness of internal audit in Vietnam in accordance with international practices, there should be coordination between the concerned parties. First, State agencies in promulgating legal regulations on the application of internal auditing in economic units as well as international integration in internal audit. Secondly, It should focus on training internal auditors at universities as well as other training institutions. With respect to resources, internal audits should be given greater attention and proper investment in the performance of the audit function. In addition, the application of scientific and technological advances to the implementation of internal audit should be promoted by organizations and enterprises to improve the effectiveness of internal audit in Vietnam, creating added value for business

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Research on Analytical Procedures and Inquiries in Fraud Risk Assessment Conducted by Audit Firms in Vietnam

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Abstract

The paper has provided fraud risk assessment procedures to assess risk of material misstatement due to fraudulent financial reporting of enterprises in Vietnam. The paper has used a quantitative research method through a survey of 68 experienced auditors and SPSS software to conduct statistical description of analytical procedures and inquiries affecting fraud risk assessment conducted by audit firms in Vietnam. The results of research have shown that analytical procedures and inquiries which are used popular and effective procedures in fraud risk assessment of audit firms in Viet Nam.

Keywords: *Analytical procedures, Audit firms, Fraudulent financial reporting, Fraud risk assessment procedures, Inquiries.*

JED code: *M42 - Auditing*

1. Introduction

According to Association of Certified Fraud Examiners, independent auditors have only detected world's financial fraud approximately 3% in recent years (ACFE, 2014). Failure to detect fraudulent financial reporting has relationship with the failure of largest international audit firms (Big 4) such as Arthur Andersen, KPMG, Ernst & Young, Deloitte Touche Tohmatsu và PricewaterhouseCoopers. After 13 years of collapse of Enron, WorldCom and one of the world's top five largest international audit firms, Arthur Andersen, the Sarbanes-Oxley Act was published to strengthen corporate governance and improve the quality of audit reports to protect the interests of investors on the stock market. However, after the promulgation of the SOX Act, audit firms were still unable to prevent the fraudulent

financial reporting of world's large corporations. The number of large financial scandals of large corporations such as Olympus, Tesco, Toshiba conducted by the world's four largest audit firms. However, these audit firms did not warn investors about any fraud risk indicators regarding the fraudulent financial reporting of these corporations. With the failure of fraud detection, audit firms have suffered a great loss of financials and reputation. In particular, Ernst & Young ShinNihon has paid a fine of 2.1 billion Yen (\$ 17.4 million) and is prohibited from signing new business contracts within the next three months from January 2016. Koichi Hanabusa, President and CEO of Ernst & Young ShinNihon, would be responsible and resign from Ernst & Young at the end of January 2016 for failing to detect profit overstatement of the Toshiba Group during six years of audit (Truong Anh, 2015).

With the growth of Vietnam's stock market, misstatements of financial statements of Vietnamese enterprises due to fraud have increased popularly in recent years. The misleading financial statements information of listed companies before and after auditing is increasing. The phenomenon of material misstatement due to fraud exists in the audited financial statements with unqualified opinion (Nguyen Thi Thuy, 2014). Detecting fraud, especially fraud risk assessment is the challenge for auditors and audit firms in financial statement audit.

From the necessary of the topic and the gap in the research, especially few studies in Vietnam have addressed to fraudulent risk assessment procedures conducted by independent audit firm in Vietnam. Fraudulent risk assessment is an important part of the audit process to minimize the audit risk and helps audit firms avoid falling into lawsuits and collapse. Therefore, research on analytical procedures and inquires in fraudulent risk assessment conducted by audit firms in Vietnam (a developing country) is an essential issue which need to be addressed.

2. Literature Review/ Theoretical Framework and Methods

2.1. Literature Review

2.1.1. International researches

Internationally, there are some researches focused on fraud risk assessment procedures as following:

Fristly, analytical procedures affecting fraud risk assessment

Calderon & Green (1994) studied the analytical procedures for predicting fraud in financial reporting. Results of this study have indicated that analytical procedures are an effective tool for predicting management fraud and recommend approaches to increase the likelihood of detecting fraudulent financial reporting of internal auditors. Kaminski et al. (2004) conducted exploratory research to determine the financial ratios used to evaluate the difference between fraudulent companies and nonfraudulent companies. For a seven-year period, the study used 21 financial ratios to research 79 pairs of companies which were alleged and not accused of fraudulent financial reporting. The study identified 16 significant financial ratios, especially fixed assets/total assets, total liabilities/total assets, working capital/total assets which were predicted the high likelihood of fraud risks in financial

statements. However, the results of this research indicated the limitations of analytical procedures in detecting fraud in financial statements. Dalnial et al. (2014) also conducted a study on the relationship among financial ratios in the prediction of fraud in the financial statements of listed companies in the Malaysia's stock market between 2000 and 2011. The research results have shown that there were two financial ratios (total liabilities/total assets and account receivables/total revenues) that had significant predictability in detecting fraud in financial reporting.

Secondly, inquires of management and others in entity affecting fraud risk assessment

According to international standard of auditing (ISA) and Vietnamese standard of auditing (VSA) 240, inquires and communication with among audit team are effective procedures for identifying and evaluating fraud risks. Alvin et al. (2017) mentioned in the fraudulent risk assessment claimed that it was a useful source of information for auditors to assess the risks in general and the risks of fraud in particular.

2.1.2. Vietnamese researches

Vietnamese researches have addressed fraud risk assessment procedures in financial statement audits which is relatively limited. Ngo Thi Thu Ha (2007), Ly Tran Kim Ngan (2011), Nguyen Thi Huong Giang (2013) and Le Nguyen The Cuong (2013) provided some basic steps of risk assessment. However, studies have not studied systematically and adequately the fraudulent risk assessment procedures due to fraudulent financial reporting, especially enterprises in Vietnam. Therefore, my study focuses on risk assessment procedures for fraudulent financial reporting of enterprises conducted by audit firms in Vietnam.

2.2. Theoretical Background

In the audit plan, the auditors perform risk assessment procedures to assess the risk of material misstatement in financial statement due to fraud and error. Risk assessment procedures means the audit procedures performed to obtain an understanding of the entity and its environment, including understanding entity's business and industry, internal control, identifying and assessing the risks of material misstatement due to fraud or error at the overall financial statements level and the assertion level. Risk assessment procedures include the following: inquiries of management and others within the entity, analytical procedures, observation and inspection, discussion among engagement team members and other risk assessment procedures. However, ISA and VSA 240 has addressed the auditors to assess the risk of material misstatement due to fraud and perform effective fraud risk assessment procedures including inquiries of management and analytical procedures.

2.2.1. Inquires of management, those charged with government and others within entity affecting fraudulent financial reporting

According to ISA and VSA 240, inquiry is an effective procedure to help auditors and audit team gather information to assess fraud risk through interviews with those charged with government, management and and Audit Committee or Control Board, employees of the entity.

Firstly, inquiries of management

Management is responsible for the designing and operating of effective internal control which detect and prevent fraud risk and timely correct material misstatements due to fraud. Therefore, the auditors focus on interviewing management to find out the following information: the management understand the nature, extent and frequency of such assessment; management's process for identifying and responding to the fraud risks frequently in the entity; management's communication to those charge with government regarding its processes for identifying and responding to fraud risks in the entity. Inquires with management helps auditor understand whether management have knowledge of the risk of fraud affecting the preparation of financial statements of entity.

Secondly, the auditors conduct interviews with internal auditors and Audit Committee or Control Board

Internal Auditor plays an important role in monitoring other components of internal control and performing ongoing and periodic assessment of quality of internal control. External auditors conduct an in-depth interview with internal auditors about the perceptions and suspicions of fraud risks, assessment of designs and operations of ongoing and periodic internal control to prevent, detect and correct the material misstatement due fraudulent financial reporting.

Audit Committee or Control Board is responsible for supervising internal control and overseeing responsibility for financial reporting. Audit Committee or Control Board evaluates the integrity of the management and the ability of the management override of control and supervise the process of identifying and designing internal control for fraud risks of management. The auditors should consider the independence of the Audit Committee or Control Board's members in those charged with government. The supervising functions of the Audit Committee or Control Board are loose and ineffective. This is an important sign of the ineffectiveness control to fraudulent financial reporting committed by management.

Thirdly, inquiries of other employees in the entity

For fraudulent financial reporting, inquiries with management are unlikely to provide useful information regarding the fraud risk committed by management. Therefore, inquiries with employees help auditors to collect honest and objective information in preparation of financial statements. In particular, operating employees were not directly involved in the preparation of financial statements (warehouse personnel, delivery staff, etc...), employees with different levels of authority, employees involved in initiating, processing or recording complex or unusual transactions; employees worked in human resources department, in-house legal counsel, chief ethics officer or equivalent person charged for dealing with allegations of fraud. The interviews with the employees help the auditors determine whether employees suspected fraud existed or accused of fraudulent practices affecting the process of preparing and presenting financial statements, especially management fraud. Employees are requested to perform non-compliant control activities by management, employees can provide relevant information regarding accounting estimates, undisclosed related parties or fictitious transactions.

Fourthly, inquires of those charged with government

Those charged with government has an active role in oversight of the entity's assessment of management's process for identifying and responding to the fraud risks and internal control that management has established to mitigate these risks. The preparation and presentation of financial statements are affected risks of fraudulent financial reporting. The information collected by the those charged with government are important for the auditors to determine the process of preparing and presenting the financial statements of the management and assessing the likelihood of the management override of control. Attending meetings or reading the minutes of those charged with government's meetings help the auditors to understand their appropriate overseeing responsibilities of each member of those charged with government, the adequacy of internal control over fraud risk, the competency and integrity of management.

2.2.2. Analytical procedure affecting fraud risk assessment

In the audit plan, analytical procedures help the auditors identify unusual fluctuations of account balances, transactions or events presented in the financial statements. Based on the analytical procedures, the auditors can identify fraud risk indicators and the likelihood of significant misstatements due fraudulent financial reporting at the financial level and the assertion level. Analytical techniques often use trend analysis, ratio analysis and regression analysis. For example, the first technique is trend analysis to detect significant and unusual fluctuations of account balances and transactions in comparison of client data with similar prior-period data and auditor-expected results, industry data, client determined expected results. Secondly, the auditors used ratio analysis such as liquidity activity ratio, profitability ratio, leverage ratio, and performance ratio. Thirdly, regression analysis is an analytical tool used in performing fraudulent risk assessments through linear models between dependent variable and independent variables.

By implementing the audit procedures, especially inquiries and analytical procedures in the fraudulent risk assessment, the auditors determine the existence of fraud risks, determining the magnitude of fraud risks affecting the financial level and the assertion level to determine appropriate audit procedures to detect fraud.

2.3. Quantitative Research Method

The author has used a quantitative methodology using a questionnaire to interview experienced auditors working in auditing firms in Vietnam. The author has designed questionnaires and measured the fraud risk assessment procedures affecting detection of material misstatement due to fraud through the Likert scale from 1 to 5 points (1-point is completely ineffective, 2-point is ineffective, 3-point is effective (moderate), 4-point is very effective, 5-point is completely effective). Questionnaires were sent to independent auditors with auditing experience for enterprises. The survey is conducted in the following ways: sent the questionnaires by Google email, call the auditor directly by mobile phone, sent questionnaires at the training course of Vietnam Association of Certified Public Accountants. The number of questionnaires received was 68, equivalent to 68 respondents. The experience of auditors surveyed mainly equals to 5-year experiences or more, accounted for 80% of the total

number of questionnaires received. The results of the reliable test of the scale for Cronbach Alpha's index which have 0.7 point or higher. This shows that the measurements of variables are reliable.

3. Results and Discussion

3.1. Descriptive statistics results of inquires with those charged with government, management and others within entity affecting fraud risk assessment

Inquires with those charged with government, management and others within entity are important and effective procedures to assess fraud risk assessment due to fraudulent financial reporting in audit plan with average score over 3.0 points.

For interviewing those charge with government, the auditors collected important information related to risks of fraudulent financial reporting at the highest average score. The questions on the supervising the process of fraud risk identification and assessment are established by the management, the those charged with government recognized and suspected fraud related to management and accepted fraud risks to the financial statement at the highest score of 3.7 points, supervision of assessment of internal control at the lowest score of 3.47 points. However, the auditors still highly appreciated the information of fraud risks obtained by the those charged with government because fraudulent financial reporting is frequently committed by management.

Inquiries with the management help the auditor to detect information related to understanding and suspicion of fraud risk factors affecting financial statements (3.76 points). The management has designed and operated internal control to detect and prevent fraud risks, mitigate material misstatement due to fraudulent financial reporting (3.58 points), management frequently communicates with those charged with government about the process of identifying, assessing and responding with fraud risks; reporting to those charged with government and Audit Committee or Control Board on suspicions and findings, fraud risk-related controls at the same average level of 3.4 points.

For inquiries with the Control Board or Internal Audit Department, the results of inquires help the auditors to determine appropriate respond of managment when findings of fraud risks decteced by the Internal control (3.76 points), inquiries with the Internal Audit Department or Control Board about internal control detected and prevented fraud risks, mitigated material misstatements due to fraudulent financial reporting (3.47 points), the internal auditors or Control Board has knowlege of fraud risk existed in the entity (3.35 points).

Interviewing the employees is also a useful information channel for auditors in identifying and evaluating fraudul risks in preparing financial statements. In particular, the results of this survey have shown that employees engaged in business activities are not directly involved in preparation of financial statements and employees involved in initiating, processing or recording complex or unusual transactions that are two important and popular groups for collecting information to assess fraud risk existed in preparation of financial statements (3.76 points and 3.41 points). Interviewing results of these groups help the auditors

determine the causes of transactions and unusual transactions recorded in the financial statements. However, employees in the in-house legal counsel and human resources department, chief ethics officer or equivalent person charged for dealing with allegations of fraud have information of fraud risk assessment at lowest level (2.75 points). Information of fraud risk assessment obtained from employees are evaluated at high score level (approximately and over 3.0 points). Because the employees involved directly in business activities and prepared financial statement, they have knowledge about fraud risk factors or the likelihood of fraud existed in entity (3.76 points). Through inquiries with employees who have ever been requested to perform non-compliant control activities by management (3.41 points) and inquiries with employees who have knowledge about accounting estimates for bias by management and related party has not disclosed in notes to financial statements (3.0 points). The information is useful for the auditor to evaluate the likelihood of material misstatement due to fraudulent financial reporting regarding the integrity of management.

Table 1. Statistical description of inquiries of those charged with government, management, others within entity affecting fraud risk assessment

Inquires	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Inquires with those charged with government					
Supervising process of identification and assessment of fraud risk established by management	68	3.00	4.00	3.76	.42734
Supervising assessment of internal control for mitigating fraud risks committed by management	68	1.00	4.00	3.47	.78170
Those charged with government has knowledge, suspicion of fraud risk committed by management and set up accepted fraud risks to financial statements.	68	2.00	5.00	3.70	.89874
Inquires with management					
Understanding and suspecting fraud risk factors affecting financial statements.	68	2.00	5.00	3.76	.88297

Inquires	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Management designs and operates internal control to detect, prevent fraud risks and mitigate material misstatement due to fraudulent financial reporting.	68	2.00	5.00	3.58	.77720
Management communicates frequently with those charged with government about the process of identifying and responding fraud risks presented.	68	2.00	4.00	3.47	.61013
Management frequently reports those charged with government and Audit Committee or Control Board about suspicion and findings of significant fraud risks	68	2.00	4.00	3.45	.61013
Inquires with employees within entity					
Employees engaged business operations not involved in preparing financial statements	68	3.00	5.00	3.76	.54956
Employees involved in initiating, processing or recording complex or unusual transactions	68	2.00	5.00	3.41	.85055
Employees of human resources department, in-house legal counsel, chief ethics officer or equivalent person charged for dealing with allegations of fraud	68	2.00	5.00	2.75	.76811
Information obtained from entity's employees affecting fraud risk assessment					
Employees understand fraud risks and fraud existed entity, including management fraud.	68	2.00	4.00	3.76	.54956

Inquires	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Inquiries with employees who have ever been requested to perform non-compliant control activities by management	68	1.00	5.00	3.41	1.04002
Inquiries with employees who have knowledge about accounting estimates for bias by management and related party has not disclosed in notes to financial statements.	68	2.00	4.00	3.00	.91423
Inquires with Internal Audit Department and Control Board					
Internal auditor or Control Board has knowledge about fraud risks presented in entity	68	2.00	4.00	3.35	.76811
Inquiries internal auditors or Control Board about internal control detected and prevented fraud risks, mitigated material misstatements due to fraudulent financial reporting	68	2.00	5.00	3.47	.85467
Management has appropriate responds when the internal control has detected fraud risks.	68	3.00	5.00	3.76	.64917
Valid N (listwise)	68				

(Source: Results from the authors' study)

3.2. Descriptive statistics results of analytical procedures affecting fraud risk assessment

In audit plan, analytical procedures are used frequently and popularly to identify significant or unusual fluctuation of items and transaction in the financial statements. The auditors often use analytical techniques including trend analysis and ratio analysis (4.11 points and 4.29 points). However, linear regression techniques are not commonly used in fraudulent risk assessments (2.74 points).

Table 2. Statistical description of analytical procedures affecting fraud risk assessment

Priminary Analytical Procedures	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Trend analysis	68	2.00	5.00	4.11	.90652

Ratio analysis	68	3.00	5.00	4.29	.67046
Regression analysis	68	1.00	4.00	2.74	.73062
Valid N (listwise)	68				

(Source: Results from the authors' study)

For vertical analysis, the auditors often use financial ratios to determine the financial relationship between items in financial statements. The results show that the groups of profitability and performance ratios are likely to predict fraud risk assessment at high levels with average score of 3.8 points. Leverage ratios and liquidity activity ratios were assessed fraud risk at lowest level (3.21 and 3.17 points).

Table 3. Statistical description of financial ratio analysis affecting fraud risk assessment

Financial ratio analysis	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Liquidity activity ratio	68	2.00	5.00	3.17	.862
Profitability ratio	68	2.00	5.00	3.88	.763
Leverage ratio	68	2.00	4.00	3.21	.696
Performance ratio	68	3.00	5.00	3.85	.474
Valid N (listwise)	68				

(Source: Results from the authors' study)

Through the results of the survey of fraud risk assessment in the audit planning phase, the audit firms have properly implemented audit procedures in accordance with Vietnam standards of auditing, especially analytical procedures and inquires. Based on the fraud risk assessment, the auditors determine the risk of fraud at the financial statement level and assertion level which will help the auditors determine effective audit procedures to detect fraud in financial statements.

4. Conclusions and Policy Implications

Throughout the results of survey, fraud risk assessment procedures were properly implemented in auditing firms in compliance with Vietnam standard on auditing and played an important role in assisting the auditor in identifying fraud risks.

Analytical procedures are important fraud risk assessment procedures for identifying material misstatements due to fraudulent financial reporting. These techniques are often used in analytical procedures including trend analysis and ratio analysis. The results of the study are similar to Kaminski et al. (2004), Le Nguyen The Cuong (2013), Dalnial et al. (2014) but contrary to research results of Ly Tran Kim Ngan (2011), Nguyen Thi Huong Giang (2013) shown that preliminary analytical procedures are not so effective in assessing fraud risk. However, regression analysis has not commonly used in the identification of fraud risks in the level of financial statements and assertion level of audit firms in Vietnam.

Inquires were highly evaluated in the gathering of information in fraud risk assessments. The results of the study are similar to that of Le Nguyen The Cuong (2013). The results of the study have shown that the the most effective inquires with those charged with government in assessing risks of fraudulent financial reporting. The those charged with government is

responsible for overseeing fraud risk assessment and control procedures in preparing financial statements, especially for the risk of management override control. However, inquiries with internal auditors or Control Board are not evaluated high level. The auditors argued that the internal auditors or Control Board are not play appropriate role in monitoring the fraud risks of the mangagement.

Through the audit procedures taken in the fraud risk assessment, the auditors determine the risks of material misstatement due to fraudulent financial reporting and allocate the risk of material misstatement to these items in financial statements. The auditors design effective audit procedures to detect fraud presented in financial statement.

However, there were several limitations to this study. First, regarding the scope of the study, the author has focused on the fraud risk assessment regarding fraudulent financial reporting but has not studied risks of misappropriation of assets. Second, the author has concentrated on sending questionnaires to the independent auditors. The future research will expand the interviewees such as internal auditors, fraud investigators.

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Auditors' Behavior Impact on The Quality of Auditing - Experimental Research in Hochiminh City

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Abstract

Auditing is valued for its ability to provide independent assurance of the credibility of accounting information, which improves resource allocation and contracting efficiency. This article identifies the auditor's behavior affecting the quality of the audit. It also measures the impact of each of the auditor's actions on the quality of the audit activity. The results of the model have eight factors that affect the quality of the audit, those are the attitude of auditors, independence, industry expertise, qualifications of auditors, experience, time audit, quality control procedures, and process of auditing. The empirical findings used to enhance the quality of the audit for audit firms.

Keywords: *Behavior of auditors, Industry expertise, Qualifications of auditors; Process of auditing*

1. Introduction

True and fair are the opinion of the independent auditor on the financial statements. In the current of business environment, relative parties are often conflicting, so they need true and fair information. Therefore, this work is not only mean of reliability financial information but also a tool for monitoring information of society. In the high pressure environment, auditors do not comply with professional ethics will have a serious impact on the national economy.

The Andersen Auditing Company's event violated the code of professional ethics, focusing on profits to provide misleading audit reports about Enron. The collapse of Enron has caused great damage to the US economy. It has destroyed the value of the market, negatively affecting the economy, causing distrust for investors. As a result, the prestige of the auditing

industry has been severely reduced. In addition to the bankruptcy of Enron, in developed countries there are financial scandals and audit failures such as Tyco International, WorldCom, Global Crossing, etc. Therefore, the proposal about the auditors' behavior to the quality of audit for audit firms are needed to risks in competitive environment.

In Vietnam, there are not many researches related to this topic. The published topics related to auditing quality to focus on a specific group of factors. From the achievement and limitation of previous studies, the author acknowledges the need for a more study of auditor behavior affecting the quality of auditing. Particularly, previous studies have not addressed the ethical impact factor. In Vietnam, auditing is not yet developed, but auditing is a very popular profession in the world and has a long history of development. Therefore, in these countries auditors are good in quality, quantity, experienced and able to meet the requirements of work in a flexible and sensitive way.

Therefore, the objective of this article is to use and develop a research model that measures the impact of auditor behavior on the quality of auditing in Vietnam.

2. Literature Review - Theoretical Framework and Research Methods

2.1 Literature Review

There are many pieces of research on the behavior and the quality of audit. Representatively Cacello & et al. (1992) studied surveyed high-ranking auditors, preparers, and users as a basis for comparing their perceptions of the underlying components of audit quality. Usable responses from 245 audit partners, 264 Fortune 1000 controllers, and 120 sophisticated users were distilled into 12 salient components using factor analysis. Characteristics related to members of the audit team were generally perceived to be more important to audit quality than characteristics related to the audit firm itself, such as litigation record. The four factors reported to be most important in determining audit quality were audit team and firm experience with the client, industry expertise (especially within the audit team), responsiveness to client needs, and compliance with the general standards (competence, independence, and due care) of generally accepted auditing standards (GAAS).

After that, there are many pieces of research on the auditors' behavior to the quality of audits. Behn et al. (1997) investigated the relationship between the change of auditors and their work experience positively influencing the quality of audit. The quality measurement factors of his audit include professional skepticism, experience, customer satisfaction, quality control procedures, professional qualification, industry proficiency, and independence.

According to Francis (2011) presents a general framework for auditing quality research. The framework is designed to help professional auditors and managers better understand audit quality control. The research will focus mainly on auditing research: inputs such as auditing testing, auditing team; audit process; Auditing and auditing markets; Institutions; economic environment.

In Vietnam, the quality of audits at Vietnamese auditing firms also attracts attention from researchers. Phan Van Dung (2016) mentioned and results show that there are 5 group factors affecting the quality of auditing firms in Vietnam, based on the process of auditing activities and the audit quality framework: (i) Input factors: scale and level of specialty; Level of expertise; Independence; The perception of the auditors and the board of directors of the auditing enterprise. (ii) process factor: audit methodology. (iii) Output factor: Auditing fee. (iv) Interaction Factor: Business Strategy; Cost audit; The term of the auditor; Organize quality control from within. (v) Contextual factors: External quality control organization; Legal system; Quality training human resources.

2.2 Theoretical Framework

Audit quality

Audit quality that reflects auditing's close association with financial reporting quality, and that considers the constraints imposed by the firm's financial reporting system and innate characteristics. Specifically, It defines higher audit quality as “greater assurance that the financial statements faithfully reflect the firm's underlying economics, conditioned on its financial reporting system and innate characteristics (DeFond, 2014).

Code of ethics

Frankel (1989) identifies the enhancement of reputation and public trust as one of the primary functions of a code of ethics. Auditors are extremely concerned with preserving their reputation for quality work. The auditor's reputation has been shown to serve as an “endogenous mechanism that generates high audit effort and correspondingly high audit quality when the demand for an auditor's services depends on a reputation for supplying high-quality audit reports” (Mayhew, 2001). The Principles of the Code of Professional Conduct establish the high moral and ethical standards that constitute the CPA's ideal public image. Over the years, the Code has been periodically adjusted to reflect society's changing norms and values since threats of extinction can stem from failure to perceive the changing environment or from failure to act on changes taking place (Higgins and Olson, 1972).

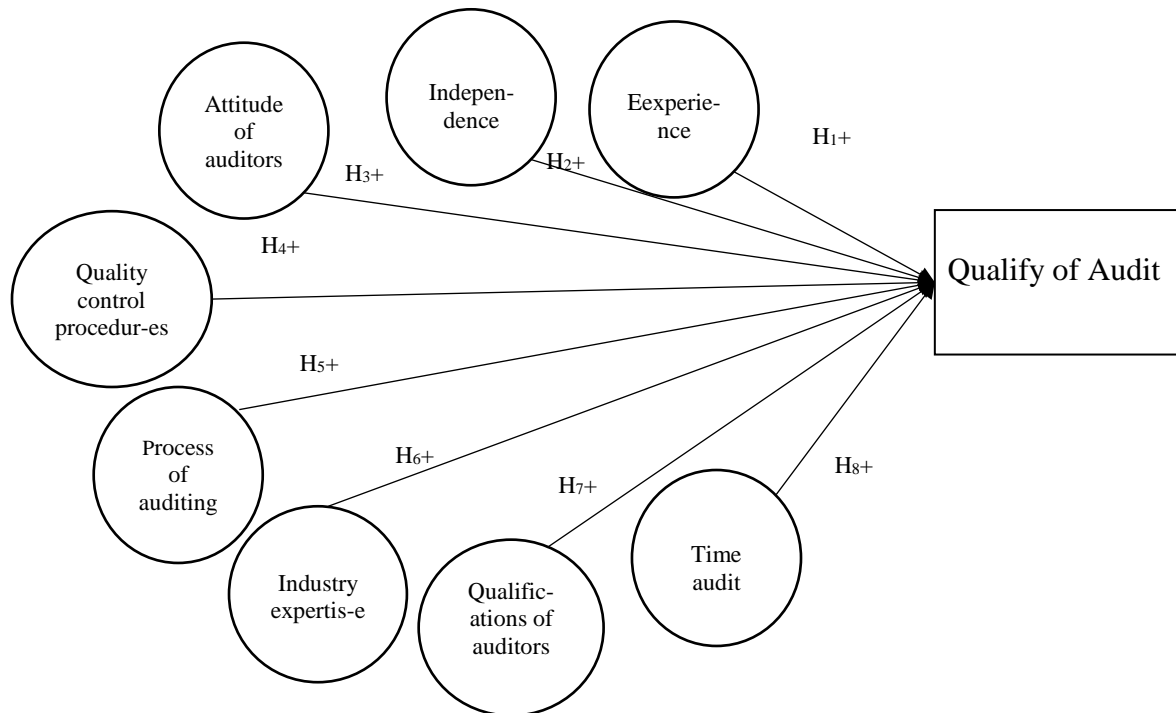
According to IESBA, a committee of IFAC, the five fundamental principles of code of ethics are (1) *Integrity*: A professional accountant should be straightforward and honest in all professional and business relationships; (2) *Objectivity*: A professional accountant should not allow bias, conflict of interest or undue influence of others to override profession; (3) *Professional competence and due care*: A professional accountant has a continuing duty to maintain professional knowledge and skill at the level required to ensure that a client or employer receives competent professional services based on current developments in practice, legislation and techniques. A professional accountant should act diligently and in accordance with applicable technical and professional standards. (4) *Confidentiality*: A professional accountant should respect the confidentiality of information acquired as a result of professional and business relationships and should not disclose any such information to third parties without proper and specific authority unless there is a legal or professional right or duty to disclose. Confidential information acquired as a result of professional and business

relationships should not be used for the personal advantage of the professional accountant or third parties. (5) *Professional behavior*: A professional accountant should comply with relevant laws and regulations and should avoid any action that discredits the profession.

2.3 Research model and hypotheses

As the literature review and theoretical framework above, through the research steps, the authors identifies 8 factors with 30 variables that affect the quality of audit. Therefore, the proposed research model is as follows:

Figure 1: Research model



(Source: Authors)

2.4 Research Methods

The research was conducted in two steps:

(1) Step 1: Qualitative research by developing concepts, measurement scales and independent variables and modification of independent variables to be in line with reality.

(2) Step 2: Quantitative research uses the Cronbach Alpha reliability coefficient to test the degree to which the items in the scale correlate. Exploratory Factor Analysis (EFA) is used to examine the factors that influence and identify the factors that are considered appropriate and at the same time uses multivariate linear regression analyses. The factors and impact of each factor on the auditor's behavior to the quality of the audit.

By reviewing related research documents and regulations on auditor's behavior and code of ethic, the author identified eight independent factors with 30 scales that are believed to affect a dependent variable is "quality of audit".

2.5. Data processing methods

For research purposes, the author undertook primary data collection to serve the testing of the research model. Primary data was collected through the method of collecting documents, methods of interviewing managers of firms. The questionnaire consists of independent variables that measure the impact of the factors that affect the quality of the audit testing models the Likert scale for the whole questionnaire: 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree. The surveyed subjects are members of the Board of Directors, Board of Directors, Auditors, Accountant, experts and lecturers who are knowledgeable about the auditing.

To use the EFA test, the sample size must be large. According to Hair (2006), the sample size could be determined by the formula: $n \geq 50 + 8k$, where k is the independent variable of the model. In this study, the number of independent variables included in the analysis was 8 with 30 independent variables. Thus, the sample size must be at least $n = 50 + 8 * 8 = 114$. The author has issued 350 questionnaires for the period from May 2018 to August 2018, collecting 305 valid votes. , the remaining 45 votes are invalid, so the topic using the sample size 305 is larger than the minimum sample size.

3. Results and Discussion

3.1. Reliability statistics of the measurement scale

Table 1: Cronbach's coefficient alpha reliability test

No	Variables	Independent variables	Cronbach's Alpha
1	Attitude of auditors (TDNN)	3	0.882
2	Industry expertise (CSNN)	3	0.886
3	Experience (KN)	4	0.891
4	Time audit (TGKT)	3	0.812
5	Independence (DL)	4	0.898
6	Process of auditing (QTKT)	5	0.894
7	Quality control procedures (KSCL)	4	0.892
8	Qualifications of auditors (TDCM)	1	0.838

Source: Authors' analyses

Cronbach's coefficient alpha reliability (Cronbach Alpha test) improves the auditors' behaviour impact on the quality of auditing. The Cronbach Alpha coefficient of 0.6 indicates that this scale is good. However, if item-total correlation is considered, no variable is excluded from the model because it is less than 0.3. Thus, the measurement variables are used in the next exploratory factor analysis.

3.2. Exploratory Factor Analysis – EFA

Table 2: KMO and Bartlett's Results

KMO (Kaiser-Meyer-Olkin)		.854
	Approx. Chi-Square	530.590
Bartlett's Model	Degree of freedom	10
	Sig (P – value)	.000

Source: Authors' analyses

The EFA eligibility test shows that the KMO = 0.854 satisfies the condition $0.5 < \text{KMO} = 0.854 < 1$, so the EFA corresponds to the data. The correlation test results, KMO and Bartlett test, Bartlett test has Sig. < 0.01 , so independent variables have the linear relationship with the representative variables.

3.3. Principal Components Analysis

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.035	60.707	60.707	3.035	60.707	60.707
2	.597	11.935	72.642			
3	.497	9.947	82.589			
4	.462	9.232	91.820			
5	.409	8.180	100.000			

Extraction Method: Principal Component Analysis.

Source: Authors' analyses

Cumulative % of Squared Loadings after rotation is 60.707% which means that 60.707 of changes in components is explained by independent variables (Factor components)

3.4. EFA-Exploratory Factor Analysis Results

**Table 4: EFA-Exploratory Factor Analysis
Rotated Component Matrix^a**

	Component							
	1	2	3	4	5	6	7	8
KN4	.834							
KN3	.802							
KN2	.799							
KN1	.764							
DL1		.847						
DL2		.793						
DL3		.780						
DL4	.322	.755						
TDNN1			.903					
TDNN4			.857					
TDNN3			.851					
TDNN2			.820					
KSCL3				.862				
KSCL4				.796				
KSCL2				.789				
KSCL1	.338	.371		.702				
QTKT1					.921			
QTKT4					.920			
QTKT3					.872			
CSNN2						.883		
CSNN1						.879		
CSNN3						.861		
TDCM2							.907	
TDCM3							.895	
TDCM1							.893	
TGKT1								.919
TGKT3								.782
TGKT2								.772

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 6 iterations.

Source: Authors' analyses

Thus, through the extraction method of the Principal Components Analysis and the Varimax rotation, the results of eight groups of factors, including the 30 specific scales, remain unchanged from the original.

3.5. Multiple Linear Regression Results

This research is conducted using multiple linear regression with the variable selection in which all variables in a block are entered in a single step (the enter regression method).

Table 5: Statistical results of the regression model by the Enter method

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-.377	.190		-1.981	.048		
TDNN	.269	.023	.386	11.597	.000	.987	1.014
DL	.203	.033	.278	6.078	.000	.523	1.911
TDCM	.125	.018	.229	6.829	.000	.969	1.032
CSNN	.122	.016	.271	7.514	.000	.840	1.190
TGKT	.077	.024	.126	3.174	.002	.694	1.442
KN	.097	.032	.133	3.046	.003	.571	1.752
KSCL	.080	.030	.114	2.615	.009	.574	1.743
QTKT	.064	.023	.110	2.732	.007	.669	1.494

a. Dependent Variable: CLKT

Source: Authors' analyses

In Table 5, when we use t_{stat} and $t_{\alpha/2}$ of variables to assess the reliability of variables, the independent variables (TDNN, DL, TDCM, CSNN, TGKT, KN, KSCL, QTKT) are significant with p -values < 0.05 . Besides, VIFs of betas are smaller than 10 and the tolerance which is smaller than 0.5 to show that the multicollinearity does not exist.

3.6. The Assessment of the suitability of the multivariate linear regression model

The below table (Table 6) shows that the correlation coefficient value is $0.824 > 0.5$. Thus, this is the appropriate model to use for evaluating the relationship between dependent and independent variables. In addition, the coefficient of determination of the regression adjusted R^2 model is 0.670. That is, the linear regression model is constructed in accordance with the 67.0% data. This indicates that about 67.0% of the variation of the dependent variable is due to the effects of independent variables (QTKT, TDNN, CSNN, TDCM, KN, TGKT, KSCL, DL), while other variations are due to errors of other factors. Test Durbin Watson = 1.841, which situates in the range of $1 < D < 3$, so there is no autocorrelation of the residuals.

Table 6: Assessment of the suitability of the multivariate linear regression model

Model	R	R ²	Adjusted-R ²	Standard error of estimation	Changes in Statistics				Ratio
					R ² after change	F-statistics after change	DF 1	DF 2	Durbin-Watson
1	.824 ^a	.679	.670	.21969	1.841	.824 ^a	.679	.670	1.841

a. Predictors: (Constant), QTKT, TDNN, CSNN, TDCM, KN, TGKT, KSCL, DL

b Dependent variable: CLKT

Source: Authors' analyses

Based on the above results, the regression equation estimates the factors that influence the improvement of the auditors' behavior to the quality of audit is shown by the impact level from high to low as follows:

$$\begin{aligned} \text{Qualify Audit} = & 0,386 * \text{Attitude of auditors} + 0,278 * \text{Independence} + \\ & + 0,229 * \text{Qualifications of auditors} + 0,271 * \text{Industry expertise} + \\ & + 0,126 * \text{Time audit} + 0,133 * \text{Experience} + \\ & + 0,114 * \text{Quality control procedures} + 0,110 * \text{Process of auditing} \end{aligned}$$

Based on the standardized regression coefficients, we have the results for testing hypotheses as follows:

Table 7: Summary of the results of testing hypotheses

Hypotheses	The statistical meaning or real meaning
<i>(H1): Experience has the same effect (+) with improving of the auditors' behavior in the direction of responding to changes in the quality of audit.</i>	Yes
<i>(H2): Independence has the same effect (+) with improving of the auditors' behavior in the direction of responding to changes in the quality of audit.</i>	Yes
<i>(H3): Attitude of auditors has the same effect (+) with improving the auditors' behavior in the direction of responding to changes in the quality of audit.</i>	Yes
<i>(H4): Quality control procedures works in the same direction (+) with the improvement of the auditors' behavior in the direction of responding to changes in the quality of audit..</i>	Yes
<i>(H5): Process of auditing has the same effect (+) with the improvement of the auditors' behavior in the direction of responding to changes in the quality of audit..</i>	Yes

Hypotheses	The statistical meaning or real meaning
<i>(H6): Industry expertise have the same effect (+) with the improvement of the auditors' behavior in the direction of responding to changes in the quality of audit..</i>	Yes
<i>(H7): Qualifications of auditors have the same impact (+) with improving of the auditors' behavior in the direction of responding to changes in the quality of audit..</i>	Yes
<i>(H8): Time audit have the same effect (+) with the improvement of the auditors' behavior in the direction of responding to changes in the quality of audit..</i>	Yes

Source: Authors' analyses

4. Conclusions and Policy Implications

Through the testing of the research model, it can be confirmed that there are eight factors affecting the efficiency of the auditors' behavior to the quality of audit of audit firms at Ho Chi Minh city in order from high to low as follows:

Independent variables	Absolute value
Attitude of auditors	0.386
Independence	0.278
Industry expertise	0.271
Qualifications of auditors	0.229
Experience	0.133
Time audit	0.126
Quality control procedures	0.114
Process of auditing	0.110

Source: Authors' analyses

Derived from the results of testing the above research model, the authors give some policy implications to improve the auditors' behavior to the quality of audit of audit firms at Ho Chi Minh city as follows:

First, attitude of auditors, the factor with the highest level of impact in the model ($\beta=0,386$), this tell us “the setting the goal code of ethics is the most important issue for auditors”, so the professional association should provide more specific guidance aattitude of professional auditors to help auditing firms build the working environment as well as the link between auditors and leaders, to cultivate attitudes professional skepticism.

There are seminars or training related to professional skepticism, where the professional association or auditing firms should regularly hold seminars or training related to

professional skepticism. Auditors have the opportunity to share as well as learn experience. Understanding the professional skepticism in the audit is not easy, the correct use of professional skepticism is more difficult and the process of manipulating and promoting professional skepticism needs a long time. The study of factors affecting professional skepticism is necessary to contribute to improving the quality of auditing today.

Secondly, the independence, according to the auditing standards, auditors must always be independent. Auditors are not allowed to audit for clients whose auditors have relations about family or economic. Independence is principle of auditing. This is considered a necessary condition for auditing firms to achieve their objectives in auditing.

Thirdly, for the industry expertise, auditors must accumulate experience in each specific field so that they can understand the business sector of the enterprise they are auditing. Auditing first should pay attention to the recruitment and training of qualified employees in the industry to meet the auditing needs of each type of enterprise. During the working time at the company, the auditors must be constantly trained through the work process and courses.

Finally, for the qualifications of auditors, experience, time audit, quality control procedures, process of auditing, The auditing firms should be organized some courses so that auditors can catch up and adapt to modern IT applications, with modern auditing tools to meet the increasing demands of the work. The auditors need to be trained and fostered so as to firmly grasp the new auditing cycle and programs set up on the basis of technology and digital; Proficiency in auditing software, understanding of the process and how to synthesize accounting information, how to prepare and present financial statements in accordance with financial reporting standards in the context of digital age.

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**Overview of the Factors Influencing The Independent Audit Opinion
on Auditing Reports of Listed Firms**

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Abstract

Audit opinion is an important factor determining the reliability of financial statements. There have been a lot of frauds stemming from information in financial reports that are caused by independent auditors opinion. This article provides an overview of the factors influencing independent auditing opinions from domestic as well as foreign studies to provide future research direction. The author uses the methodology of secondary and international literature to synthesize the influence factors. The research overview will provide a comprehensive review of academic research pertaining to factors, models, and sample sizes that have been researched to help other researchers have a meaningful background and considerations impact factors that need to be further tested.

Keyword: *Audit opinions, Financial statements, Influencing factors, Research overview*

1. Introduction

Financial statement is an important report of every business. Yuh (2013) has identified five focus groups using information from financial statements including investors, government, employees, customers and public.

In Vietnam, in Cafef statistics, with 50 largest companies in Vietnam stock market, it only 9 companies listed in Vietnam have been audited by local auditors and 41 companies are audited by Big 4, in 2016. It can explained by the level of trust in these auditing companies but in 2011 a scandal of the Far Eastern Pharmacy (DVD) was released that caused the company's stock to drop sharply. DVD was canceled its listing on HCM stock exchange. The company also terminated operations about a month later. It is worth mentioning that the DVD was audited by Ernst & Young (Big 4). This has caused the quality

of Big 4 audits to be questionable and led to the question of what factors affect the audit opinion of the auditor in Vietnam.

As such importance, the identification of factors affecting audit opinions become an important target for both academic and financial term. Firstly, identifying the factors affecting the audit opinion helps the companies to streamline their resources in order to obtain more favorable audit opinions or otherwise support the firm set up an effective management system, enhance compliance and prevent fraud. The second factor is that identifying these factors further can enhance the transparency of financial reporting information of listed companies on the stock market or otherwise identifies factors that help investors, Governments, creditors and interested parties on independent auditing opinions; it can self-assess and make appropriate decisions. Thirdly, specifically determining the factors affecting the audit opinion is of great significance to the auditors themselves.

The study review consists of two main parts: Part 1: An overview of the definition of audit opinion, Part 2: An overview of the impact factors. Part 3, Overview of models, methods, sample size and time spent doing research to explore the factors.

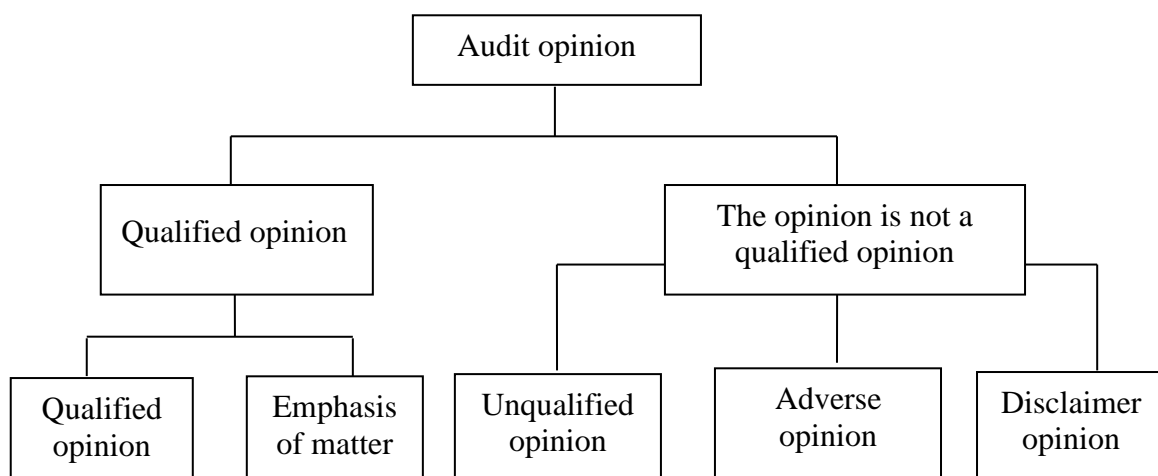
2. Literature Review

2.1. Concept of independent audit opinion

According to the International Federation of Accountants (IFAC), the definition of auditing is the independent auditor's examination and presentation of his opinion on financial statements. An audit opinion is an part of the audit report, it is issued by an independent auditor after auditing the financial statements and related reports. In summary, it is possible to understand that audit opinion is the declaration by an independent auditor of the client's financial statements as a result of auditor's audit, the same is true if the standard of measurement of audit opinion is dependent on that country under IFRS, US GAAP or local GAAP.

The classification of Arens et al. (2009), ISA 700 and VAS 705, 706 can be summarized as follows.

Diagram 01- Types of auditing opinions



Source: self-synthesis

(1) Qualified opinion is issued by the auditor when the auditor discovers that there is no material misstatement after the examination. This opinion shows that the financial statements of the entities are prepared and presented honest, fairly and in accordance with the accounting framework in use. An honest opinion with note of note is used when there are some issues to consider, such as change of principal, or the company is experiencing some financial problems. heavy losses, or bankruptcy (going concern problem).

(2) According to Vietnam Auditing Standard No. 705 - Issued in conjunction with the Ministry of Finance's Circular No. 214/2012 / TT-BTC dated December 6, 2012, the opinion is not an accepted opinion. including:

(a) Unqualified opinion: The auditor presented the audit exceptional opinion when:
(i) Based on the appropriate audit evidence collected, the auditor concludes that the errors, individually or collectively, have a material but not overlapping effect on the financial statements; Or (ii) The auditor can not obtain sufficient audit evidence as a basis for the audit opinion, but the auditor concludes that the possible effects of the errors have not been provided. may be material but not diffuse to the financial statements.

(b) Adverse opinion: The auditor presents conflicting audit opinions based on the audit evidence that is appropriate and complete, the auditor concludes that the errors, have a significant and spillover effect on the financial statements.

(c) Disclaimer opinion: The auditor must refuse to provide an opinion when the auditor is unable to obtain sufficient audit evidence to serve as a basis for issuing audit. The panel concluded that the possible effects of undetected errors could be significant and diffuse to the financial statements. These comments on the severity are ordered in ascending order: Total Acceptance, Exclusion, Contradiction and Refusal.

2.2 Overview of the research on the factors affecting the independent audit opinion

Research in the world studies the relationship between the type of opinion issued in the audit report and certain characteristics that belong to the audited company and the auditor or even the points are not related to these two subjects but affect the audit opinion. Most studies focus on variables that may explain or influence the auditor's opinion in the audit report.

2.2.1 Results and Discussion

a. Group of factors related to auditing companies:

(i) Auditor size: Muchler (1986) researched in the US and concludes that companies audited by non-Big 8 companies did not comment on continuous assumptions. with small audited companies and a financial crisis. At the same time, Defond et al. (2002), companies audited by multinational auditors will be more likely to receive audit reports with comments related to the assumption of continued operations. However, the results of the Spanish study by José Luis Gallizo et al. (2015) have shown the opposite. This research has shown that small-scale auditing firms have the potential to make auditing companies receive audit opinions related to continued assumptions.

(ii) Audit turnover: Oliver and Wu (2012) conclude that auditors are willing to quit their independence by issuing fewer auditing opinions stating their continued viability longer in China. However, Carcello and Neal (2000) did not find the adverse effects of the audit term on the likelihood of companies with financial hardship in the United States receiving audit opinions that note their continued operability (Going Concern Modified Opinion).

(iii) Auditor independence: Auditor independence is one of the most important issues in the overall economic environment because of the huge accounting scandals (Li, 2009). The Sarbanes-Oxley Act that entered into force in 2002 limited the scope of non-audit services to enhance the independence of auditors. Zhang et al. (2007) in China argued that strong economic ties between the auditor and the auditor make the auditor ignore weaknesses in internal control. Ahadiat (2011) studies in the UK and Australia declare that auditors are more likely to give full acceptance when an auditing firm provides a significant non-audit service level to the auditor.

b. Group of factors related to the audited company:

(i) Financial Ratios

(a) Overall Financial Situation: Lina Rahmawati (2017) study in Indonesia shows the financial position of companies that have the opposite effect on the ability to receive audit opinions about continuous operation. A good financial position is less likely to receive an audit opinion related to the continued assumption. The opposite relationship of this study was supported by studies by Junaidi et al. (2012), Tjahjani et al. (2014). However, in the study by Lina Rahmawati (2017, Wulandari (2014), Indonesia's study of financial results does not affect the audit opinion on continued operations.

(b) Liquidity: Gallizo et al. (2015) have concluded in the Spanish market as follows: Probability of audit opinions related to the assumption of continued activity does not increase if the analysis is as follows: Solvency ratio and liquidity are higher. However, Masyitoh et al. (2010) studied in Indonesia suggested that cash flow and liquidity did not affect audit opinion.

(c) Debt and financial leverage: The study by Lina Rahmawati (2017) mentions the findings of Aryantika and Rasmini (2015) in Indonesia and (2010) in China are the influential levers the audit opinion which is related to the continuous assumption. However, Lina Rahmawati (2017) has the opposite result when there is no relationship between leverage and audit opinion on the ability to operate continuously.

(d) Profit-Earned Auditing Year: Gallizo and Saladrigues (2016) in Spain found that low returns increased the likelihood that auditors would be required to adjust their ability to operate continuously (Going Concern Modified Opinion) and thus confirm low profit assumptions as a factor in early detection of unfavorable audit opinion. Lina Rahmawati (2017) in Indonesia also noted that the company's profitability significantly diminished its ability to receive auditing opinions on continued operations. However, in the study by Lina Rahmawati (2017), authors Aryantika and Rasmini (2015), Hadori and Sudibyo (2014),

Wulandari (2014), and Masyitoh et al. (2010) There is no impact on the audit opinion related to ongoing operations.

(e) *Previous year's business profit*: Tsiporidou and Spathis (2014) in Greece concluded that companies with low financial results during the year were audited or had losses in the previous year and that the size of the small firm more likely to receive comments regarding the assumption of continued activity. A similar conclusion was reached by Gallizo and Saladríguez (2016) in Spain. As a result of them, variable losses explain best the probability of getting an opinion regarding the assumption of continued activity.

(ii) **Company Size**: In the Lina Rahmawati (2017) study, Arsianto and Rahardjo (2013), Rakatenda and Putra (2016) in Indonesia found the magnitude of the company influencing the feedback audit of the ability to operate continuously. Meanwhile Lina Rahmawati (2017), Tjahjani and Novianti (2014) in Indonesia claim that the size of the company is not related to the receipt of audit opinion on the ability to operate continuously.

(iii) **Related information disclosure**: Saeid Jabbarzadeh Kangarlouei et al. (2013) in Iran found the hypothesis that the company proactively presents information related to ongoing operations that affect the audit opinion assumption of continuous operation. This result supports the previous research results of Junaidi and Jogiyanto (2010) and Haron et al. (2009), which states that the presentation of information related to continuous activity has a significant influence on the issuance of opinions of the auditor's continuous assumption.

(iv) **Audit Committee**: Masyitoh et al. (2010) study in Indonesia indicates that the audit committee has no influence on the audit opinion.

(v) **Group of Corporate Governance Factors**: Solan et al. (1996) investigated the relationship between the quality of corporate governance and the misleading accounting information with the potential for fraud. And the main reason is the probability that internal managers are more financially competent than board members, the viability of audit committees and large outside shareholders is less, the chief executive the executive and chairman of the board is a person.

Pereira (2009) has pointed out that individuals affected by the adoption of audit opinions are not fully-accepted members of the board of directors with no financial experience in Brazil. Ahmet Ozcan (2016) in Spain also finds age and % of external ownership (besides financial factors including: growth, current rate, cash ratio, ROA, ROE, margins, total assets, asset turnover, and capital turnover ratios) are statistically significant differences between companies with full audit acceptances and Companies have negative auditing opinions.

c. Group of other factors:

(i) **Mitigating Evidence**: Saeid Jabbarzadeh Kangarlouei et al. (2013) in Iran found the hypothesis of mitigating (the company's plan to face economic conditions) It can affect the audit assumption of continuous operation.

(ii) Previous audit opinion: Companies that received a full acceptance in the first year related to the assumption of continued activity are more likely to receive similar comments the current year is concluded in Muchler's (1985) study. This assessment was conducted by Ha Thi Thuy et al (2016) with VN133 companies in Vietnam.

2.3 An overview of the methodology, sample and timeframe, which have been used to explore the factors.

2.3.1 World overview

In the history of audit research, there were more and more variety of models and methods used to forecast audit opinions. Both modern statistical methods such as supporting vector machine, opening data mining, metadata and basic statistical methods such as descriptive statistics and regression model.

Some researches used modern statistical methods such as Mutchler (1985) by differential analysis for 83% accuracy, Altman (1968) with multivariate differential analysis to predict bankruptcy for US companies with 95% accuracy ...

Factors influencing the audit opinion having continuous prescriptive note are often the combination of Z-score and the regression model. For instance, José Luis Gallizo et al. (2015) started with companies with losses and assumed received audit opinions about continuous operation. Then they conducted the study for 2012 with the sample of 48 companies (½ received assumed audit opinions about continuous operation and ½ did not receive this opinion). Besides, Junaidi et al. (2012) in Indonesia conducted a study of 63 companies to examine the factors affecting assumed audit opinions for the period from 2005 to 2009.

The model using logistic regression model Turgay SAKİN (2017) in Turkey used a sample of 458 externally audited reports and 1,568 unqualified auditor's reports for the period from 2003 to 2012, Ahmet Özcan (2016) in Turkey with a sample of 180 companies between 2005 and 2014, Ali Jouri (2016) uses a sample of 90 listed companies in Iran. Caramanis and Spathis (2006) used a logistic regression model and an OLS method for accuracy at 90% on a sample scale of 185 listed companies in Athens, Greece. Spathis (2003) used a regression model and OLS method for the accurate percentage of 75% on a sample scale of 50 unqualified and 50 adverse opinion.

Some researches using both traditional and modern quantitative methods such as Spathis et al. (2003) which applied the UTADIS (Utilites's Addictives Discriminates) method and compared with the new statistical techniques such as discriminant analysis and logistic regression model. As a result, UTADIS is more effective with an accuracy of up to 80%.

2.3.2 Researches in Vietnam

In Vietnam, the researches on the factors affecting the audit opinion are still very limited. There are several studies related to auditing such as Pham Anh Thu (2017), Ha Thi Thuy et al (2016), Bui Thi Thuy (2014), Nguyen Thien Tu (2012) or the research of student

group of University of Economics, VNU on "Opinion shopping" study of industrial listed companies in Vietnam.

Among the researches in Vietnam, the most significant and relevant factor influencing the audit opinion is the work of Pham Anh Thu (2017) - Master thesis on Economics conducted at the University Economy TP. Ho Chi Minh. This dissertation examines the factors influencing the audit opinion on financial statements of listed companies on the HOSE. The authors used the regression model to predict the audit result for accuracy of 94.8%, with sample of 248 companies in 3 years. The author found 5 factors influencing: previous audit opinion, the size of the audit firm, EBIT, ROE, Debt / Total Assets and Total Asset Growth. However, this work is still limited in number of samples which is only on a stock exchange and ignores the opinions of continuous operation. Therefore, audit opinions in this work are only researched on two types which are unqualified and adverse opinion (the first branch of diagram 01 - item 2.1).

Move to the work of Ha Thi Thuy et al. (2016), which tested the factors affecting the assumed continuous audit opinions. The study is implemented using the Binary Logistic regression model with sample size of VN133 (companies listed on HOSE) from 2011 to 2014. Variables used in the model include: (1) Financial variables: financial ratio, liquidity, profitability, operating ratio (2) Non-financial variables: size of enterprise, size of auditing company, previous assumed continuous audit opinions. The accuracy of the model is 94%. However, this work is limited by the number of samples which is only companies listed on HOSE and the number of variables affects the unqualified audit opinion with the assumption of continuous operation.

3. Conclusion

Auditors are always essential people and gotten particular interest to auditing companies as well as those who use financial statements. On the side of auditing companies, the verification and expression of financial statements of enterprises should be very careful to avoid affecting the decisions of the users of the financial statements. On the side of the users of the financial report, many of the scandals that have taken place have deep roots from relying on audit opinions to make decisions. On the side of regulators, with the aim of enhancing transparency for financial markets and competing in independent auditing, the identification of factors affecting the audit opinion is necessary to have the appropriate management policy.

This article summarizes studies in the world and in Vietnam is an important aspect to study in Vietnam in the future. The author believes that this is an extraordinary exciting topic, following the rapid development of Vietnam as well as of the world and especially as the competition between auditing companies is getting fiercer, this topic will soon become hot spots that will be paid much attention at conferences or economic forums in Vietnam.

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**Building an Assessment Model about the Influence of Operational Audit
within Vietnam Cement Industry Corporation**

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Abstract

This research project was commissioned to examine the impacts of operational audit on the performance within Vietnam Cement Industry Corporation (VICEM), the biggest Cement Corporation in Vietnam. In order to collect the data, the researcher had interviewed eight managers who have interacted with operational audits or have been responsible for operational audits. The evidence from collected data had proved that the operational audit has played an important role in creating value added in VICEM. Recommendations made by operational auditors could be seen as useful guidance for improving performance. Operational audits can also help to prevent potential fault and error. The reason is that the audited bodies usually pay more attention on their works because they realised that their works will be audited by others.

Keyword: *Operational audit, Management, Performance.*

1. Introduction

Cement has been one of the earliest and largest industries formulated and developed in Vietnam. Its products were once presented at the Liege Exhibition in France in 1904. Further, Vietnam's cement has been exported to various countries including Far East, Vladivostok, Indonesia, China and Singapore etc (VICEM, 2018). Vietnam Cement Industry Corporation (VICEM) operates mainly in cement manufacturing and distribution. Along with major business activities, other business activities, including port operation, transportation, real estate investment, hotel, and restaurant, also play important roles in VICEM's business strategy.

Auditing has been defined as “a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between these assertions and established criteria and communicating the results to interested users” (Crockett, 1993: 22). Auditing has been classified into various categories. Financial audit and operational audit are two types of audit classifying base on specific object.

Operational Audit is defined by Chambers and Rand (2010: 4) as “the audit of any part of the business (operating unit, functional area, section, department or even business process, etc.) where the audit objective is to review the effectiveness, efficiency, and economy with which management is achieving its own objectives”.

In order to collect the data, the researcher had interviewed eight managers who have interacted with operational audits or have been responsible for operational audits. The evidence from collected data had proved that the operational audit has played an important role in creating value added in VICEM. Recommendations made by operational auditors could be seen as useful guidance for improving performance. Operational audits can also help to prevent potential fault and error. The reason is that the audited bodies usually pay more attention on their works because they realised that their works will be audited by others.

Operational audit has become popular in developed countries. However, it has just started in Vietnam. Therefore, this research may create new direction for researchers who are interested in the topic. This research also helped enhance the awareness of operational audit among Vietnamese organisations.

Research objectives

This research project was commissioned to examine how Operational Audit can help VICEM improve “three Es” - effectiveness, efficiency, and economy of its operations. This research question could be divided into two research objectives.

Firstly, the main objective of this research is to investigate and measure the impacts of operational audits within VICEM, especially its impacts on effectiveness, efficiency, and economy.

Secondly, the result of critical analyses and comprehensive evaluation about the actual situation at VICEM, along with the comparison with other countries enabled the researcher to suggest key recommendations which could help VICEM to promote the positive impacts of operational Audit and eventually to improve “three Es”.

Research Methodology

This research used both a quantitative and qualitative approach to collect data and answer the research questions. According to Bryman and Bell (2011: 628) mix methods research which is a combination of qualitative and quantitative research, has become more popular recently because quantitative and qualitative data can support together when doing the analysis. The researcher interviewed eight managers who have interacted with operational audits or have been responsible for operational audits.

The research found that the operational audit has played an important role in creating value added in VICEM. Recommendations made by operational auditors could be seen as useful guidance for improving performance. Operational audits can also help to prevent potential fault and error. The reason is that the audited bodies usually pay more attention on their works because they realised that their works will be audited by others.

2. Theoretical Framework and Methodology

2.1. Basic theory of an assessment model about the influence of operational audit within enterprise.

2.1.1. Operating operational audit in manufacturing organisations

What is an operational audit?

The term “Operational Audit” was first coined by Frederic E. Mints in 1954, even though Arthur H. Kent and other auditors had previously mentioned an “operations audit” as the expansion of auditing activity into non-accounting matters since March 1948 (Flesher and Zarzeski, 2002: 96). During the development process, the phrase ‘operational auditing’ has been interpreted in many different ways. The following definitions are more preferred:

Chambers and Rand (2010: 4) defined Operational Audit as “the audit of any part of the business (operating unit, functional area, section, department or even business process, etc.) where the audit objective is to review the effectiveness, efficiency, and economy with which management is achieving its own objectives”. The other definition stated by Driessen and Molenkamp (1993: 20) is that "The operational audit is an independent, internal review of an organizational unit or a process in which an opinion can be rendered systematically on a wide range of business management aspects in a short time on the basis of a few relevant indicators. The structure, existence and the operation of the internal organization can thus be tested discontinuously by means of standards ('do better')."

Although the ways in which authors used to explain the meaning of operational audit are deferent, it can be clearly seen that both authors agreed that an operational audit is a management tool as well as an audit of economy, efficiency, and effectiveness. These researches also addressed the roles of operational audits in improving performance. In particular, an operational auditor could bring forward recommendations which show that the assets could be utilised more efficiently and effectively. In other words, he or she would assist managers in performing their daily functions more economically and more effectively. Therefore, the term ‘operational audit’ is also called value-for-money (VFM) audit in English-speaking nations (Flesher and Zarzeski, 2002).

Why conduct an operational audit?

First, Managerial demand. The birth of operational audits after World War II is due to the needs of management. The limitation of resources required both public and private organisations to utilise the resources more effectively, economically and efficiently. Recently, the increasing need for such an audit is due to various factors including external factors and internal factors. In particular, according to Van Hulsentop cited in Driessen and

Molenkamp (1993) the increase in competition, the decrease of economic life of products and the significant development of technology could be seen as crucial external factors. He also determines internal factors including the changes in quantity and complexity of both administrative and technical activities. Therefore, Driessen and Molenkamp (1993) pointed out that managers should react more rapidly and more actively to external and internal changes.

Second, The other reason for the development of operational audit is its benefits which have been addressed in many studies. For example, the research of Driessen and Molenkamp (1993: 24) gives the evidence to support that an operational audit function has resulted in direct cost saving because assets can be utilized more effectively and efficiently. They also show that managers concentrate all their efforts on doing their jobs because they know that their implementation could be audited by operational auditors. As a result, the way in which the organisations' objectives set by senior management are translated and implemented by the management are directly involved. In addition, the research of Schwieger (1993: 9) and Crockett (1993: 22) point out that operational audits can also help managers evaluate how they are running their departments as a whole, while Flesher (1989: 22) believes that operational auditors can assist managers in performing their daily functions more effectively and economically. The important point to note here is that the regular review of operational auditors can discover problems which are often still vague. Although, these researches have shown many benefits of operational audits, the limitation of this research is that they did not demonstrate the models used to measure the influence of the operational audit. This implies that the examination of the impact of operational audits will need an appropriate model. In summary, an operational audit function in the organization generally results in the improvement of business management because, with the aid of operational auditors, the managers' decisions would be more critical and appropriate.

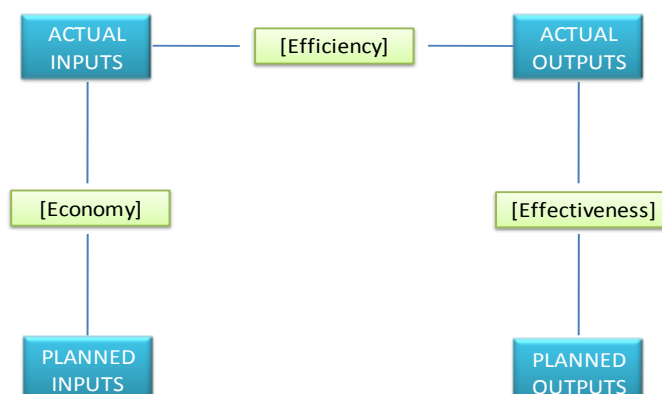
2.1.2. Auditing for the three Es

According to Chambers and Rand (2010: 15) an operational audit is auditing for the "three Es" – economy, effectiveness and efficiency so operational auditors have been looking for opportunities, and giving recommendations, which managers can use to design and implement business processes in order to improve their effectiveness, efficiency and economy. This implies that along with a general appraisal of operations, the auditors also need to evaluate and recommend about the three Es separately. However, the common mistake in evaluating the three Es lies in the failure of analysis of 'economy' as a separate factor.

Table 1 clearly describes the distinctions as well as the relationships between such factors. In particular, economic factors could be determined by the ratio between what the organisation planned to spend and what it actually spent on each unit of resource of given quality. As shown in the table, the lower the ratio between actual inputs and planned inputs, the more economically the operations are done. Efficiency measures output results in relationship with input factors. In other words, efficiency is a ratio between actual inputs and actual outputs. For instance, if the employees lack motivation or training or supervision, the actual outputs will be reduced. Actually, the conversion processes that turn the actual inputs available into actual outputs will not run smoothly or efficiently. The last 'E' of 'three Es' is effectiveness which is

calculated by the ratio between actual outputs and planned outputs. The higher this ratio is, the more effectively the organisation is running.

Table 1. The “three Es”



(Adapted from Chambers and Rand, 2010: 16)

Table 1 presumes that the organisation’s economy, effectiveness and efficiency are each measured against economy, effectiveness and efficiency targets which are set out by the organisation itself. The implication is that managers may believe themselves that they are implementing effectiveness, efficiency and economy but indeed they may be not when their performance is compared with others. In order to avoid this situation, managers should compare their targets with benchmark, competitors, and trends overtime.

2.2. Conceptual framework

After examining the current researches in the auditing sector, it can be clearly seen that operational audit was conceived to improve the management of audited bodies by making it more effective, and more efficient, and more economical. However, as mentioned before, in order to measure the impact of operational audit on the operations within VICEM, a conceptual framework needs to be used. This research adapted a model based on the research of Morin (2004) which discusses about the ways in which the impact of VFM audits can be measured. Nevertheless, as mentioned before, VFM audit has similar features as operational audit. The major distinction between VFM audit and operational audit is that the former one is usually used in the public sector, while the latter one can be used in both public and private sectors. Thus, the author believes that the adaption is reasonable.

According to Morin (2004) the impact of value-for-money audit can be measured by ten variables, namely the value VFM audit brings to audited bodies; the relevance of the recommendations given by the auditors; the preventive effect exerted by VFM audit on the auditees; the influence exerted by the VFM audit on auditees’ management practices; the

influence exerted by the VFM audit on the audited organisation's relations with interest groups; the perceived utility of auditor general reports; the concrete actions taken by audited managers following a VFM audit; organisational consequences of audits; personal consequences of audits; and global impact on the management of the organisation audited. This implies that these variables also can be used to evaluate the effect of operational audit on the operations in VICEM, if the research methodology enables the researcher to obtain and gather enough appropriate data.

2.3. Research methodology

2.3.1. Why is the research based on realist position?

Fisher et al (2010: 20) define realist research as “an approach that retains many of the ambitions of positivism but recognises, and comes to terms with, the subjective nature of research and the inevitable role of values in it”. In other words, the realist position tends to be applied by researchers who believe that the knowledge gained through research can accurately mirror reality itself. Although it can be argued that knowledge about the situation cannot logically derive the decisions about what ought to be done in any circumstances, such knowledge can give good indications of what should be done. The reason is that realist research looks for relationships between variables, and where possible attempts to establish chains of cause and effect. In particular, the researcher will attempt to determine dependent variables, which will move because of changes of others, independent variables. In order to identify the associations between variables, measurement and statistical methods are usually used. However, it does not mean that all realist researches have to use statistical methods. Indeed, there are many realist researches based on qualitative methods to identify whether there are any connections between variables (Fisher et al, 2010: 50). This will be discussed more deeply in the section of research methods.

Fisher et al (2010) believe that the difference between realist and interpretive research is as follows. The realist forms structure out of variables, whereas the interpretivist forms structures out of interpretations. In addition, the links between variables are cause and effect relationships, but the links between interpretations are dialogic. It means that in the interpretive approach, people develop their ideas through debate and conversation with themselves. The researchers also usually tend to map a range of complex views which they extract from the topic of the research.

Consequently, as mentioned above, the realist research can offer a better answer for researcher questions which regard cause and effect relationships, while the main purpose of this research is to investigate the impact of operational audit on VICEM's operations. In other words, this research question demonstrated the relationship between cause, the existence of operational audit, and the effect, the improvement of “three Es” – efficiency, effectiveness, and economy. Therefore, the author chose the realist approach for the research.

2.3.2. *How will the realist research be designed?*

This research design is taken place under the guidance of Fisher et al (2010), who address a number of simple steps in a process of realist research.

The first step is to identify the research question. It can be seen that the research questions should link with the research objectives. According to the research objectives mentioned in chapter one, the research questions of this research could be “*how operational audit is operated in VICEM and to what extent operational audit impacts on ‘three Es’ – effectiveness, efficiency, and economy of operations in VICEM*”.

Secondly, the appropriate conceptual framework has been developed according to the literature and the author’s experience. In particular, the author will identify key variables that are involved in the subject of the research. As noted in the previous section, these variables are (i) The value operational audit brings to VICEM; (ii) The relevance of the recommendations given by the auditors; (iii) The preventive effect exerted by operational audit on VICEM; (iv) The influence exerted by operational audit on VICEM’s management practices; (v) The influence exerted by the operational audit on VICEM’s relations with interest groups; (vi) the perceived utility of auditor general reports; (vii) The concrete actions taken by audited managers following an operational audit; (viii) Organisational consequences of audits; (ix) Personal consequences of audits; and (x) Global impact on the management of VICEM.

The author would think about the research methods using to collect data. Fisher et al (2010) suggest that the data could be collected from existing databases, by sending out questionnaires, by conducting fieldwork or preparing some case studies. They also point out that both quantitative and qualitative data can be adopted to conduct realist research. While quantitative research allows researchers to collect the data in a structured way so the researcher can produce statistics used to analyse and answer the questions, qualitative research enables the researcher explore issues, understand phenomena, and answer questions. In this research, the author used both quantitative data and qualitative data because the author believed that the quantitative data could be seen as strong evidence to measure the impacts of operational audit on VICEM’s performance, while the qualitative data, especially the respondents’ statements could be used to explain the quantitative data and support for analysis. In particular, this research will use interviews, including structured questions and open questions, as the main methods to collect data. The reasons why these methods could be seen as the most suitable methods will be explained in the next section.

After the original data is collected, critical analyses will be conducted to investigate the impacts of operational audit on VICEM’s operations. The final stage is to react to the analysis result and give recommendations.

2.3.3. *Research methods*

It can be clearly seen that the decision about the research methods employed to collect data is the crucial factor of research design. Fisher et al (2010: 71) shows the most commonly

methods, which may be used to obtain and gather data namely interviews; questionnaires; panels, including focus groups; observation, including participant observation; documents; and databases. They also emphasise that all of these research methods can be applied for both realist and interpretive research, even though realist researchers tend to use quantitative research methods, including questionnaire surveys and databases. This implies that realist researchers and interpretivists may use the same research methods in different ways. The reason is that either quantitative or qualitative material can be produced by using any research methods. For example, interviewing can collect both quantitative and qualitative data. In particular, the structured questions or multiple-choice questions can help the researcher collect the quantitative data, while open questions, especially “why” questions could help the researcher to collect qualitative data.

In this circumstance, both questionnaires and interviews may enable the researcher to collect adequate useful data. However, questionnaires require a large number of respondents and time-consuming process as well. If such questionnaires are conducted, the researcher has to prepare the questions in Vietnamese and translate the responses into English because almost all of respondents cannot write in English. It will take an amount of time while the time for conducting the research project is limited. Therefore, interviews could be seen as the most reasonable method because sampling scale could be smaller.

This research focused on a specific group which is managers working in VICEM. There are two types of sampling, namely probability and non-probability sampling (Saunders et al, 2009). However, this researcher applied non-probability sampling. As mentioned above, the researcher has conducted eight in-depth interviews. It might be argued that “why eight”. Guest et al (cited in Saunders et al, 2009: 235) claim that for the non-probability or judgmental sampling, the researcher needs to conduct 12 in-depth interviews. Creswell (cited in Saunders et al, 2009: 235) even states that researchers are expected to undertake between 25 and 30 interviews. However, the author strongly believes that eight interviews are sufficient because the research is conducted in just one organisation and the respondents are top and middle managers working in most of the departments in VICEM, including finance, operation, marketing, sales, internal audit. Therefore, their opinions can reflect the whole picture of operational audit as well as its impact on the operations.

3. Results and Discussion

The research project consisted of measuring the impact of operational audits on the management of organisations within VICEM. The interview questions, therefore, focus on the investigation of the respondents’ evaluation. Such questions included multiple-choice questions, which enable the researcher to quantify the result, and open questions, which encourage the respondents to provide explanations for their selection of numbers. The multiple-choice questions were answered by selecting one of the numbers which were used to indicate the contribution of operational audit. In particular, the answers could be 1, 2, 3, 4, or 5, that was not important at all, less important, important, more important, and very important, respectively. The collected data then was gathered by calculating the average numbers.

In order to analyse and measure the impact of operational audit in operations within VICEM, the author used Morin’s conceptual framework which consists of ten elements, as noted in the previous section. The following sections will summaries key issues gathered from the interviews’ results.

3.1 The value added by operational audit

Table 1 demonstrates the respondents’ responses to the importance of operational audit in creating value. The average score, which ranged from 2.51 to 3.62, indicates that the general consensus among managers about the value added by an operational audit is substantial.

The audited managers, on average, found that the operational audit contributed most by highlighting incoherence present in current activities, and almost as much by supporting management in carrying out certain projects, reflecting the number of 3.62 and 3.53 out of five, respectively. As explained by the head of the internal audit department, “*our operational audit function usually focus more on creating added value for the accounting and financial function. The reason for that is due to our investors still pay more attention on financial information rather than non-financial information*”

Table 1. Value added by operational audits

	MEAN	
	1.....5	
	No	Very Important
	Contribution	
Establishing more reliable controls	2.86	
Improving the quality of information used in decision-making	3.28	
Reducing operating costs	2.51	
Confirming the necessity for change	2.97	
Attracting the attention of manager concerned for particular problem	3.37	
Bringing on change	3.05	
Highlight any incoherence present in the current activities	3.62	
Supporting management in carrying out certain projects	3.53	
Corroborating a program evaluation	2.93	

The evidence also points out that the operational audit reports were useful to auditees. It attracts the attention of managers concerned for specific issues. Thus, the managers tend to remember such reports for a certain period of time. The respondents believe that such an audit appeared to be a relatively powerful driving force behind the changes made in VICEM. In

addition, operational audits have a notable effect on spurring managers to establish more reliable controls. It also has the role in confirming the necessity for changes and reducing the operating costs, even though the respondents' evaluation of such added value is negligible compared with others.

3.1.1. *The relevance of the recommendations given by the auditors*

Table 2. Relevance of the recommendations made by the operational auditors

	MEAN	
	1.....5	
	None of the	Very large number of
	Recommendations	
Appropriate, realistic and applicable recommendations	3.52	
Recommendations do not truly reach the source of the problem	2.15	
Recommendations are too detailed and narrow, not leaving enough room to move	2.83	
Theoretically valid recommendations but difficult to apply	2.34	
Recommendations are outdated because of important changes	1.82	
Recommendations do not reach the serious problems	2.45	
Recommendations are too vague	1.87	

Most of the respondents had a positive assessment of the value of the recommendations made by operational auditors because of their relevance. As shown in table 2, a large number of recommendations are evaluated to be appropriate, realistic and applicable, reflecting the average score of 3.52 out of five. However, the quality of the auditors' recommendations is still controversial. In particular, the respondents claim that the recommendations sometimes are too detailed, narrow and do not reach serious problems. In addition, there are few recommendations that do not truly reach the source of the problems, reflected in the number of 2.15 on average. The head of internal audit department explained *“the quality of operational audit depends not only on the quality of operational auditors but also on the criteria for measuring and evaluating operating efficiency. However, we cannot find public benchmark that we can use to compare.”*. The comparison of the result in this research and Morin's research indicates that the auditors' recommendations in Morin's research are more relevant than recommendations made by VICEM's auditors. The reason could be due to lack of criteria for comparisons.

3.1.2. *The preventive effect exerted by operational audit in VICEM*

Table 3. Preventive effect exerted by operational audit in VICEM

	MEAN	
	1.....5	
	No	Very strong
	Preventive effect	
Production of more reliable information with regard to the VICEM's performance	3.25	
Compliance with laws and regulations of VICEM	2.85	
Implementation of preventive and detection controls	2.83	
Definition of more reliable performance indicators	2.94	
Implementation of more efficient management practices	2.62	
Elimination of waste	2.35	
Reduction of fraud and dishonesty	2.77	

Most of the respondents claimed that operational audits are different from financial and compliant audits. Both financial and compliant audits focus more on the examination and evaluation of the compliance with laws and regulations. Such audits also focus more on historical information. On the other hand, operational audits could be seen as a management tool which helps managers prevent potential unexpected issues. This is also consistent with the literature, as shown in the second section. The result of interviews, which was shown in table 3, indicated that the preventive effects are most apparent in creating more creditable information that may support managers in making decisions. Laws and regulations of the government as well as of VICEM also can be complied by the ways of increasing awareness of the issues involved. In addition, the experience from conducting such an audit as well as recommendations can help managers establish appropriate internal controls in order to reduce fraud and dishonesty. The preventive effect created by operational audit also can be achieved by the classification of reliable performance indicators that can allow VICEM to eliminate waste.

However, the respondents believed that the preventive effect of operational audit, especially elimination of waste, could be more substantial if VICEM can build comprehensive criteria to compare with actual performance. The preventive effect, itself, can promote better performance by preventing negative impacts. However, the preventive effect exerted by operational audit in VICEM, except reduction of fraud and dishonesty, is lower than in Morin's research. The reason could be the limitation of auditor's expertise.

3.1.3. *The influence exerted by operational audit on VICEM's management practices*

Table 4. Influence exerted on auditees' management practices

	MEAN	
	1.....5	
	No	Very strong
	Influence	
Management practices related to performance checks with regard to previous performance commitments	2.82	
Management practices related to work organisation	2.58	
Management practices related to financial and operational control	3.05	
Use of strategic planning as a management tool	2.79	
Management practices related to performance measurement	2.73	
Management practices related to documentation of decisions made	2.54	
Use of annual operational plans as a management tool	2.67	
Management practices related to the definition of priorities	2.61	
Management practices related to management information used in decision-making	2.45	
Management practices related to increased productivity	2.39	
Management practices related to better outcomes from programmes	2.87	

As shown in table 4, the result of the interviews indicates that, on average, operational audits have a relatively significant influence on VICEM's management practices when they come to those with control responsibilities. In particular, management practices related to financial and operational control could be seen as the most significant influences exerted on VICEM's management practices, reflecting the average number of 3.05. This is a bit higher than Morin's result. The reason is that operational audits in VICEM focus more on financial function, as explained by the head of the internal audit department. Management practices related better outcome from programmes and management practices related to performance checks with regard to previous performance commitments are following significant influences exerted by operational audits, with the average number of 2.87 and 2.82 respectively.

3.1.4. The influence exerted by the operational audit on the relations with interest groups

Table 5. Influence exerted on the audited bodies' relation with interest groups

	MEAN	
	1.....5	
	No	Very strong
	Influence	
Other VICEM's members	2.04	
Mother company	2.88	
Audit department	2.94	
External audit	2.78	
VICEM's clients	2.64	
General public	2.27	

The evidence shows that operational audits can impact not only on audited bodies but also on VICEM's relations with interests groups. This is analogous with the Morin's results. In particular, such an audit can impact on VICEM's relations with its clients. In addition, a large number of relative authorities such as the tax department also can be influenced by operational audits. A manager from the financial department states that the VICEM's performance has been considered as benchmark for evaluation in the cement industry in Vietnam since VICEM was asked to focus on operational audit in order to establish the criteria for the industry.

3.1.5. The perceived utility of auditor general reports

Table 6. Perceived utility of auditors' reports

	MEAN	
	1.....5	
	No	Very great
	Utility	
Reference instrument		
Validate positions taken or observations already made	2.96	
Stimulate reflection	2.58	
Take a more detached attitude towards management	2.05	
Enrich VICEM's memory	2.89	
Provide data useful in implementing certain projects	2.53	
Instrument of negotiation		
A basic for valid discussions	2.57	
An opportunity to challenge terms and programmes	2.66	
Strong point in arguments between different parties	2.75	
Instrument of change		
Facilitate the signing of agreements or protocols	1.69	
Realign programmes, services	2.85	
Realign policies	2.35	
Move from discussion to action	2.87	

Although the interview results demonstrated a slight difference from the literature review that was indicated in the research of Morin (2004: 154), the operational audit reports of VICEM's operational auditors also can be used as reference instruments; instruments for change and instruments of negotiation. The evidence from table 6 shows that the audited bodies tend to use audit reports more as reference instruments rather than for other purposes.

The respondents claim that although the auditors do not have the power to force auditees to comply with their recommendations, the auditees tend to follow the recommendations because they found that audit reports, especially audit recommendations are very useful for their performance.

3.1.7. The concrete actions taken by audited managers following an operational audit

Table 7. Concrete actions taken by auditees

	MEAN	
	1.....5	
	No	Very great
	Contribution	
Reorganisation of information system	2.26	
Creation of new work groups or reform of existing groups	2.15	
Programme reform	1.98	
Modification of certain laws or regulations	1.89	
Recruitment of additional personnel	1.83	
Reorganisation of the organisation	2.28	
Adoption of new laws or regulations	2.47	
Lay-off of existing staff	1.76	

As shown in table 7, the respondents expressed the opinions that operational audits had negligible effect on the concrete actions taken by audited bodies. From the respondents' perspective, operational audit only can be seen as one of a large number of events that they have to handle in the business. As a result, it is very difficult to not be distracted from the recommendations even the good ones which were formulated by operational auditors. This is slightly different with the literature.

This implies that operational audits cannot revolutionise the procedures or projects in VICEM. In support to this finding, on average, a small number of managers who were interviewed believe that operational audits have noticeable contributions to the reorganisation of informational systems. The reason for this is due to the lack of the synchronisation in management, explained by a manager working in unit production management. Sometimes the recommendations are reasonable but lack of the link among departments could be seen as the main reason for the difficulty in applying recommendations of operational audits. The influence of operational audits, therefore, can be declined. Nevertheless, the evidence proved that operational audit still has impact on the concrete actions taken by audited bodies, even though this positive impact needs to be improved.

3.1.8. Organisational consequences of audits

Table 8. Negative organisational consequences

	MEAN	
	1.....5	
	No	Very great
	Contribution	
Increase in VICEM’s short-term operating costs with no mid-term benefits to compensate for the increase in cost	1.56	
Multiplication of controls extensive enough to hinder achievement of objectives	1.35	
Dissatisfaction of target clientele owing to a considerable loss of efficiency in the delivery of services following implementation of the additional controls recommended by the auditors	1.59	
Organisational paralysis	1.13	

Regardless of positive impacts of operational audits on the “three Es” – effectiveness, efficiency and economy in the performance within VICEM, this section will discuss how respondents evaluate negative consequences. This will provide a full assessment of the impact of operational audits in VICEM.

Based on the interviews’ results which are presented in table 4.8, it can be clearly seen that, operational audit does not seem to have strayed from the main path. In other words, if the operational audits may result in negative consequences in operational management in VICEM, they were believed to be marginal.

3.1.9. Personal consequences of audits

Table 9. Personal consequences of audits

	MEAN	
	1.....5	
	No	Very strong
	Impact	
Increase in motivation	2.66	
Tendency to encourage you to promote mid- to long-term objectives	2.45	
Improvement in your performance	2.61	
Increase in confidence on the part of your superiors	2.35	
Positive influence on your ulterior work or on your career	2.32	
Increased confidence in your subordinates	2.16	
Loss of motivation	1.63	
Tendency to limit you to the achievement of short-term objectives at the expense of long-term ones	1.35	
Tendency to restrain your initiatives	1.23	
Drop in your performance	1.29	
Loss of confidence on the part of your superiors	1.18	
Loss of confidence in your subordinates	1.20	
Negative influence on your ulterior work or your career	1.15	

According to the data collected, audited managers believed that they have received personal benefits from operational audits' consequences. This is demonstrated by the numbers which managers selected to express the impact of such audit to them. In particular, on average, the numbers indicating positive consequences are much higher than the numbers indicating negative consequences, as shown in table 9. For example, the figure indicated the impact of operational audits on the increase in motivation was much higher than the figure indicating the impact of such audits on the loss of motivation (2.66 versus 1.63). Operational audits also have resulted in an increase in confidence on the part of managers' superiors rather than loss of confidence of them. This implies that audited managers did not see operational audits as coercion but as learning opportunities.

One of the interviewees highlighted that *“operational audits offer me great opportunities not only to learn from auditors but also to prove my abilities. Therefore, I found interest in every operational audit”*.

3.1.10. Global impact on the management of VICEM

Table 10. Global impact on the management of VICEM

	MEAN	
	1.....5	
	No	Very strong
	Impact	
Improvement of management	2.87	
Deterioration of management	1.38	
Overall effect of operational audit	2.68	

In light of the data collected, once again, it can be clearly seen that the operational audit did nothing to revolutionize the operations within VICEM. Nonetheless, such an audit leaves a positive imprint in the course of the organisational life (see table 10).

3.2. Recommendations

3.2.1. Recommendations for the relevant authorities

Operational auditing function, recently, could be seen as a part of internal audit. Regardless of this misconception, the legal documents about internal audit are not enough, not comprehensive and unfeasible. In particular, the relevant authorities should build internal auditing standards or establish the Vietnam association of internal auditors in order to manage the implementation of internal audit in organisations.

Along with the legal documents, Vietnam National Cement Association (VNCA) plays an important role in establishing criteria. For example the acceptable waste rate in each stage of production and the rate of skilled work in total, etc. These enable both audited managers and auditors to identify how effective the audited activities are and how the performance becomes better. The benchmark also allows auditors to compare the

performance among Cement Companies. As a result, the auditors' recommendations will be more reasonable and acceptable.

In addition, VNCA should organise frequently, conferences or in-house training for internal auditors who have been responsible for operational audits in order to enhance their capabilities. The awareness of managers or directors about operational audit also needs to be improved so workshops held by VNCA and professional organisations would be very helpful.

3.2.2. Recommendations for VICEM

Firstly, VICEM should enhance the role of operational auditing function. In order to do so, the board need to issue the charter which could describe in details the objectives, missions, responsibilities and power of operational audit function. This charter also needs to clarify the budget spent on operating such functions including human and other resources.

Secondly, the internal audit department should shift its focus to conducting operational audits to help increase the efficiency of the operations, instead of just checking the compliance with regulatory guidelines and the accuracy of the financial statements.

Thirdly, the capacity of operational auditors also needs to be enhanced regularly with the provision of on-the-job training or continuing professional development because human resource could be seen as the centre factor of operational audit.

Finally, operational audits are often audited only when the projects are completed, not the whole implementation process.

4. Conclusions

The research had provided an analysis and examination of the influences of operational audit in the operations within VICEM. The researcher had used appropriate research methods to collect data. The analysis had fully addressed the key aspects of interview results. However, the limitation of time, geographical distance, and the lack of secondary data could be seen as main reasons for limitations of the research.

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Research on Factors Affecting the Quality of Internal Auditing Activities in Listed Companies on Hanoi Stock Exchange

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Abstract

The study focuses on factors affecting the quality of internal auditing activities in listed companies on Hanoi Stock Exchange with a survey of 226 respondents. SPSS software was employed for creating the regression model with the results as the followings: "Independence" is the factor with strongest impact on "Quality of internal auditing activities"; The second factor is the "internal qualification"; The third one with negative effect is "The relationship between internal auditor and external auditor"; The last two influencing factors are "Management Assistance to Internal Audit" and "Obligation of Law".

Keywords: *Auditor, Internal audit, Internal auditor.*

1. Introduction

Internal auditing plays a really significant role in business operation of any enterprises. In Vietnam, the role of internal audit is quite unclear, which is easily mistaken with internal control. It has not been developed as an intensive specialization. Also, there have been no standard, regulation and model audit scheme, which result in difficulties in assessing the quality of internal audit in enterprises. However, recently, internal audit has been a concerning issue of different enterprises. The draft decree on internal audit has been completed and submitted for approval. It is expected that this decree would be put into effect from 2018. There must be regulations on compulsory establishment of internal audit department in certain types of enterprises, of which there are companies listed in the stock market. Therefore, the study “**Research on factors affecting the quality of internal**

auditing activities in listed companies on Hanoi Stock Exchange” is carried out with the aim of identifying factors that affect the quality of internal audit in these enterprises and analysing how these factors influence the quality of internal audit. These objectives help to propose recommendations for the improvement of internal audit in business.

2. Literature review

2.1. International studies

In 1990s of XX century, the research by Sarah and Barry (1990) showed that more experienced and specialized auditors would have better skills of solving problems and giving more creative solutions. Study by Arena and Azzone (2009) stated that there are 3 factors affecting the quality of internal auditing, which cover features of internal auditor group, auditing process and activities, and organization’s partnerships. The study by Ahmad et. al (2009) in South East Asia confirmed that the shortage of internal auditors is considered as the first concerning issue in carrying out internal activities within organizations of public sector. At the same time, other problems are related to the competence of internal auditors, objectiveness and job quality carried out by internal auditors. In the research by Israe, Cohen and Sayag (2010), it was demonstrated that the managing assistance is regarded as the most important factor in the operation and success of internal audit. The study by Tabandeh Salehi (2015) emphasized managing assistance for internal audit as a significant factor for the effectiveness of internal audit.

Hella Dellai and Mohamed Ali Brahim Omri (2016) measured factors affecting the quality of internal audit effectiveness in the area of Tunisia of Saudi Arabia. They emphasized on 5 factors actually putting impact on the effectiveness of internal audit which cover internal auditors’ independence, their objectiveness, managing assistance for them and organization’s area.

2.2. Domestic studies

Đặng Thị Thùy Dung (2016) conducted a research on influencing level of factors having impact on the effectiveness of internal audit in public units in Vietnam. These factors include competency and number of staff in the internal audit department; relationship between external and internal auditors; managing assistance for internal audit and the independence of internal audit. Then, she gave recommendations related to putting impact on influencing factors of internal audit effectiveness in order to improve its quality within public units in Vietnam.

In addition, there have been studies on internal auditing field, which aim at completing the internal auditing system in certain enterprises and administrative units. In particular, followings are description of these studies:

Lê Thu Hằng (2007) put an emphasis on an important content of internal audit which is carrying out operational audit.

Phan Trung Kiên (2008) concluded on direction and feasible solutions to complete the arrangement of internal audit especially that of internal audit in construction enterprises in Vietnam.

Nguyễn Thị Hồng Thúy (2010) proposed approaches to complete the organization of internal audit in economic corporations under the direction of auditing mode partnership based on operational audit focus, changing audit accessing method and completing model of internal audit arrangement in economic corporations.

Nguyễn Phú Giang et. al (2010) did not concentrate on organizing internal audit machine and operation in commercial banks. He investigated evaluation on the effects, effectiveness and efficiency of operational audit in certain specific banking tasks.

Thus, in Vietnam, the research group have not found out intensive study and survey in Vietnam in general and Hanoi in particular, which evaluate factors affecting the quality of internal audit in companies listed on Hanoi stock exchange.

2.3. Research frame and model

Inheriting from the above mentioned studies, the research group identified factors affecting internal audit quality as the followings (1) independence of internal audit, (2) the relationship between internal and external auditors, (3) management assistance, (4) internal auditor's qualification, (5) internal audit size, (6) law obligation.

Research Hypothesis

- There is positive correlation between independence of internal audit and quality of internal audit in enterprises.

- There is positive correlation between internal audit size and quality of internal audit in enterprises

- There is positive correlation between internal auditor's qualification and quality of internal audit in enterprises

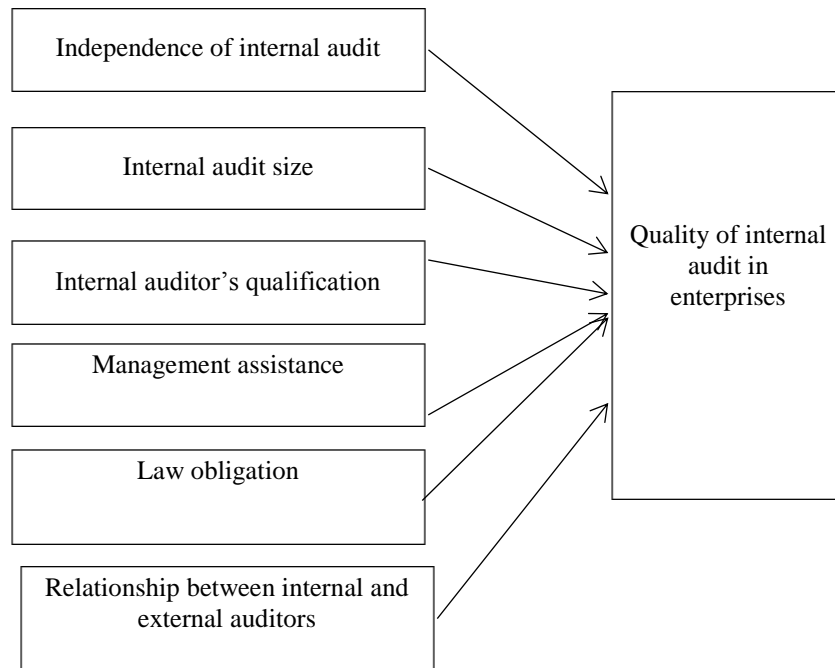
- There is positive correlation between management assistance and quality of internal audit in enterprises

- There is positive correlation between law obligation and quality of internal audit in enterprises

- There is negative correlation in relationship between internal and external auditors and quality of internal audit in enterprises

Researeach frame:

Figure 1 : Model of factors affecting internal audit quality in enterprises



(Source: The research group)

Regression research model:

$$Y = \beta_1.X1 + \beta_2.X2 + \beta_3.X3 + \beta_4.X4 + \beta_5.X5 + \beta_6.X6 + \varepsilon$$

where :

Y: quality of internal audit in enterprises

X1: independence of internal audit

X2: relationship between internal and external auditors

X3: management assistance

X4: internal auditor's qualification

X5: internal audit size

X6: law obligation

ε : deviation

3. Research methods and results

3.1. Reliability test: Cronbach's Alpha

The reliability test of measuring scale is carried out with 6 factors (independent variables) and 1 dependent variable. Following is the result:

Table 1: Cronbach's Alpha test result

No	Variable name	Number of observed variables	Cronbach's Alpha	Highest excluded Cronbach's Alpha	Lowest corrected item-total correlation
1	Independence	4	0.563	0.612	0.208
2	Relationship	3	0.801	0.786	0.590
3	Management assistance	3	0.749	0.756	0.495
4	Size	3	0.800	0.784	0.509
5	Auditor qualification	3	0.650	0.604	0.424
6	Law	3	0.731	0.697	0.507
7	Quality	3	0.771	0.740	0.564

Source: Authors' statistics

Every item of Cronbach's Alpha scale is higher than 0.6 and qualified. Only the variable "independence" gets $0.563 < 0.6$, the authors exclude 1 observed variables among those 4, which is "independence", then the result is qualified when Cronbach's Alpha > 0.6 (value = 0.612).

3.2. Exploratory factor analysis (EFA)

EFA, KMO index, Sig value, Evigenvalue, total variance explained are all qualified with the following results:

Table 2: EFA results

Item	Model's values	Comparison
KMO index	0.715	$0.5 < 0.715 < 1$
Sig value in Bartlett test	0.000	$0.000 < 0.05$
Average variance extracted	64.775%	$64.775\% > 50\%$
Evigenvalue	1.130	$1.130 > 1$

Source: Authors' statistics

- $KMO = 0.715 > 0.5$ means factor analysis is appropriate.
- sig value in Bartlett test = 0.000 (< 0.05) means observed variables have correlation in general, so, EFA result is applicable.
- Evigenvalue = 1.130 > 1 means the extracted factor is informative.
- Average variance extracted = 64.775% ($> 50\%$) means 6 extracted factors can explain 64.775% variation of observed data.

Table 3: Factor loading

1		2		3		4		5		6	
QM3	,893	MQH1	,825	HT2	,852	TD1	,797	DL4	,819	PL2	,800
QM1	,882	MQH2	,816	HT1	,850	TD3	,749	DL2	,690	PL1	,755
QM2	,744	MQH3	,815	HT3	,705	TD2	,659	DL1	,618	PL3	,611

Source: Authors' statistics

Based on the Rotated Component Matrix, it is clear that every factor loading is > 0.5 , which is meaningful, so, there is no exclusion. In addition, all observed variables belong to a mutual factor and observed variables of different factors are distinguishing.

3.3. Pearson correlation analysis

Table 4: Pearson correlation results

Independent variables		LAW	QUALIFICATION	RELATIONSHIP	ASSISTANCE	SIZE	INDEPENDENCE
QUALITY (Dependent variable)	Pearson(r)	0.313	0.533	-0.448	0.309	0.21	0.726
	Sig value	0.000	0.000	0.000	0.000	0.755	0.000
LAW	Pearson(r)	1	0.260	-0.202	0.044	0.066	0.223
	Sig value		0.000	0.002	0.508	0.323	0.001
QUALIFICATION	Pearson(r)	0.260	1	-0.357	0.139	0.004	0.339
	Sig value	0.000		0.000	0.037	0.947	0.000
RELATIONSHIP	Pearson(r)	-0.202	-0.357	1	-0.153	0.030	-0.327
	Sig value	0.002	0.000		0.021	0.657	0.000
ASSISTANCE	Pearson(r)	0.044	0.139	-0.153	1	0.024	0.268
	Sig value	0.508	0.037	0.021		0.721	0.000
SIZE	Pearson(r)	0.066	0.004	0.030	0.024	1	0.082
	Sig value	0.323	0.947	0.657	0.721		0.219
INDEPENDENCE	Pearson(r)	0.223	0.339	-0.327	0.268	0.082	1
	Sig value	0.001	0.000	0.000	0.000	0.219	

Source: Authors' statistics

It is revealed that:

Sig value of variable pair QUALITY-SIZE is 0.755, which is greater than 0.05 and r is $0.21 < 0.3$, so it can be concluded that there is no linear correlation relation between these two variables. So, the next regression model should exclude independent variable SIZE.

Among independent variables, Sig values of pairs INDEPENDENCE-RELATIONSHIP; INDEPENDENCE-QUALIFICATION; QUALIFICATION-

RELATIONSHIP are smaller than 0.05, also, these pairs' Pearson r are greater than 0.3, thus, there might be multicollinearity among those independent pairs (this aspect would be considered in the next test).

4.4. Descriptive statistics with likert scale

The Likert scale with 5 levels is used in the survey. Thanks to references and expert consultancy, the research group identify meaning of each average value in Interval Scale as the followings:

$$\text{Interval value} = (\text{Maximum} - \text{Minimum})/n = (5-1)/5 = 0.8$$

In order to assess level of each variable, intervals are divided respectively based different levels:

- 1 – 1.80: Highly agree
- 1.81 – 2.60: Agree
- 2.61 – 3.4: Hesitate
- 3.41 – 4.2: Disagree
- 4.21 – 5.00: Highly disagree

3.4.1. Influence of internal auditor's independence on the quality of internal audit in enterprises

Regarding factor of internal auditor's independence, the test analysis helps to choose 3 factors for assessment:

Table 5: Hierarchy of observed variables based on independence of internal auditor

Level	Observed variables	Average	Standard deviation	Assessment
1	Internal audit should be separated from other departments in enterprises	2.04	0.774	Agree
2	Internal auditors should not take multiple positions	2.05	0.798	Agree
3	Internal auditors should be independent in thinking	2.21	0.805	Agree
Mean		2.1		Agree

Source: Authors' statistics

The higher the Mean is, the lower level of agreeing is. It can be seen that the Independence fluctuates in a meaningful interval of agreeing, the highest mean is 2.21 when "Internal auditors should be independent in thinking" has lowest agreeing level and the lowest mean is 2.04 when "Internal audit should be separated from other departments in enterprises" has the highest agreeing level in enterprises.

Concerning element "Internal audit should be separated from other departments in enterprises", it is concluded that most respondents rate levels 1, 2 (77,4%), showing that they

mostly evaluate this element at relatively high level and they agree with their enterprise status. Concerning element “Internal auditors should be independent in thinking”, respondents select levels 2, 3 with about 76%, stating their awareness of independent thinking of auditors, which is an important factor contributing to internal audit quality of enterprises. In fact, independent thinking will help internal auditors have a clear perspective towards their enterprises

3.4.2. Influence of the relationship between internal and external auditors on the quality of internal audit in enterprises

Based on the survey, 3 elements are selected:

Table 6: Observed variables based on the relationship between internal and external auditors

Level	Observed variables	Average	Standard deviation	Assessment
1	Internal auditors should utilize auditing report by external auditors	3.27	1.097	Hesitate
2	Internal auditors gather information, exchange ideas and consultancy with external auditors	3.25	1.179	Hesitate
3	External auditors can both set up internal auditing system for the audited enterprise and carry out auditing for that enterprise.	3.34	1.101	Hesitate
Mean		3.29		Hesitate

Source: Authors' statistics

The 3 above elements receive average assessment in general because this factor has inverse impact on the quality of internal auditing. Survey most participants in enterprises choose levels 3, 4 for element “Internal auditors should utilize auditing report by external auditors” with 60.6%, for element “Internal auditors gather information, exchange ideas and consultancy with external auditors” with about 66%. This means that internal auditors should not largely depend on financial statement by external auditors. Also, they should participate in enterprises' operation to understand and propose suggestions suitable for expected requirements of managers.

3.4.3. Influence of management assistance on the quality of internal audit in enterprises

The next factor is Influence of management assistance on the quality of internal audit in enterprises, 3 elements are supplied for assessment:

Table 7: Observed variables based on management assistance for the quality of internal auditing

Level	Observed variables	Average	Standard deviation	Assessment
1	Managers should provide internal audit with financial support	1.91	0.731	Agree
2	Managers should provide internal audit with information support	1.94	0.743	Agree
3	Managers should provide internal audit with mental support	2.05	0.798	Agree
Mean		1.97		Agree

Source: Authors' statistics

The Mean of Management assistance is 1.97 agreeing level, showing that managers play a key role in internal audit quality. Especially, their support for internal auditor in terms of information is extremely significant, which is proved by levels 1,2 equal to 85,1% assessed by most participants. In addition, finance is also a vital element for internal audit for the enterprises' operation and evaluation. In this case, mental support also gains high level of agreement with around 75% of levels 1,2. This demonstrates that managers should motivate and support internal audit of their enterprises much more.

3.4.5. Influence of qualification on the quality of internal audit in enterprises

Regarding the factor of internal auditor's qualification towards the quality of internal audit in enterprises, 3 elements are given for assessment:

Table 8: Observed variables based on internal auditor' qualification

Level	Observed variables	Average	Standard deviation	Assessment
1	Specialized competence of internal auditors put an impact on the quality of internal auditing	2.47	0.905	Agree
2	Experience of internal auditors put an impact on the quality of internal auditing	2.82	0.965	Hesitate
3	Enterprises should continuously train their internal auditors	2.62	0.898	Hesitate
Mean		2.64		Hesitate

Source: Authors' statistics

In general, the mean of elements at hesitate assessment is lower than the total mean. However, the element "Specialized competence of internal auditors put an impact on the quality of internal auditing" receives the highest agreement, with 40.3% and 35.8% hesitation. This states that specialization has great impact on the quality of internal audit, so,

internal auditors should continue studying to improve their major. The lowest mean is related to the element “Experience of internal auditors put an impact on the quality of internal auditing” with 2.82 of hesitation.

3.4.5. Influence of law obligation on the quality of internal audit in enterprises

There are 3 elements to analyze the factor of law obligation for the quality of internal audit in enterprises:

Table 9: Observed variables based on law obligation

Level	Observed variables	Average	Standard deviation	Assessment
1	Enterprises should apply international internal auditing IPPF	2.65	1.002	Hesitate
2	Vietnam should issue internal auditing standard	2.60	0.880	Agree
3	The usage of internal auditing system in Vietnam helps to improve the quality of internal audit	2.48	0.915	Agree
Mean		2.58		Agree

Source: Authors' statistics

In general, the mean value of elements with agreement is higher than that of those in qualification of internal auditors. This illustrates that law obligation has influence on the awareness of internal auditors. Regarding the element “The usage of internal auditing system in Vietnam helps to improve the quality of internal audit” has highest agreeing and extremely agreeing level with 55%, while the element “Vietnam should issue internal auditing standard” obtains agreeing level at 43.8%, extremely agreeing at 7%. Element “Enterprises should apply international internal auditing IPPF” receives only 46% of both agreeing and extremely agreeing. This shows that from the perspective of participants, enterprises should apply a system on internal auditing standard in order to complete and improve the quality of internal audit.

3.5. Regression model analysis

Hypothesis for impacts on the quality of internal audit in enterprises covers:

H1: Independence of internal auditors do not influence the quality of internal audit in enterprises

H2: Relationship between internal and external auditors do not influence the quality of internal audit in enterprises

H3: Management assistance do not influence the quality of internal audit in enterprises

H4: Qualification of internal auditors do not influence the quality of internal audit in enterprises

H5: Law obligation do not influence the quality of internal audit in enterprises

In the regression process, hypotheses are investigated to:

- + Evaluate the appropriateness of multivariable regression model
- + Test the theory on model's compatibility
- + Test the theory on multicollinearity

Table 10: Analysis into regression of variable QUALITY

Analysis into regression of variable QUALITY based on 5 independent variables							
Sample	Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
	B	Standard deviation	Beta			Tolerance	VIF
(Constant)	,835	,197		4,230	,000		
LAW	,076	,036	,086	2,115	,036	,904	1,107
QUALIFICATION	,211	,037	,247	5,681	,000	,792	1,262
RELATIONSHIP	-,123	,027	-,194	-4,521	,000	,815	1,227
ASSISTANCE	,096	,039	,099	2,447	,015	,921	1,085
INDEPENDENCE	,542	,044	,533	12,194	,000	,784	1,276

a. Dependent Variable: QUALITY

Source: Authors' statistics

The table reveals that:

VIF value of variables is smaller than 10. So, it can be concluded that: there is no multicollinearity in the model.

Sig value: regression index of independent variables is smaller than 0.05 (all variables get meaning of 5%), so, these independent variables can explain the dependent one, then, no variable is excluded. Hypotheses H1, H2, H3, H4, H5 are all rejected. Thus, factors of law, qualification, relationship, assistance and independence put an influence on the quality of internal auditing.

In that case, these independent variables are completely appropriate with the model. The research group, then, considers internal auditing quality based on 5 factors:

- X1: Independence
- X2: Relationship
- X3: Management assistance
- X4: Internal auditor's qualification
- X5: Law obligation

Table 11: Regression results of internal auditing quality

Item for evaluation	Value run by	Comparison
R	0.819	
R^2	0.671	
Adjusted R Square	0.663	
Sig of F test	0.000	$0.000 < 0.05$
Durbin- Watson statistic	1.883	$du=1.820 < 1.883 < 4-1.820= 2.180$
Standardized coefficients equation	$Y= 0.533*X1 - 0.194*X2 + 0.099*X3 + 0.211*X4 + 0.076*X5$	

Source: Authors' statistics

The table shows that:

- R^2 (Adjusted R Square) reflects influencing level of independent variables on the independent one. In the regression model, 5 independent variables put 66.3% impact on changes of the dependent one, the rest 33.7% can be explained by model's external variables and random error.

- Durbin Watson test is used to investigate the autocorrelation of errors (first order autocorrelation). DW reveals coefficient $1.820 < 1.883 < 2.180$ so, there is no first order correlation in the model.

- F test of ANOVA is applied to find out whether the linear regression model can be expanded and utilized for generalization. Sig value of F test is $0.000 < 0.05$, so, the linear regression model is appropriate with the population.

Explanations to the standardized regression model:

- When other factors do not change, variable of Independence experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.533 standard deviation increase.

- When other factors do not change, variable of Relationship experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.194 standard deviation decrease.

- When other factors do not change, variable of Assistance experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.099 standard deviation increase.

- When other factors do not change, variable of Qualification experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.211 standard deviation increase.

- When other factors do not change, variable of Law experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.086 standard deviation increase.

In general, the standardized regression equation illustrates that “Independence” is the factor with the greatest impact on the quality of internal audit. The second factor is qualification of internal auditors. Next is factor with converse impact, which is related to relationship between internal and external auditors. The last two influencing factors are management assistance and law obligation. This is the conclusion for the research group to propose solutions and recommendations to improve the quality of internal auditing.

4. Recommendations

4.1. Raising “Independence of internal auditors”

The research results show that “independence of internal auditors” has the strongest impact on the “quality of internal audit in companies listed on the stock exchange”. In particular, When other factors do not change, variable of Independence experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.533 standard deviation increase. Although this factor receives agreement in the survey, that level is not high. It is essential for the Ministry of Finance, enterprises and internal auditors to establish a long-term and in-depth schedule to improve the “independence of internal auditors”.

Ministry of Finance: should issue ethical standard attached with ethical control regulations; specific rules on internal control system in general and internal audit in particular. For example, there should be requirement for each company to own charter capital of 5 billion, set up separated internal audit department, spend a fixed amount of money on annual activities of internal audit. At the same time, it is essential to launch appropriate punishment to deter unloyal and unethical actions when problems of internal auditors and internal audit department are identified.

Enterprises: These are organizations with initial benefits from the enterprises’ internal audit. Thus, they should have the most practical solutions to improve “Independence of internal audit”. Enterprises should make policies, set up regulations, procedures and give plans for department of internal audit in a specific basis through closely relying on standards issued by the Ministry of Finance and adding essential articles which match with the enterprises’ conditions. There should be attention to matters relating motivation for auditors like salary, allowance, benefits, other treatments, promotion, fresh working environment to compensate for working pressure and encouragement. Enterprises should have regulations on ethical issue to ensure its maintainance in the companies, establish mindset and lifestyle for the staff.

Internal auditors

- The department of internal auditing in the enterprises should have independent thinking from other departments
- The department of internal auditing in the enterprises should have mutual regulations, in their own unit to improve the independence
- Each auditor should be aware of ethical necessity and importance
- Each auditor should be self-equipped with skills to prevent themselves from seduction and obligation which reduce “independence”

4.2. Enhancing “Qualification of internal auditors”

Factor “Qualification of internal auditors” has an impact on the “quality of internal audit”. In particular, when other factors do not change, variable of Qualification experiences 1 standard deviation increase, the variable of Quality of internal audit experiences 0.211 standard deviation increase. However, during the survey, it is figured out that this factor is not highly appreciated, most participants hesitate. Acknowledging the urgent requirement for this factor, the research group propose solutions to enhance “Qualification of internal auditors”

** Ministry of Finance:*

- It should cooperate with institutions and organization worldwide to run courses improving qualification of internal auditors
- It should provide job certificate, training certificate to improve the qualification of internal auditors
- It should approve policies on qualification of internal auditors in enterprises
- It should supplement regulations on working time in the areas of accounting, auditing, financial management and experience years in this sector for internal auditors. The head and deputy head of internal audit should have more experience than others

** Enterprises:*

- They should cooperate with Ministry of finance to encourage internal auditors to take part in training courses, specialized courses, achieve international certificate to improve the qualification of internal auditors.
- They should issue regulations on minimum training hourse in a year for the internal auditors to spend in order to motivate them to gain knowledge and skills which meet the requirement of the career.

** Internal auditors*

- Each auditor should set the goal of 80 learning hours a year as the minimum time to get specialized knowledge.
- Each auditor should continously acknowledge self study in terms of both knowledge and skills
- Each audito should understand the requirement of specialization for himself/herself

4.3. Empowering “Management assistance for internal audit”

Internal audit is a component of any company. Then, the company should pay attention to and provide favorable conditions or this devision

The board of directors and board of management should take care and prioritize internal auditing in terms of physical and human resources in order to set up, complete and develop this department.

- Allow internal auditors to access to managing database and software

- Supply advantageous facilities for internal auditing

- Create roadmap to set up organization model of internal auditing system of the company in general and that of internal audit in particular. This model should exclude ineffective and bulky control and investigate department, mobilize all resources to build up a complete internal auditing system belonging to a professional one

- Draw a specific roadmap (2-3 years) to set up, complete and develop professional internal audit which successfully accomplish its tasks.

4.4. Promoting “Law obligation”

“Law obligation” also contributes to the improvement of “Quality of internal audit”. Ministry of finance in Vietnam has experienced great transformation with specific attention to internal audit. Especially, in 2016, there was draft decree on internal audit for Government’s approval. Only when the internal audit system is good, “risk management” can be good. Then, Vietnam’s enterprises can strongly develop and its economy can be better. Ministry of Finance should issue a series of relevant legislative documents to improve the quality of internal auditing. It should be more strict in managing the implementation of documents in lower levels in order to improve the quality of document application. These documents would directly influence auditors and enterprises in Vietnam.

4.5. Restricting “Relationship between internal and external auditors”

The factor “relationship between internal and external auditors” is a converse impact on “quality of internal audit in companies listed on Hanoi stock exchange”. Although this relationship is unavoidable, it should be timely prevented if it negatively affects the audit quality. In this research, the authors propose certain measures to mitigate the converse impact of “relationship between internal and external auditors”

- Enterprises should require confidentiality for their internal auditing information

- They should keep secret results of external auditing from internal auditing

- Internal auditors should maintain their ethics

5. Conclusion

The research “Factors affecting the quality of internal auditing in enterprises listed on Hanoi Stock Exchange” is carried out with the aim of identifying factors which have an impact on the quality of internal auditing in those enterprises. The research conducts empirical study by for each factor by gathering ideas of individuals in department of internal audit as well as managers here. This collection is completed thanks to a survey questionnaire designed by the research group. The results show that in order to improve the quality of internal auditing, it is essential to improve “independence of internal auditors”, “qualification of internal auditors”, “management assistance for internal auditors” and “law obligation” as well as restrict “relationship between internal and external auditors”.

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Impacts of Internal Control Quality on Profitability of the Listed Construction Companies in Vietnam

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Abstract

Profit is a central concern of listed companies and internal control is said to be an useful tool to achieve such purpose. Construction companies face many types of risk so controls play an even more important role. Using Internal control theory of COSO (Committee of Sponsoring Organizations), this paper examines the relationship between Internal control quality and profitability of the listed construction companies in Vietnam. In more details, the paper explores the relationship between components of internal control and profitability of such listed companies. The results show that internal control quality and each component of internal control (namely Control Environment, Monitoring, Control Activities, Information and Communication, Risk Assessment) are associated with profitability. These findings have practical implications for executives and policy makers in designing internal control for profit purposes.

Keywords: *Internal control, Listed construction companies, Profitability*

1. Introduction

Construction companies play an important role in the Vietnamese economy thanks to their GDP contribution, employment generation and infrastructure development. However, construction companies face many types of risks, ranging from weather risks, labour safety risks, liquidity risks to dispersed locations and complexity of construction projects. These pervasive risks make the profit target of construction companies vulnerable and may not be realized. Hence, internal control becomes very essential to help management of listed construction companies control risks and meet the profit and dividend expectations of

shareholders. This seemingly logical argument however has not been confirmed by any empirical study yet. To fill in this gap, the paper analyses theoretical framework of internal controls and profitability, explains the empirical model and discusses the empirical results for listed construction companies in Vietnam. Then, recommendations will be drawn

2. Theoretical Framework and Methods

Internal controls aim at 3 purposes: (i) reliability of financial information, (ii) efficiency and effectiveness of operations, and (iii) compliance with rules and regulations. Hence, internal controls are expected to be very useful for listed companies because of management' profit concern. Construction companies face with various kinds of risks, so internal controls are even more relevant in listed construction companies. Acknowledged the benefits of internal controls, the Sarbanes Oxley Act 2002 of US required listed companies' management to establish and maintain effective internal controls.

Empirical studies indicate impacts of internal controls on profitability of companies. Typically, Chih-Yang Tseng (2007) verified impacts of weaknesses in internal control components on the market value of companies, and found that companies with weak internal control associated with low market values. Ebrahim Mohammed Al – Matari et al. (2012) found that features of CEO, size of audit committee, and leverage had impacts on ROA. John Kang'Arū Kinyua (2016) indicated separate impacts of Control Environment, Internal Audit, Control Activities, Risk Management *inter alia* on profitability of listed companies in Nairobi stock exchange. Specifically, Control Environment, Internal Audit, Risk Management, and Control Activities explained 16.9%, 10.8%, 30.2%, and 20.2%, respectively, the change in profitability of such companies.

For listed companies, the central concern of management is profitability in general and ROE in particular. ROE rather than ROA will be used in this study because shareholders and investors are concerned with dividends on their investment.

Following the theoretical framework about positive impacts of internal controls and its components on profitability, the following hypotheses are used for listed construction companies in Vietnam:

H1: Quality of Internal Control (ICQ) has positive impact on ROE

H2: Control Environment (CE) has positive impact on ROE

H3: Control Activities (CA) exerts positive impact on ROE

H4: Information and Communication (IC) has positive impact on ROE

H5: Risk Assessment (RA) exerts positive impact on ROE

H6: Monitoring (M) has positive impact on ROE

ROE is calculated from the financial statements of listed construction companies in Vietnamese stock exchange.

Each component of internal controls is measured by constituent elements suggested by COSO. Each element is measured using Likert measure 1-5 (1 means Totally disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Totally Agree). The measurement of elements is conducted following Karagiorgos, T., et al. (2011), Conor O’Leary (2004), COSO (1992), Faudziah Hanim Fadzil et al. (2005).

Quality of internal control (ICQ) is measured by averaging components of internal controls, following Faudziah Hanim Fadzil et al. (2005), Karagiorgos, T., et al (2011):

$$ICQ = (CE+CA+IC+M+CR)/5$$

Beside internal controls, other factors are argued to have impacts on company profitability, namely Size of company (Doyle, J. et al. 2006), Leverage (Al-Matari et al. 2012), Listing time. These variables are also included in our empirical model to ensure the explanatory power of the model.

3. Results and Discussion

The study was conducted based on a survey of all 107 construction companies listed in the stock exchange of Vietnam. After cleaning data for missing observations, data on 54 listed construction companies are used in the empirical model. Eviews 9.0 is used to estimate the impacts of internal controls on ROE and the results are presented in Tables 1-6 below.

Table 1: Empirical impact of internal control quality (ICQ) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-52.65457	13.65049	-3.857341	0.0003
ICQ	11.55978	1.811170	6.382493	0.0000
SIZE	1.199073	0.742937	1.613963	0.1131
LEV	0.053566	0.046931	1.141358	0.2594
T	-0.783377	0.592103	-1.323042	0.1921
LD	-0.000724	0.000360	-2.013271	0.0497
R-squared	0.503992	Mean dependent var		7.049778
Adjusted R-squared	0.452324	S.D. dependent var		8.470330
S.E. of regression	6.268479	Akaike info criterion		6.613384
Sum squared resid	1886.104	Schwarz criterion		6.834382
Log likelihood	-172.5614	Hannan-Quinn criter.		6.698614
F-statistic	9.754509	Durbin-Watson stat		1.907895
Prob(F-statistic)	0.000002			

Table 2: Empirical impact of Control environment (CE) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-50.17696	15.05149	-3.333688	0.0017
CE	9.240950	1.820402	5.076325	0.0000
SIZE	1.591353	0.809413	1.966058	0.0551
LEV	0.077911	0.051488	1.513181	0.1368
T	-1.191042	0.647532	-1.839356	0.0721
LD	-0.000816	0.000400	-2.038855	0.0470
R-squared	0.403355	Mean dependent var		7.049778
Adjusted R-squared	0.341205	S.D. dependent var		8.470330
S.E. of regression	6.875044	Akaike info criterion		6.798112
Sum squared resid	2268.779	Schwarz criterion		7.019111
Log likelihood	-177.5490	Hannan-Quinn criter.		6.883343
F-statistic	6.489982	Durbin-Watson stat		2.155792
Prob(F-statistic)	0.000110			

Table 3: Empirical impact of Control activities (CA) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41.83564	16.07527	-2.602484	0.0123
CA	8.046432	2.119351	3.796650	0.0004
SIZE	1.230677	0.891218	1.380893	0.1737
LEV	0.087638	0.056214	1.558998	0.1256
T	-1.039216	0.703784	-1.476611	0.1463
LD	-0.000550	0.000426	-1.290483	0.2031
R-squared	0.294813	Mean dependent var		7.049778
Adjusted R-squared	0.221356	S.D. dependent var		8.470330
S.E. of regression	7.474286	Akaike info criterion		6.965253
Sum squared resid	2681.518	Schwarz criterion		7.186252
Log likelihood	-182.0618	Hannan-Quinn criter.		7.050484
F-statistic	4.013414	Durbin-Watson stat		2.074055
Prob(F-statistic)	0.004018			

Table 4: Empirical impact of Information and Communication (IC) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-27.82940	15.98130	-1.741373	0.0880
IC	4.781683	1.510977	3.164629	0.0027
SIZE	1.264080	0.926708	1.364055	0.1789
LEV	0.005692	0.061008	0.093305	0.9260
T	-0.966250	0.730916	-1.321971	0.1924
LD	-0.000388	0.000438	-0.884840	0.3807
R-squared	0.241334	Mean dependent var		7.049778
Adjusted R-squared	0.162306	S.D. dependent var		8.470330
S.E. of regression	7.752521	Akaike info criterion		7.038352
Sum squared resid	2884.876	Schwarz criterion		7.259351
Log likelihood	-184.0355	Hannan-Quinn criter.		7.123583
F-statistic	3.053789	Durbin-Watson stat		1.905424
Prob(F-statistic)	0.017940			

Table 5: Empirical impact of Risk Assessment (RA) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41.01902	16.27598	-2.520219	0.0151
RA	5.543062	1.545531	3.586510	0.0008
SIZE	1.678924	0.890604	1.885151	0.0655
LEV	0.084783	0.056874	1.490726	0.1426
T	-1.116167	0.712595	-1.566341	0.1238
LD	-0.000495	0.000430	-1.150462	0.2557
R-squared	0.276837	Mean dependent var		7.049778
Adjusted R-squared	0.201507	S.D. dependent var		8.470330
S.E. of regression	7.568952	Akaike info criterion		6.990425
Sum squared resid	2749.874	Schwarz criterion		7.211424
Log likelihood	-182.7415	Hannan-Quinn criter.		7.075656
F-statistic	3.675014	Durbin-Watson stat		2.155363
Prob(F-statistic)	0.006773			

Table 6: Empirical impacts of Monitoring (M) on ROE

Dependent Variable: ROE				
Method: Least Squares				
Sample: 1 54				
Included observations: 54				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41.82267	15.14950	-2.760663	0.0081
M	5.231382	1.146481	4.562991	0.0000
SIZE	1.610552	0.837950	1.922014	0.0606
LEV	0.064532	0.053248	1.211900	0.2315
T	-0.485754	0.683124	-0.711077	0.4805
LD	-0.000579	0.000406	-1.426406	0.1602
R-squared	0.360457	Mean dependent var		7.049778
Adjusted R-squared	0.293838	S.D. dependent var		8.470330
S.E. of regression	7.117910	Akaike info criterion		6.867545
Sum squared resid	2431.903	Schwarz criterion		7.088543
Log likelihood	-179.4237	Hannan-Quinn criter.		6.952775
F-statistic	5.410720	Durbin-Watson stat		1.988894
Prob(F-statistic)	0.000503			

The empirical results show that quality of internal control and each component of internal control, namely control environment, risk assessment, control activities, information communication and monitoring, have positive and statistical impacts on ROE of the construction companies listed on the stock exchange of Vietnam. The impacts are all statistically significant at the 99%.

The empirical results thus confirm the arguments for the benefits of internal controls for the case of listed construction companies in Vietnam.

These results imply that implementing and enhancing internal controls do not only mean to fulfill requirements of authorities, but also to help construction companies to control their various risks and costs better, thereby increasing their profitability. It is thus worth to suggest construction companies in general to enhance their internal control quality and each component of their internal control system for the benefit of stakeholders of the companies, including owners, tax authorities, creditors, employees, etc. Though establishing and implementing internal control are seen to be costly from the viewpoint of the board of directors, the positive and significant impacts of internal control on profit justify their worthiness. The empirical results imply that each component of internal controls should be established and implemented continuously and effectively.

As internal controls are complicated in nature and continuously evolve corresponding to the market, understanding about modern internal controls and its five components remain vague by companies' directors and managers. Training will be thus very useful. The stock exchange authorities may organize training courses about internal controls to help directors of listed companies understand clearly about the benefits and contents of internal controls, and the way to establish and run an effective internal controls. Vietnam Association of construction companies may also provide training about internal controls in construction companies. Besides, with expertise about internal controls, auditing firms should provide more consulting services to help listed construction companies to establish and monitor effective internal controls. As Control environment is the most important and complicated factor of internal controls, training and consulting should focus and devise in details for Control environment.

The positive impacts of internal control on profitability also imply that authorities may require the board of directors of construction companies to establish and implement their internal control adequately and effectively. This is for the benefit of company's stakeholders as well as for the sustainable development of society. From US experience, Sarbanes Oxley Act 2002 requires the board of directors of listed companies to state about the effectiveness of their internal controls in their financial statements and auditors have to verify and confirm such kind of statement. Similarly is the case of Singaporean stock exchange. This requirement is thus strongly relevant for construction companies listed in the Vietnamese stock exchange due to the positive role of internal controls. Auditors should then have responsibility to evaluate and to conclude about the clients' internal controls.

4. Conclusions

Internal controls have been discussed a lot in developed countries for their benefits of helping company' management to deal with risk and increase competitiveness. In Vietnam, internal controls remain rather new and not be aware well by company management. Listed construction companies play an important role in the Vietnamese economy, but face many kinds of risks, so the possibility to meet dividend expectation of shareholders is uncertain. The empirical results show that quality of internal controls and each component of internal controls have statistically positive impacts on profitability of listed construction companies in Vietnam. The results imply the necessity to establish and maintain effective internal controls in listed construction companies in Vietnam. This is for the benefits of not only listed construction companies' stakeholders but also for the society as a whole

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The Effect of Auditor Tenure, Mandatory Auditor Rotation on Audit Quality

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Abstract

This research is an empirical research studying the effect of the auditor tenure on audit quality. The research adopts the positivist stance and deductive approach, employing quantitative method to study the relationship between audit rotation and audit quality. Specifically, the Chinese audit market will be targeted where the policy was implemented in 2004. Basically, this study is about the trade-off between improving auditors' or firms' independence from the clients and the increase in effectiveness and efficiency due to prior knowledge of and relationship with the clients. The result shows the audit tenure has positive and significant relationship with DA, meaning too long tenure will harm audit quality, so it is the necessary to continue mandatory auditor rotation to avoid long tenure impact audit independent and quality.

Keywords: *Audit tenure; Audit rotation; Audit quality; Audit firms; Company size; Leverage; Profitability.*

1. Introduction

Background

After a sequence of accounting failures in the early 2000s (e.g. Enron/Arthur Andersen, WorldCom), regulators have been concerned about the possible dangers of long-term auditor-client relationships affecting the independence of audits and eventually, leading to lower audit quality. A lot of countries have made efforts to fortify auditor independence by passing legislations regarding intervention on the auditor-client relationship, including

mandatory auditor rotation. From October 1st, 2006, mandatory auditor rotation policy is passed by Australian government (Auditor rotation, 2007). Similarly, in China, companies listed on Chinese securities markets are required by China Securities Regulatory Commission (CSRC) to rotate auditors every five years (Firth, Rui and Wu, 2012). In the United Kingdom, rotation of statutory auditor after a maximum period of twenty years is required to all of the public listed companies by the U.K Competition and Markets Authority, with a mandatory tender at the ten-year midpoint in 2016 (PWC, 2016). However, in the U.S, although the Sarbanes-Oxley Act (SOX) considers and regulates the policy of mandatory audit rotation in 2002 (SEC, 2002). Public Company Accounting Oversight Board (PCAOB) confirmed to not follow the policy of in 2014 (Chasan & Emily, 2014).

Besides different regulations on the rotation of mandatory auditor, the mandatory audit rotation's effectiveness is still a controversial topic among professionals. Mandatory rotation advocates argue that it will help in prevention of development of long-term auditor-client relationships that often cause the independence and objectivity of auditing to suffer. A lot of studies have suggested that extended auditor tenures lead to a decline in audit quality which indicates a negative association (Deangelo, 1981) (King & K., 1994) (Carey & Simnett, 2006). Monroe and Hossain (2013) suggested that auditors tend to issue opinions of qualified going-concern for long - term financially distressed clients after a fixed period of time, and they also proposed that the implementation of mandatory auditor rotation will improve the quality of the audit.

Thereby, it is said that it is a question without a unanimous answer whether mandatory auditor rotation can actually bring about improvements in audit quality. This research is intended to figure out whether the auditor tenure actually relates to, and effects audit quality directly or not. Specifically, the Chinese audit market will be targeted where the policy was implemented in 2004. Basically, this study is about the trade-off between improving auditors' or firms' independence from the clients and the increase in effectiveness and efficiency due to prior knowledge of and relationship with the clients.

Research aim and objective

China is chosen as the empirical setting for the research for some reasons. Firstly, in China, firms are required to rotate their auditors, who sign the audit contract, every five years. Moreover, the audit partners' name must be disclosed in the audit reports in China while there is no requirement of disclosure in many countries such as U.S. This regulation allows the research to be able to identify situations where firms have rotated auditor according to the requirement of mandatory rotation. The second reason is that since 2006, audit companies in China should report their annual profits of the pre-audit of all of publicly listed clients to the Ministry of Finance (MOF). These data which are provided by MOF allows the academic research to identify the audit adjustments to reported profits (Lennox, Wu, & Zhang, 2014).

On the other hand, this research is motivated by two main motivations. The first one is the increasing in the demands of the markets for the enhanced quality of the audit

especially after a series of serious accounting scandals happened. The second motivation is the lack of studies in China examining the relationship between mandatory audit rotation and audit quality, which has been carried out in many countries especially where audit partner names are required to be published such as in Australia and Taiwan area.

The attempt to examine the research question:

What is the effect of auditor tenure (mandatory auditor rotation) and regulatory environment to audit quality in the Chinese audit market?

The objectives of the research:

1. To study the impact of mandatory audit rotation on audit quality for firms in China

2. Besides the objective of studying the relationship between mandatory audit rotation and audit quality, the research also aims to provide the insights into the relevant questions faced by Chinese auditing market for regulatory policy development in the future. For example, if there is no impact of mandatory audit rotation on the quality of the audit, regulators will be suggested to call for other alternatives and policies of restriction, such as mandatory rotation of the entire audit firm.

2. Literature Review

2.1. Audit independence

Auditor independence is of significance since it has a direct effect on audit quality. Deangelo is of the view point that audit quality can be defined as the likelihood that the auditor will unhide a breach and report it (Deangelo, 1981). If the independence of auditors is removed from the equation, the likelihood of irregularity reporting will decrease, and audit quality will get effected.

There are four important dangers to auditor independence: Client importance; Auditor tenure; Non-audit services and; Affiliation of client with the audit firms (Tepalagul & Lin, 2015). This study emphasizes on the auditor tenure threat. Long auditor-client tenure leads to the creation of familiarity between the two, which may lessen both the auditor independence and audit quality.

In the recent research, conducted on December 4, 2013, the US PCAOB held an open meeting where the proposal of improving transparency by necessitating the disclosure of the engagement partner's name was reconsidered. By linking the reputation of the partner to the audits publicly, auditor objectivity and independence is believed to improve (Tepalagul & Lin, 2015).

2.2. Audit quality definition and measure

There is no standardized definition of audit quality (Krishnan, Knechel, Pevzenr, Shefchik, & Velury, 2013) (Kilgore, Harrison, & Radich, 2014). Therefore, the measurement of audit quality has also been a cumbersome issue in the realms of academia for a long time. There are a lot of different proxies that researchers apply in order to assess the levels of audit quality. According to relevant studies, mainly from journal articles and reports by regulatory

bodies, the widely varying definitions of audit quality can be divided into three categories including: degree of compliance with relevant accounting standards (Hodgdon, Tondkar, Adhikari, & Harless, 2009) (Krishnama & Schauer, 2001) (Street & Gray, 2002), the likelihood of breach detection (Bck & Wu, 2006) (Defond & Zhang, 2014), (Deangelo, 1981) and the reflective stakeholder responses (Aloke & Doocheol, 2005) (Teol & Wong, 1993) (Libby, Bloomfield, & Nelson, 2002).

According to the third, reflective responses of the stakeholders are frequently taken as measurements of audit quality. When the stakeholders of listed companies are unable to access enough management and governance information, they usually focus on the quality of financial reports. This means that a usual way to measure audit quality is to look at the overall efficacy of the financial reporting or the quality of earnings (Behn, Choi, & Kang, 2008). Provided that no succinct or widely accepted reporting measure or earnings quality is present, researchers have inspected different earning quality dimensions like neutrality (proxied by the deviation of accruals that measures discretionary accruals from a certain norm), the ‘credibility’ of earnings (defined as the link between the market returns and earnings), and the earnings conservatism. Discretionary accruals and accounting conservatism are the two most commonly used for proxies, inspected in the literature. (Bing, Huang, Li, & Zhu, 2014)

Generally, researches have indicated an inverse relation between the audit quality and discretionary accruals. Because upward or downward management of earnings can be done depending on the objectives of the manager, huge absolute discretionary accruals are recognized as indicators of a low quality of earnings. This also complies with the finding in the study of Lin, Chen, & Lin (2008). Francis et al. (2013) also found the higher levels of clients’ discretionary accruals for auditors whose offices have had a higher incidence of past restatements, suggesting that earnings numbers that are of a substandard quality have an increased likelihood of resulting in audit failures. So poor quality earnings numbers are more likely to result in audit failures and auditor litigation, and large accruals are found to be positively associated with subsequent audit failures and auditor litigation. Liu et al., has argued that discretionary accrual is more effective under china's market environment than other proxies like earnings response coefficient (ERC) (Liu & Wang, 2006). Therefore, although reflective responses of stakeholder cannot measure audit quality directly, it can adopt discretionary accruals as the most suitable proxy to examine the research questions indirectly.

2.3. Auditor tenure and auditing regulatory environment

Most of the studies concur on the fact that the length of the auditor-client relationship can potentially impact the audit quality. Therefore, researches conducted on audit tenure are always accompanied by the audit quality. The widely spread debate on the issue of auditor tenure circles is around two differing arguments: The first is that short tenure causes the auditors to have limited knowledge of their clients and the second puts forth the notion that long tenure can affect the auditors’ objectivity.

Researches in this regard have identified both positive (Lin, Chen, & Lin, 2008) (Chi,

Huang, Liao, & Xie, 2009) and negative (Carey & Simnett, 2006) relations between the quality of financial reporting and the tenure of the auditor partner tenure. Many studies have analyzed the insight of long-tenure auditors by comparing new auditors. The evidences have been mixed. One of the results reveals that more confidence has been demonstrated in the financial information of a company after audit rotation (Gates, 2007). Another study indicates that long-tenure auditors are valued more than new auditors by both the debt and capital markets. (Aloke & Doocheol, 2005). Some studies have also revealed that lower levels of discretionary accruals are linked with auditor tenure (Myers, Myers, & Omer, 2003) (Johnson, Khurana, & Reynolds, 2002).

Furthermore, one research of auditing literature revealed that auditor tenure and auditor size and specialization can be seen as factors that affect accounting quality (Krishnan, Knechel, Pevzenr, Shefchik, & Velury, 2013). Similarly, IAASB (2011) introduced a commonly used classification that audit quality can be seen as a triangular system which has outputs, inputs and context factors at the three angles.

Although there are some studies regarding the auditor tenure for Chinese market, but there are no sufficient studies on the legal environment especially audit regulatory environment. A sound accounting and audit regulatory system is one of the basic premises to ensure audit quality. Currently, due to the lack of sufficient law and regulations in Chinese market, and also too many regulatory agencies make the authorities dispersed without a centralized core supervision. Hence, strict audit market regulation systems may result in better audit quality in some regions, but the rest with weaker systems may suffer an overall audit quality level. Extant researches mainly examine the influence of auditor tenure or other resource input of audit firms on audit quality as a whole market. However, in particular Chinese market, the differences of region developments and the levels of regulation systems cannot be ignored. Having acknowledged the issue, this research not only examines the auditor tenure, but also considers the auditing regulation systems in the different regions.

2.4. Mandatory auditor rotation

Differing countries decide to implement mandatory audit rotation in different forms. The list of countries that have implemented the regulation of mandatory audit partner rotation is France, Australia, China, Denmark, United Kingdom, Finland, Germany, Greece, and Singapore. The countries that carried out the implementation of the mandatory audit firm rotation regulation are Iceland, Brazil, Pakistan, Italy, Spain, and Iceland (Sayyar, Basiruddin, Rasid, & Sayyar, 2014). China is one of the few countries across the globe that has made it a requirement for certified public accountants (usually two) to sign audit report. An audit report with the name of individual auditors allows people to identify audit partner rotations based on the annual reports or the announcement information (Firth, Rui, & Wu, 2012).

In reality, similar phenomenon as 'opinion shopping' has been identified very earlier (MAY, 1987). Specifically, it means that enterprises prefer to go with audit firms that can ensure issuance of favorable audit reports. In the same way, auditors might attempt to retain

their clients by the issuance of clear audit reports. The necessary auditor rotation policy makes it compulsory to terminate the engagement contracts after specific periods of time. It also removes the possibility of client retention for an extended tenure, and there it can rid audit firms of the stress caused by ‘opinion shopping’.

However, when the audit engagement tenure is shortened, mandatory audit rotation can also lead to the decline of audit quality because client-specific knowledge might be limited. Similarly, whenever this issue has been theoretically discussed, an agreement has never been reached and the empirical findings have always been vague. Specifically, Dopuch et al. gathered evidence that demonstrated a positively associated relationship between audit quality and mandatory auditor rotation (Dopuch, King, & Schwartz, 2002). Conversely, the observations of Myers et al. reveal that mandatory auditor rotation has had adverse impacts on audit quality (Myers, Myers, & Omer, 2003).

3. Research method

3.1. Research design

This research aims to study the causal relation of mandatory auditor rotation, auditor tenure, regulatory environment to audit quality. Considering the research philosophy, goals, approach, an appropriate strategy supposed to combine experimental and documentary designs. With experimental design, this research develops two hypotheses and through statistical test to study the relationships between variables.

H1: There is a negative relationship between auditor tenure and audit quality

H2: Audit regulatory environment has influence on audit quality (discretionary accruals)

The above hypotheses will be tested by adopting pooled regression model.

Not only auditor tenure and regulatory environment, but also a few other elements that are put forward in previous researches have influence on audit quality. They are audit firms, company size, leverage and profitability. The formula then has been developed by adopting audit quality (measured by absolute value of discretionary accruals) as dependent variable (Da); auditor tenure and regulatory environment (classified as direct-controlled municipality of china and the remainder areas) as explanatory variables (Tenure and Dcm); audit firm (Big4), company size (Zize), leverage (Lev) and profitability (Roa ratio) as control variables.

As per to selected variables, the empirical model can be built up as follows:

$$|DA| = \beta_0 + \beta_1 TEN + \beta_2 DCM + \beta_3 BIG4 + \beta_4 SIZE + \beta_5 LEV + \beta_6 ROA + \varepsilon \quad (1)$$

Figure 3.1 illustrates all variables’ definition and code. The definition and theories about audit quality, auditor tenure, four direct-controlled municipalities of china have been discussed in detail in literature review, including two relevant concepts of audit independence and mandatory auditor rotation.

Figure 3.1: Variable and description

Coding	Variables	Definition
DA	Discretionary accruals	Absolute value of discretionary accruals can be estimated by modified jones model
TEN	Auditor tenure	The number of years auditor has been employed continuously
DCM	Direct-controlled municipalities	DCM=1 if a company from direct-control municipalities; Otherwise DCM=0;
BIG4	Audit firm	BIG4=1 if an auditor from big4 audit firms; Otherwise BIG4=0;
SIZE	Company size	Total asset;
LEV	Leverage	Defined as equals total liability scaled by total Assets;
ROA	Profitability	Defined as income before tax divided by total asset;

In order to estimate the value of discretionary accruals, some steps need to be taken (Dechow, Sloan, & Sweeney, 1995):

+ Estimating the value of β , β_1 , β_2 , and β_3 in the formula (2) by regression analysis:

$$TAt / At-1 = \beta + \beta_1 (1/ At-1) + \beta_2 [\Delta Sales / At-1 - \Delta Rec / At-1] + \beta_3 PPEt / At-1 \quad (2)$$

Figure 3.3: Variables to support modified jones model

Code	Variable
TA _t	Total accruals (also called net operating accruals) and can be defined as: “net income - cash flow from operations”
A _{t-1}	Last fiscal year-end total assets
ΔSales	Changes of sales from operation
ΔRec	Changes of accounts receivables
PPE	Fixed assets
NonDA _t	Non-discretionary accruals

+ Calculate non-discretionary accruals value by using formula (3) and coefficients β , β_1 , β_2 , β_3 (estimated from formula (2))

$$Nonda_t = \beta + \beta_1 (1/ A_{t-1}) + \beta_2 [\Delta Sales / A_{t-1} - \Delta Rec / A_{t-1}] + \beta_3 PPE_t / A_{t-1} \quad (3)$$

+ The value of discretionary accruals (operating da) can be achieved through formula (4):

$$DA = TA_t/A_t - NonDA_t/A_t \quad (4)$$

3.2. Sampling and Data collection

Ten main industries of China are chosen including agriculture, manufacturing, mining, construction, media.... In each industry, 5 companies are selected randomly, making up total 50 companies from Shanghai Stock Exchange (SSE) and 50 companies from Shenzhen Stock Exchange (SZSE). Data will be collected for the period of 5 years from 2013 to 2017. Finally, the research has 100-company sample and hence 500 observations. Among them, some are from direct-controlled municipalities of china which have more strictly regulatory control. So it is exactly matched with location classification requirement.

This research uses two main data sources, one is the annual reports which allow users to collect financial data and signing auditor information disclosed for public on company's website or SSE and SZE. Another is the official website/database authorized by CSRC, named CNINF, which can be assessed from the address <http://www.cninfo.com.cn/cninfo-new/index>.

4. Analysis and finding

4.1. Data descriptive statistics

Figure 4.1 summarized the statistical description for the research's chosen sample over five years from 2013 to 2017. The lowest audit quality (DA), also the best audit quality, in Chinese stock market is 0. The biggest is 6.639, showing the possibility that there might be some particular companies suffering poor audit quality. However, in general, the average value stood at an acceptable level of 0.229, representing a relatively good audit quality through these years.

Figure 4.1: Variable description

	Range	Mean	Std. Deviation
DA	0.000 - 6.639	0.229	0.018
TEN	1.000 - 6.000	2.654	0.058
DCM	0.000 - 1.000	0.430	0.022
BIG4	0.000 - 1.000	0.074	0.012
SIZE	3,083,701 - 1,595,504,000,000	41,403,430,739	7,250,162,773
LEV	0.030 - 8.612	0.513	0.020
ROA	-6.772 - 8.449	0.035	0.022

The recent five years' Chinese audit quality has also been improved compared with the prior researches, which used the same modified Jones model. In the research of Chen, Lin, & Lin (2008), the previous years' discretionary accrual was really high, with the mean and biggest value of audit quality estimated at 7.28 and 48.35, respectively, by samples from year 1999 to 2006.

In addition, another important data, tenure range, is from one year to six years, demonstrating that most of Chinese companies has been following the mandatory rotation policy. And some may take one year cool-off, so display 6 years. The mean value of 2.654 is similar with the previous researches, stating that the Chinese average auditor tenure is around 3 years through most periods of time (Bandyopadhyay, Yu, & Chen, 2014).

4.2. Result analysis

Figure 4.2 shows the correlations between variables. It can be seen that among independent and control variables, return on assets ratio (Roa) and tenure are strongly correlated with the dependent variables discretionary accruals. Besides, the high correlations are also seen between firm size (Size) and audit firm (Big4) and between return on assets ratio (Roa) and leverage (Lev). Therefore, there is a chance of collinearity problem. This

problem can be accessed through the value of VIF shown in the figure 5.5 - coefficients. However, all the value of VIF in the figure 4.5 are at the safe level, which can be understood that there is no problem of serious collinearity in the model.

Figure 4.2: Correlations between variables

		Da	Ten	Dcm	Big4	Size	Lev	Roa
Da	Pearson correlation	1						
	Sig. (2-tailed)							
Ten	Pearson correlation	.274**	1					
	Sig. (2-tailed)	0.000						
Dcm	Pearson correlation	-0.004	0.010	1				
	Sig. (2-tailed)	0.936	0.815					
Big4	Pearson correlation	-0.001	0.040	.217**	1			
	Sig. (2-tailed)	0.977	0.374	0.000				
Size	Pearson correlation	-0.002	-0.011	.192**	.555**	1		
	Sig. (2-tailed)	0.957	0.814	0.000	0.000			
Lev	Pearson correlation	0.038	-0.002	-0.063	0.012	0.037	1	
	Sig. (2-tailed)	0.402	0.970	0.161	0.781	0.411		
Roa	Pearson correlation	.535**	0.018	0.010	0.000	0.002	-.540**	1
	Sig. (2-tailed)	0.000	0.691	0.828	0.991	0.964	0.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 4.3 is the practical calculations for formula (2) - (4), with final aim to get the value of discretionary accruals.

Figure 4.3: Value of betas in the model 1

Beta	Value
β	-0.058
$\beta 1$	18333598.699
$\beta 2$	-0.001
$\beta 3$	0.352

As proposed above, the regression model includes the dependent variable: Discretionary accruals (Da), two explanatory variables (audit tenure and direct control municipality) and four control variables (firm size, audit firm and return on total assets and leverage). The results for the regression model are shown in the figure 4.4 and 4.5.

Figure 4.4: Model Summary

Model	R	R Square	Adjusted R Square
1	.711 ^b	0.506	0.500

a. Predictors: (Constant), DCM, Tenure
b. Predictors: (Constant), DCM, Tenure, ROA, SIZE, LEV, BIG4
c. Dependent Variable: DA

It can be seen from figure 4.4 that R^2 and adjusted R^2 , coefficients of determination of linear regression outcomes are 0.506 and 0.500, respectively, that means 50.6% of the variance in the dependent variable discretionary accruals (Da) could be explained by the six explanatory and control variables of the model. Overall the linear regression model has a good fit and seems highly significant as evident from the significance (sig.) of 0.000.

Figure 4.5: Coefficients

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.	Collinearity statistics	
		B	Std. Error	Beta			Tolerance	Vif
A.	(constant)	-0.236	0.037		-6.417	0.000		
	Tenure	0.082	0.010	0.261	8.224	0.000	0.996	1.004
	Dcm	-0.005	0.027	0.021	0.640	0.881	0.940	1.064
	Big4	-0.023	0.060	-0.014	-0.376	0.707	0.677	1.476
	Size	-3.598e-14	0.000	-0.014	-0.371	0.711	0.684	1.462
	Lev	0.432	0.035	0.461	12.216	0.000	0.702	1.424
	Roa	0.645	0.031	0.780	20.704	0.000	0.706	1.416

A. Dependent variable: Da

The result reveals the positive and significant impact of audit tenure on discretionary accruals. That means the longer the tenure is, the bigger the amount of discretionary accruals is, which represents the lower level of audit quality. Therefore, it can be concluded that audit tenure has negative effect on audit quality. H1 is confirmed and accepted. If the auditors are changed regularly, it will prevent over-close relationships with client. And also, they will not have the pressure to keep clients, so the audit independence has been protected, as discussed in literature review. Some prior researches also get the similar result, Monroe & Hossain (2013) find that there is a strong association between audit partner tenure and audit quality, but they use the proxy of going-concern opinion for audit quality. And also, Firth, Rui, & Wu (2012) concluded a positive relationship between mandatory audit partner rotation and audit quality.

Regulatory environment is found to have a negative but insignificant impact on discretionary accruals, showing that if the company is the direct-controlled municipalities, its discretionary accruals may be low, and the audit quality, hence, is high. This result is also confirmed by the research of Li (2010) which states that the high audit concentration and regulation areas of China shows positive relationship with audit quality. However, whether a company is the Direct-controlled Municipalities or not has no great impact on audit quality.

Besides, the research also found the negative and insignificant impact of audit firm and size on discretionary accruals, which means audit firm and size are positively associated with audit quality. The findings of last researches on these relationships are mixed. It is

known that Big4 have a good reputation on audit service. However, Monroe and Hossain (2013) concluded that there are no strong evidences that shows Big4's clients have a higher audit quality. It might be because nowadays, audit services are being improved thanks to the appearance of many good audit firms, and during collecting auditor information, it is revealed that the portion of the Big 4 audit firm is not very high.

Furthermore, both of LEV (Leverage) and ROA are found to have positive and significant effect on discretionary accruals and hence, negative and significant effect on audit quality. This means when a company's leverage and ROA is higher, discretionary accruals also high, which can be understood as poorer audit quality.

5. Conclusion and Discussion

In conclusion, this research is a quantitative method research studying the relationship between auditor tenure and audit quality. At the same time, it also examines the association between regulatory environment and audit quality.

The result shows that the audit tenure has positive and significant relationship with audit quality, meaning too long tenure will harm audit quality. It is, hence, necessary to maintain mandatory auditor rotation policy to avoid the negative impact of long tenure on audit independent and quality. In addition, the research also reveals a strong impact of leverage and profitability on audit quality.

Beside the significance of its findings, the research also has its own limitations. Firstly, the research is designed to use quantitative method as the researcher adopts the positivist stance of philosophy. However, quantitative method and deduction approach as natural science might be considered to be more rigid and inflexible when understanding cause – effect link, which is supposed to be affected by many variables including human interpretation and understanding (Saunders, Lewis, 2012). In this way, mixed method can be more effective than using solely one method.

The second drawback of this research is the proxy of measuring variables. There are different ways to measure one variable. For example, beside discretionary accruals, audit quality can also be assessed by the degree of compliance with relevant accounting standards or the likelihood of breach detection. Profitability can be measured either by the ratio of profit after tax to total asset (ROA) or by the ratio of profit after tax to total equity. Hence, it is hard to choose a proxy which can be complete substitute for one variable.

With the limitations analyzed above, the ideas for the future research on similar topics might be the research with the combination of both quantitative and qualitative method, more aspects covered such as corporate governance in order to get better insights into the relationship between auditor tenure, mandatory auditor rotation on audit quality.

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**International Conference on Finance, Accounting and Auditing (ICFAA 2018)
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**Introduction to Risk-Based Internal Auditing and Lessons Learnt
for Commercial Banks in Vietnam**

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Abstract

Background: It is essential for Vietnam Commercial Banks to improve roles and effectiveness of internal auditing (IA), which will ensure their safe and sound development in the market economy and meet international standards for financial institutions. From only involving in periodic inspecting and monitoring, modern internal auditors are expanding on risk-based activities and assisting enterprises to make strategic decisions.

Scope and approach: The paper aims to give insight in the current approach in the banking internal audit system. Furthermore, the need for modern approach in risk-based auditing is discussed by introducing contemporary model in developed countries. Using structured questionnaires and interview, the author collects recommendations from Vietnam banking and auditing experts about risk-based auditing trend in Vietnam.

Key findings and conclusions: Moving to risk-based auditing will lead to more effective corporate governance in every organisations, especially in risky and highly regulated industries. A new paradigm in risk based auditing is needed to ensure sustainable development for commercial banks, however, for emerging economies like Vietnam, a lot of preparation for knowledge, system and resources should be available before comprehensively applying this audit system.

Keywords: *Commercial bank, Internal auditors, Risk-based.*

1. Introduction

According to the Definition of Internal Auditing in The IIA's International Professional Practices Framework (IPPF), internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic,

disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

The operations of internal audit uninterruptedly change as the economy, organizational activities and risks develop over time. A number of corporate failures, accounting scandals, and the collapses of corporations, especially in banking industry lead to the fact that the internal audit should be transformed to improve corporate governance in any organization.

Table 1: Major failures and Accounting Scandals in banking industry

Name of organization	Year	Country
Baring Bank	1990s	UK
Crédit Lyonnais	1990s	France
Berliner Bank	1990s	Germany
Banking Industry (in the Asian crisis)	1997	Asia
Northern Rock	2007	UK
Lehman Brothers	2010	USA
HSBC, Lloyds, Royal Bank of Scotland, Barclays	2012	UK
J.P Morgan	2012	UK

By enhancing their roles, internal audits implement various services and activities to their key stakeholders (Board of Directors, Audit committee, senior managements, regulators...) Over the last few decades, internal audits have improved and expanded from their traditional roles such as monitoring, inspecting, assessing internal control system to a contemporary internal audit approach. By changing or improving their role, internal audit can provide different types of services (or activities) to their key stakeholders (such as the board, audit committee, senior management, operating line managers, regulators, external auditors) according to their needs. Internal audit services and activities have improved and expanded from the traditional role that focused on financial compliance, internal controls, operational, computer, value-for-money, quality and management auditing to a modern approach. This contemporary role is designed to provide assurance and consulting services, value-added activities; business insights and strategic advice services especially risk management. In fact, controlling risks play a vital role in retaining a sound internal control system. While the responsibility for identifying and managing risks belongs to management, one of the key roles of internal audit is to provide assurance that those risks have been properly managed. This suggests every organization to adopt a new approach - the Risk based internal audit to deal with above issues.

2. Literature Review:

The IA is one of the fastest developing jobs in the last seven decades since the foundation of the IIA (Reding et al., 2013). Selim and McNamee (1999) suggest that there are current three stages for the IA: performing observation and counting physical items in

the early day of IA, control-driven audits (1940s-1990s) and the contemporary risk-driven approach. By taking into account uncertainty and risky nature of current business activities, risk management is a focal point in good corporate governance practice. (The IIA UK and Ireland, 2003). The IA will play critical roles in mitigating all the risks which hurdle the organizations to achieve objectives (Griffiths, 2015). It is inevitable for each origination to in-depth risk management with the increasing contributions from the IA (Sarens and De Beelde, 2006). IA will concentrate on high risk areas and the working will be carried out in more efficient manner (Colbert and Alderman, 1995). By implementing matrix risk, risk-based IA includes determining and assessing risks right from audit planning (Ayvax a and Pehlivanli, 2010). Since the late 1990s, many accounting firms have been conducting audit methodology basically called risk-based auditing (Bell, Peecher, & Solomon, 2005, Chapter 2; Knechel, 2007; Lemon, Tatum & Turkey, 2000). IIA defines risk based internal auditing (RBIA) as a methodology that links internal auditing to an organization's overall risk management framework. RBIA allows internal audit to provide assurance to the board that risk management processes are managing risks effectively, in relation to the risk appetite. Griffiths, 2006 agreed that risk-based IA should be conducted on the risk-appetite of organizations. The fundamental principal of this IA approach is analyzing risks before the audit work, aiming to optimize the human resources and taking into account all main risks. All of the previous studies mentioned the roles of IA in assessing, identifying and managing risks, but some organizations do not realize the importance of moving to risk-based approach for the IA. Therefore it suggests for introducing this model in Vietnam. The author expects by applying this model, the quality of internal audit work and performance of commercial banks will be improved.

3. Theoretical framework:

Practitioners and regulators were both confident that risk-based auditing will enhance the audit quality. The Auditing Standard Board (ASB) require that its risk assessment standards must include in-depth understanding of the entity and its environment to identify the risk of material misstatement in the financial statement, linkage between risks and the nature, timing and extent of audit procedures.

The same ideas are applied to RBIA, when RBIA implements an audit plan with lots of activities from strategic analysis to risk assessment. RBIA is developed by identifying and assessing risk elements, through strategic analysis and designing the auditing process in line with risk matrix or risk map (Ayvaz a & Pehlivanli, 2010). Internal audits focus on high risk areas, so that the engagement will be performed in a cost-effective manner (Colbert & Alderman, 1995). The risk now is assessed before starting audit engagement which helps the most optimal resource allocation and create value for the organization. A research conducted by IIA (UK & Ireland) and KPMG (2005) showed that 89% of Chief Audit Executive use risk based methods for yearly planning audit work, 93% use a risk based approach in internal audit engagements. Risk assessments are implemented at each internal audit work to identify risk level and evaluate the adequacy and effectiveness of internal control system (Nuno, Lucia,

& Russel, 2009). Therefore, RBIA is an active process, continuously developing so that it differs from traditional method.

Although RBIA is being used in a number of places all over the world, it is still new to many organizations. If the risk management framework is not really strong or does not exist, the organization is not ready for RBIA. More importantly, it means that the organization’s system of internal control is poor. Internal auditors in such an organization should promote good risk management practice to improve the system of internal control. IIA provided guidance on how to implement RBIA in 3 stages follows:

Stage 1: Assessing risk maturity

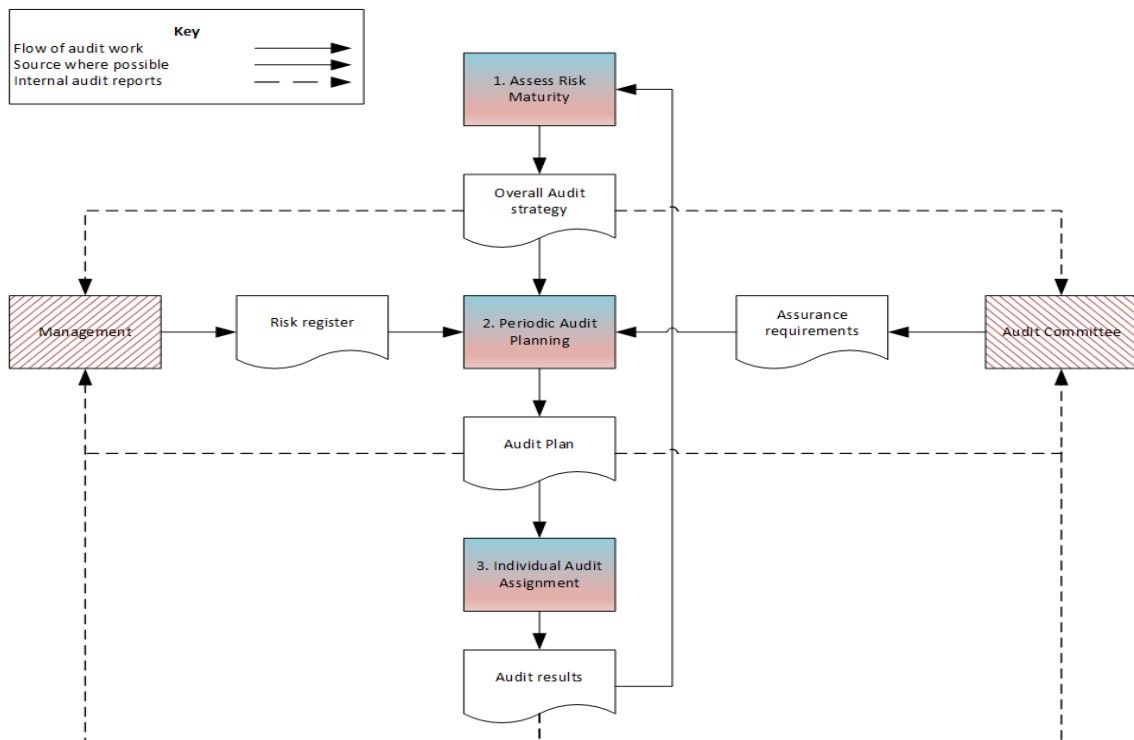
Obtaining an overview of the extent to which the board and management determine, assess, manage and monitor risks. This provides an indication of the reliability of the risk register for audit planning purposes.

Stage 2: Periodic audit planning

Identifying the assurance and consulting assignments for a specific period, usually annual, by identifying and prioritizing all those areas on which the board requires objective assurance, including the risk management processes, the management of key risks, and the recording and reporting of risks.

Stage 3: Individual audit assignments

Carrying out individual risk based assignments to provide assurance on part of the risk management framework, including the mitigation of individual or groups of risks.



The instruction from IIA above only provided general ideas for organization to adopt RBIA. Although banking is one of the most risky industries and under rigorous national and international requirements, there is no detailed guidance on how to implement RBIA in

banking industry. This paper recommends commercial banks to refer to this general instruction to apply RBIA with considerations of their own conditions and development. The author also suggests further research on practical implementing RBIA approach in banking industry and impacts on the overall banking performance in the following papers.

4. Methodology

Starting from researching transformation of the contemporary IA as well applying Risk-based IA in banking industry, this paper uses process of a synthesis and antithesis of the ideas found in the specialty literature and in the norms specific to the analyzed fields. The author also used a constructivist approach that was applied step by step by reviewing some best practices of risk-based auditing in developed countries, especially in commercial banks. The paper also conducted constructed questionnaires and interview to some of the banking and finance experts to obtain their opinion about the current and future development of IA in Vietnam.

Moving to RBIA is a suitable and inevitable direction for all commercial banks in Vietnam, especially when a number of them are implementing standards and regulations under Basel II, this is also the point of view of many experts in banking and finance industry in Vietnam. One of the most central documents by the Basel committee is BCBS 223, in which 20 guidance and recommendation for banks and banking supervisory body are introduced. In this documentation, there are some instructions about organizing and conducting internal audit in commercial banks and how to implement assessment and monitoring internal audit activity for banking supervisory body.

Mr. Dinh Tuan Hung, director of Market risk department-BIDV said that, all banks are recommended to create and issue internal audit manuals with at least 7 sections: purpose and scope of the IA, requirements for the IA, reporting procedures, outsourcing the IA, responsibility of IA head, applicable practice and standards for the IA, working procedures with external audit and management body. Internal audit operation should be conducted based on risk-based activities, and the scope of work should be updated and revised annually, in which there must be internal audit area under regulations of management body (risk assessment, capital adequacy, liquidity, compliance, finance) and the requirements from banks. Banks should ensure they have enough capabilities to monitor and assess the effectiveness of the IA, risk assessment procedures, banking governance (including outsourcing activity and branches' operation)

Dr. AJ Purcell, Head of Internal Audit department from CPA Australia also shared his opinion about international IA by saying that the current function of IA is mainly focusing on compliance risk and monitoring traditional financial system. Compliance risk is exposure to legal penalties, financial forfeiture and material loss an organization faces when it fails to act in accordance with industry laws and regulations, internal policies or prescribed best practices. Many compliance regulations are enacted to ensure that organizations operate fairly and ethically. For that reason, compliance risk is also known as integrity risk. Compliance risk management is part of the collective governance, risk management and compliance (GRC)

discipline. Penalties for compliance violations include payments for damages, fines and voided contracts, which can lead to the organization's loss of reputation and business opportunities. Compliance risk is also a major topic when implementing RBIA.

In the conference “Changes in International Professional Practices Framework (IPPF) and development of IA in Vietnam” in 2017, most of the experts agreed that banking was a high risk industry, therefore defense lines were very important and the IA played very essential roles in assessing and controlling risk. The standard, framework, ethics and working techniques should always be reviewed and enhanced. In this conference, experts highlighted two new standards regarding roles of IA head in an organization. Beside traditional IA function, the IA head is also responsible for risk assessment, compliance and other events affecting the independence of the IA. The experts also recommended the IA department to regularly refresh their selves by updating new standards, regulations and apply new technology in IA activities.

Mr. Tram Tuan Vu, Vice director of Ho Chi Minh Stock-Exchange stressed that, IA provides a lot of benefits to organizations and this is a useful tool to identify and improve weaknesses in any company. By the IA functions, Board of Director and Board of Management can effectively control their business, improve chances to reach goals and better risk management. The IA can boost confidence of shareholders and investors in the stock market about the company’s corporate governance.

Although there are many difficulties in term of technical area, human resources and national regulations, movement to RBIA will be helpful for banks in different ways. It will take time for commercial banks to apply RBIA, the author believe that the benefit will far outweigh the disadvantages.

5. Recommendations and Suggestions

Transforming to RBIA is currently introduced and applied in Vietnam, however, the movement has not been completed in a comprehensive way. While many banks start for this change, some others are not ready. To meet the standards and regulations from State Bank of Vietnam and Basel II to adopt RBIA, it is crucial for each bank to consider following recommendations:

1. Top management of commercial banks is not aware of the importance of regular monitoring and inspecting. They only conduct special investigation when abnormal events occur. Therefore, the internal audit manual should be created to facilitate periodic and continuous evaluating, reviewing and inspecting.

2. The total number of branches being audited as compared to the whole network of each bank is too small. Some audit engagement is conducted but the scope of work is limited and the audit results do not reflect the overall limited area of each bank, misstatement are not timely controlled and prevented. So the current internal audit practice should be reviewed and the scope of audit must be implemented in the whole banking system, including the Head Office, branches, and departments and banking products.

3. The risk assessment is an important step in audit planning, however, many banks abandon this procedure when planning the engagement, and they only carry out this step in the field work. All banks must prioritize the risk evaluation process and set a requirements to apply this procedures in all audit arrangement.

4. Effective use of the internal audit resources no longer means keeping a high quality audit program that clear banks from troubles. The internal audit department should improve the business through actual value-added audits and recommendations.

5. Regular training for internal audit staffs to provide the most updated international guidance and standards. In particular, training of staff at branches, risk management division through special programs in Risk management and RBIA.

6. Support staffs to pursue international internal auditing qualification like CIA by the IIA is one of the most effective way to enhance their professional skills, knowledge and competence.

7. Formats for risk assessment under RBIA should be prepared. RBIA should be implemented and reviewed in updated formats and working papers.

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**The Effectiveness of Internal Auditing – Overview of Measurement
Methods**

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Abstract

In recent years, the Internal audit (IA) has experienced remarkable changes, in which the role and function of internal audit in the new business environment have been highlighted. Internal auditing has become an indispensable risks control mechanism in both public and private organizations. However, so far there has been little researches on the effectiveness of IA. In practice, the global economic crisis has created many difficulties for enterprises and required them to improve their risk management capabilities as well as review the performance of internal audit. This paper focuses on the effectiveness of internal audit and methods of measuring the effectiveness of internal audit. Based on fundamental type of research, trying to make a review of main approaches, ideas and opinions of high rated specialists regarding the internal audit's performance and analysis of the latest internal audit practices at leading international companies, the main objective of the paper is to synthesize the most appropriate methods that can be used to measure the effectiveness of the audit. From the international point of view, this paper identifies the main trends that will affect the internal audit activities creating value for the organization.

Keywords: *Effectiveness of internal audit, Internal audit, Methods of measuring, Performance of internal audit, Value added.*

1. Introduction

In the recent years, the internal audit (IA) has experienced many critical changes with its extended involvement to add more value to a company. Against the traditional perspective in which the role of the IA focused on compliance assurance, financial control and assets safeguarding, after the corporate financial scandals of the 2000's, many reforms (Sarbanes-Oxley Act 2002; Combined Code 2003; OECD 2004; IFAC 2006) have emphasised the

responsibilities of IA in enhancing corporate governance mechanisms. Therefore, IA has become a value creator improving the effectiveness of risk management, control and governance systems (Bou-Raad 2000; Roth 2003; Hass et al. 2006; Cohen et al. 2010). The Institute of Internal Auditors (IIA) refers to the new approach of the function in its latest definition of internal auditing (IIA, 2004): “Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes”. Through the expanded roles of the IA, internal auditors have become an essential monitoring mechanism in corporate governance alongside external auditors, audit committees and executive management (Gramling et al. 2004). The purpose of IA is to assist an organization to achieve its goals (Roth 2003; Hass et al. 2006). For this purpose, IA may undertake many activities in the form of assurance or consulting services.

In this context, the issue of measuring and assessing the effectiveness of internal auditing is becoming more and more considered, by both auditors and those who are following and using the results of internal audits. The International Standards for the Professional Practice of Internal Audit states that “The chief audit executive must develop and maintain a quality assurance and improvement program that covers all aspects of the internal audit activity” (1300- Quality Assurance and Improvement Program) (IIA, 2008). According to the interpretation offered by the new version of internal audit standards issued by IIA in 2008 and applicable with 2009 “this program also assesses the efficiency and effectiveness of the internal audit activity and identifies opportunities for improvement”.

Various views on the internal audit function have showed a profound concern about the added value generated by internal auditors, and reliable methods of measuring performance of internal audit. Internal audit therefore faces a significant challenge including finding the best and most suitable metrics to measure the effectiveness of internal audits and quantify the level of achieving goals by IA (Prawitt, 2003).

In this business environment, determining which methods of measuring internal audit effectiveness are reliable and appropriate is very important for the development of enterprises.

2. Literature Review/ Theoretical Framework and Methods

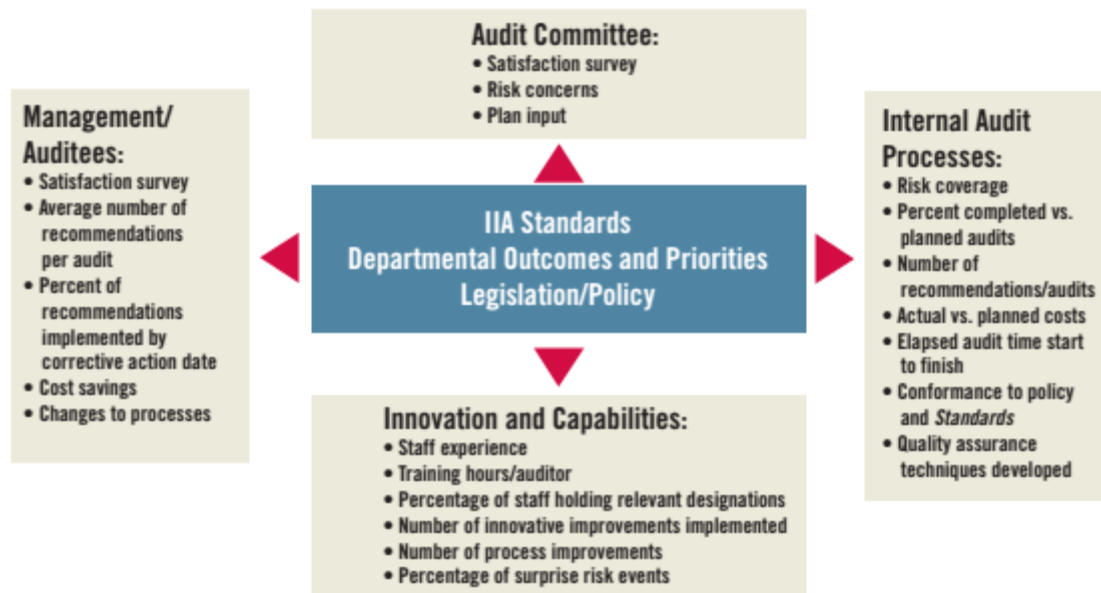
(1) From the Practitioner’s perspective

According to IPPF – Practice guide Measuring Internal audit effectiveness and efficiency, IIA² 2010, defines the effectiveness and efficiency of IA is the degree (including quality) to which IA achieves established objectives. In this material, there is no difference between effectiveness and efficiency and these terms always are used together and alternatively. From this definition, this Practice guide proposes that Internal auditing should establish performance metrics and related measurement criterion appropriate to its

² Institute of Internal Auditors (IIA) is an international professional association with global headquarters in Lake Mary, Florida, USA. The IIA is the internal audit profession's global voice, recognized authority, acknowledged leader, chief advocate, and principal educator. Generally, members work in internal auditing, risk management, governance, internal control, information technology audit, education, and security.

environment/ organization to measure the degree (including quality) of achievement of objectives for which the internal audit activity is established. Applying a Balance scored card type approach, this practice guide provides guidance to internal audit activities on measuring their effectiveness and efficiency and the level of customer services they provide to stakeholders with both quantitative and qualitative metrics.

Fig. 1. IIA Standards Departmental Outcomes and Priorities Legislation/Policy



Source: Adapted from A Balanced Scorecard Framework for Internal Auditing Departments, by Mark Frigo, copyright The IIA Research Foundation, Altamonte Springs, FL, 2002 used with permission.

This document is a good reference for both researchers and practitioners because of its detailed examples and guidance which includes in the specific appendix, such as: (i) Questions that should be answered to adequately gauge and provide to varied stakeholders reasonable assurance of Internal Audit Quality; (ii) Examples of Internal audit effectiveness and efficiency metrics; (iii) Example of reporting Internal audit effectiveness and efficiency dashboard; (iv) Example of customer survey sent after Internal audit is completed.

Ernst&Young, one of Big Four Audit firms, conducted a few relevant studies regarding the international audit practices, the results being incorporated into so called studies “Global Internal Audit Survey”. The report “Global Internal Audit Survey 2007” (Ernst&Young, 2007) highlights the findings of survey made through internal audit executives representing 138 predominately public companies representing membership in the Global Business Week 1000, and the Standard&Poor’s Global 1200 from 24 countries, most of the participants’ companies being large multinational functions with revenues over US\$ 4 billion. The results of this survey show that half of the respondents (50%) do not track the value their internal audit function provide to the organization, while only 13% measure value based upon actual cost savings. The importance of value tracking is given by the fact that reinforces internal audit’s relevance as well as help to justify the investment in necessary

resources for internal audit. Regarding the methods used for the evaluating of internal audit's performance, the survey (Ernst&Young, 2007) showed that:

The most used methods measuring internal audit's effectiveness are represented by:

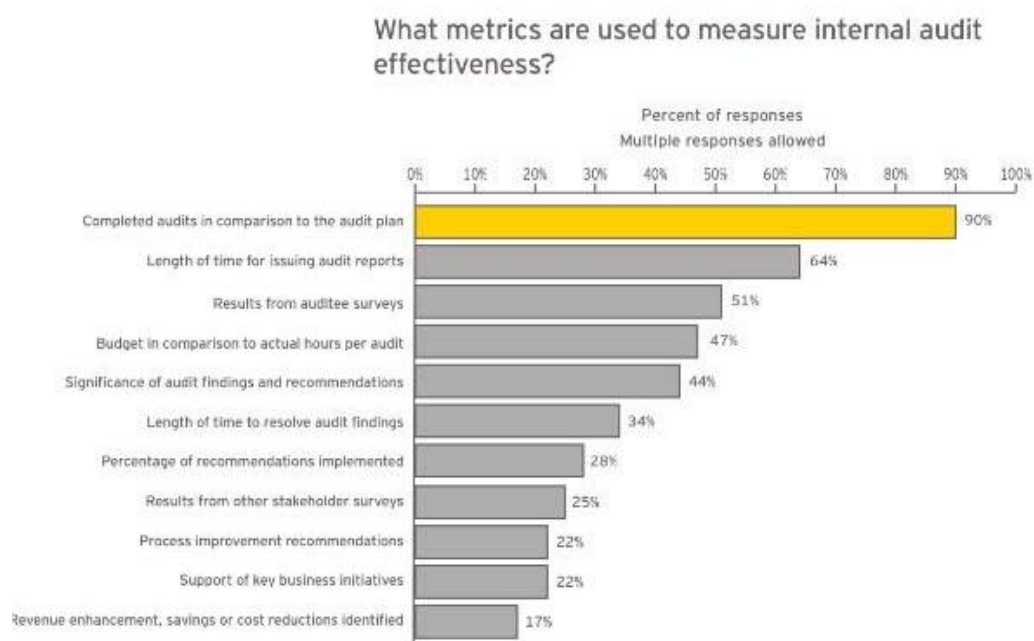
- Completed internal audits in comparison to the internal audit plan (89%);
- The length of time for issuing internal audit reports (72%);
- Only 32% of respondents use length of time for resolve internal audit findings as a key metric, and
- 23% use support of key business initiatives.

The survey realized by Ernst&Young one year later (Ernst&Young, 2008) emphasized that beside the methods (identified in 2007 survey) used in measuring internal audit's performance: *completed internal audits in comparison to the internal audit plan* and *the length of time for issuing internal audit reports*, there is one more frequently used namely *the results from shareholders surveys*. The survey (Ernst&Young, 2008) identified that:

- only 34% of respondents use length of time to resolve internal audit findings and
- only 22% use support of key business initiatives as a key metric.

According to Ernst&Young Survey from 2008, the most used methods to measure internal audit effectiveness are presented in Figure.2.

Fig. 2. Metrics used in measuring internal audit effectiveness



Source: Ernst&Young (2008)

Starting with 1993, The IIA's Global Auditing Information Network (GAIN) has realized different benchmarking information over different topics of internal audit. Many GAIN participants were interested to identify the most relevant methods for evaluating the

internal auditing department effectiveness. According to Ziegenfuss (2000), the results of a study involving CAEs participating in the GAIN project are presented on below tables:

Table 1. TOP 20 Gain Performance Measures as ranked by CAEs

Overall Ranking	Performance measures	Audit process
1	Staff experience	Input
2	Auditing viewed by the audit committee	Audit environment
3	Management expectations of internal auditing	Audit environment
4	Percent of audit recommendations implemented	Output
5	Auditor education levels	Input
6	Audited satisfaction survey	Process
7	Importance of audit issue	Output
8	Training hours per internal auditor	Output
9	Audit committee satisfaction survey results	Audit environment
10	CAE reporting relationships--functional	Audit environment
11	Audit committee risk concerns	Audit environment
12	Number of complaints about audit department	Process
13	Role of internal auditing viewed by the audited	Audit environment
14	Number of management requests	Audit environment
15	Percent of certified staff	Input
16	Number of process improvements	Output
17	Quality assurance techniques developed	Audit environment
18	CAE meets privately with audit committee	Audit environment
19	IT integrated auditing	Audit environment
20	Average years of audit experience	Input

Source: Ziegenfuss (2000)

The findings in the table above show a quite interesting fact that up to 50% of the measures are used to assess the audit environment, where *Auditing viewed by the audit committee & Management expectations of internal auditing* are ranked very high at second and third. Measures evaluating input and output equate to 20% of each. Input measure ranked No. 1 among 20 measures is *Employee Experience* and highest output measure, ranked No. 4 in total *Percent of audit recommendations implemented*. This fact is a good guiding for the researchers to find the most powerful determinants affect the internal audit performance and a good reference for the practitioners, such as management of internal audit activities to find the ways to improve the effectiveness and efficiency of internal auditing.

PROTIVITI (one of the largest providers of internal audit services and consultancy from United States and Canada) has cooperated with The Institute of Internal Auditors (Protiviti Knowledge leader, 2010), to continue the series of studies realized by Protiviti starting with 2005. Each of these studies analyses the internal audit practices at leading international companies from different point of views. The last volume (VI) “Internal Auditing Around the World” tries to establish a summary of the profiles of technology enabled internal audit functions at leading international companies. Due to the value provided by technology-based audit and data analysis techniques, internal audit has now the capability to examine vast amounts of data, identify patterns and potential risks, in this way internal audit being able to provide better recommendations to management and to the board, which would determine a greater effectiveness and performance for internal audit activity. The study (Protivi Knowledgeleader, 2010) presents data for nine international leading companies. Based on synthesis of Cristina Bota-Avram et al (2011), elements of internal

audit practices used by these companies in the measuring of internal auditing performance are given below:

Table 2. Elements of internal audit practices

Company's information	Metrics used for measuring of the internal audit performance
<p>1. ACCENTURE: Industry: Professional Services Number of employees:181.000 Annual Revenues: US \$ 21.6 Billion Auditors in IA Function: 45 Number of Years IA Function has been place: 9 IA Director/CAE reports to– Chief Risk Officer (CRO).</p>	<p>Effectiveness of global risk coverage Scope and dept of coverage Quality of internal audit reporting to management and the audit committee Quality of internal audit staff (leadership, development and qualifications) Efficiency of the overall internal audit function Efficiency in covering existing and emerging risks and new businesses Using of balanced scorecard approach to track key departmental metrics.</p>
<p>2. COMMONWEALTH BANK: Industry: Financial Services Number of employees:44.218 Annual Revenues: AUS \$ 34.9 Billion Auditors in IA Function: 90 Number of Years IA Function has been place: 21 IA Director/CAE reports to– Chief Financial Officer (CFO).</p>	<p>Audit client feedback Internal post-audit review</p>
<p>3. DENTSPLY INTERNATIONAL: Industry: Medical Instruments & Supplies Number of employees:9.400 Annual Revenues: US \$ 2.2 Billion Auditors in IA Function: 5 Number of Years IA Function has been place: 15 IA Director/CAE reports to– Chief Risk Officer (CRO) and Chair of Audit & Finance Committee.</p>	<p>The performance of audits according to the annual plan The issuance of audit reports within 10 days from the last day of fieldwork Minimal audit director/manager review notes Minimal audit plan risk assessment changes Value-added recommendations written into the audit report</p>

Company's information	Metrics used for measuring of the internal audit performance
<p>4. DEUTSCHE BANK: Industry: Financial services Number of employees: 77.053 Annual Revenues: US \$ 40 Billion Auditors in IA Function: 400 Number of Years IA Function has been place: 50 IA Director/CAE reports to–Management board/Group CFO.</p>	<p>Risk-based assessment with priority ranking given to the audit plan. Balanced scorecard approach aligned to Deutsche Bank's strategic objectives. The four performance indicator categories are people, processes, financials and service. Report to management board and audit committee with regard to audit plan progress and key control deficiencies.</p>
<p>5. PHILIPS: Industry: Consumer electronics Number of employees: 116.000 Annual Revenues: € 23Billion Auditors in IA Function: 75 Number of Years IA Function has been place: 70 IA Director/CAE reports to– Chief Executive Officer (CEO) & President.</p>	<p>The compliance with the audit plan that contains a number of issues The measuring of audit scope around financial reviews, business audits and strategic risk audits and the connection to an assessment of overall risks in Philips The measuring of performance on a continuous basis – reporting to the company's supervisory board audit committee on its progress.</p>
<p>6. SAP: Industry: Computer Software Number of employees: 47.578 Annual Revenues: € 10.7 Billion Auditors in IA Function: 34 Number of Years IA Function has been place: 14 IA Director/CAE reports to– Chief Executive Officer (CEO).</p>	<p>Analysis of audit cost including costs per engagement Display audit results from geographical regions Audit survey results Developing conceptual approaches such as continuous auditing.</p>
<p>7. SHELL: Industry: Energy Number of employees: 101.000 Annual Revenues: US \$ 278 Billion Auditors in IA Function: 250</p>	<p>The audit scope The progress in action implementation of audit recommendation.</p>

Company's information	Metrics used for measuring of the internal audit performance
<p>Number of Years IA Function has been place: 50</p> <p>IA Director/CAE reports to– Chair of Audit Committee.</p>	<p>Evaluation of board's satisfaction with the internal audit team work and findings</p>
<p>8. SPB:</p> <p>Industry: Financial Services</p> <p>Number of employees: 822</p> <p>Annual Revenues: €117.7Billion</p> <p>Auditors in IA Function: 3</p> <p>Number of Years IA Function has been place: 2</p> <p>IA Director/CAE reports to– Chief Executive Officer.</p>	<p>Measuring the satisfaction of auditee after each audit engagement</p> <p>Examination of financial benefits that company achieves through the implementation of audit recommendation</p> <p>A global analysis of what audit brought to the organization in terms of cost reduction and risk management improvement</p>
<p>9. TALECRIS BIOTHERAPEUTICS:</p> <p>Industry: Pharmaceuticals</p> <p>Number of employees: 4.800</p> <p>Annual Revenues: US \$ 1.5 Billion</p> <p>Auditors in IA Function: 3</p> <p>Number of Years IA Function has been place: 3</p> <p>IA Director/CAE reports to– Chair of Audit Committee dotted line report to CFO.</p>	<p>Traditional methods like making sure that internal audit is on target with budgets, productivity and quality</p> <p>The evaluation of accomplishing of audit plan from an investigation standpoint and if they are resolving issues as they emerge</p> <p>The acceptance of internal audit recommendations by management</p> <p>The evaluating of organizational tone of accepting internal controls.</p>

Source: synthesis of Cristina Bota-Avram et al (2011)

From the above metrics used in nine big companies, some common methods are seen in practice such as:

- Using of Balanced Scorecard instrument
- Using qualitative methods by realizing some satisfaction studies for the clients of internal audit, one main objective being the identifying of the potential causes for the unhappiness of the client;
- Implementation of some assurance quality programs and the accountability to realize annual assessments of internal audit quality.

- Other instruments used for the measuring of the internal audit's effectiveness are: informal reports for the management, different monitoring systems of a necessary time for fulfilling the audit missions and the quality of internal audit reports.

In the context that the technology provides a great added value for a lot of activities including internal auditing, it can be observed a strong preoccupation for internal audit directors with regard to effectiveness and performance of internal auditing. Thanks to technology, now, internal auditors have the possibility to assess the entirety of their transactions, being able to develop data analysis more accurate and complete. As the director of internal audit from Shell company remarks: "Internal auditors have strengthened the assurance they provide" (Protivi Knowledgeleader, 2010). On the other side, due to this great advantage represented by technology, the expectances from internal auditors are now more than ever, and from here arises the intense preoccupation for internal auditors to measure their effectiveness and to prove the value added provided to their companies.

(2) From the researcher's perspectives

In literature review of Aaron Cohen & Gabriel Sayag (2010), there are two main approaches to examine the internal audit effectiveness. According to the first approach, the effectiveness of the internal audit is determined by the fit between the audit and some set of universal standards extrapolated from the characteristics of IA (White, 1976). This approach has been presented by Sawyer (1988) who developed five standards for internal auditing: interdependence, professional proficiency, the scope of work, the performance of the audit and management of internal audit department. This approach was also followed by Anderson (1983) and Glazer and Jaenike (1980).

According to the second approach, followed by Ransan (1955) arguments, Albrecht et al. (1988), the effectiveness of internal auditing is not a computable reality, but is defined by the subjective evaluations assigned to this function by management. In other words, the success of internal audits can only be measured against the expectations of the relevant stakeholders (Albrecht et al. 1988). This approach requires the development of systematic and comprehensive scales for measuring the effectiveness of IA (Schneider 1984; Dittenhofer 2001). One of the early efforts in this regard was that of Hoag (1981), who designed a questionnaire to collect managers' feedback for each internal audit activity in an organization. The questionnaire consists of four issues: planning and preparation; the quality of the audit report; the timing of the audit; and quality of communication between the relevant actors. Based on the manager's response, the average score is calculated for the effectiveness of a specific audit task.

Albrecht et al. (1988), in a study funded by the IIA, identified 15 criteria used by 13 large private organizations to assess the effectiveness of internal audits. The authors conclude that effectiveness is determined mainly by the fit of audit work and the objectives set by the managers, qualifications of the internal auditor, management support for internal auditors and some characteristics of internal audit department.

Using the second approach, Aaron Cohen & Gabriel Sayag (2010) developed their own scales and found that three main groups of factors explain 50% of the variances: (i) Auditing quality; (ii) Auditee's evaluations and (iii) Added contribution of IA. The authors used 84 internal auditing effectiveness items advanced by Ziegenfuss (2000) as a starting point, and then reduced the number of items and adjusted them to the Israeli auditing environment, finalized with 37 items. The appendix with 37 items of Internal Auditing Effectiveness Scale is an useful tool for practitioners and a good reference for researchers.

Also taking the second approach, Kwadwo Obeng (2016) measures the effectiveness of internal auditing across stakeholders' expectations: if independent auditors can take advantage of the IA's work or not; if the internal auditor can achieve the objectives set by the management or not and if the recommendations of the internal auditor are related to the decision of the management board or not. In addition, the author examines the IA effectiveness through some of other statements, including: If the internal auditor may detect the risks associated with the financial statements in the auditee or not and if the internal auditors are assigned to this task or not. With the above questions, the author measured in binary scale: yes and no. Although it has developed a comprehensive scale of effectiveness, in this measurement method, on the detection of risk, the author only mentioned the risks associated with the financial statements, but not yet addressing risks in the course of operation or other business operations.

Arena & Azzone (2009) view internal audits as a function of creating value for the organization, taking into account the recent changes of the internal auditing and its central role in corporate governance. The data used for this study were collected through a questionnaire, which was sent to 364 Italian companies, and a response rate of 47% was obtained. On the basis of data from 153 Italian companies, Arena & Azzone (2009) survey emphasizes that the effectiveness of internal auditing is influenced by factors like:

- the characteristics of the internal audit team,
- the audit processes and activities, and
- the organizational links.

It was observed an increasing of internal audit effectiveness, particularly, when:

- the ratio between the number of internal auditors and employees grows,
- the Chief Audit Executive is affiliated to the Institute of Internal Auditors,
- the company adopts control risk self-assessment techniques, and
- the audit committee is involved in the activities of the internal auditors.

3. Discussion and conclusion

The new definition of Internal Auditing issued by the IIA in 2004 required the internal auditors to focus on consulting activity and the risk management function in order to add value to the organization rather than traditional functions of compliance audit. This shift has

required internal auditors to have new capabilities to fulfill the extended areas and required managers to have new measurement methods to evaluate the effectiveness of internal audit. However, the studies on methods of measuring the effectiveness of internal auditing have not been abundant.

The effectiveness and efficiency of IA is the degree (including quality) to which IA achieves established objectives. The objectives of the organization have tended to be balanced among the stakeholder's expectations, both internal and external stakeholders. Therefore, using a Balanced scorecard to set objectives and metrics to measure the effectiveness of internal auditing is becoming a trend in the enterprises around the world.

Internal audit practices for evaluating the performance used by leading international companies are various among companies, ranging from simple to complex. This is quite reasonable due to the perception of managers about the importance of IA in those organizations is not the same and the objectives set by organizations are quite different. This implies that the learning and application of a set of metrics to assess the effectiveness of internal auditing is a voluntary and subjective decision from the management rather than compulsory obliged compliance, so the professional associations should provide enterprises with more supportive guidances, and regulators should not issue too detailed obligations for them.

The researches on internal auditing in general and the effectiveness of internal auditing in particular are relatively scanty, in comparison with those on the external audit. In addition, the previous studies were mainly carried out in the developed countries. This also raises the need to study the performance of IA in the developing countries, the perception of auditors and managers about IA's new functions as well as its contribution to the organization's development.

The paper presents an overview on the effectiveness of IA and the methods of measuring the effectiveness of IA. However, as mentioned above, the reviewed studies are mainly conducted in the developed countries and the data are collected from very big international companies. The results of the paper may not completely suitable to apply to the developing countries. This also implies a call for more new researches in this area to be conducted in the context of the developing countries.

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PART IV: FINANCE



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Impact of Dividend Policy on Corporate Value: Experiment in Vietnam

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Abstract

The paper examines the impact of dividend policy on corporate value. Data collection is the result of listed companies on the Vietnamese stock market in the period of 2006 - 2017 with 2,278 observations. Using the General Least Square (GLS) approach, the authors have identified three factors that have a positive and significant impact on corporate value: dividend payout, profitability, and corporate sizes; and one factor which has a negative impact on corporate value is the degree of financial leverage. The study found that dividend policy has a significant impact on the corporate value of companies that implement a higher dividend payout policy. Conversely, firms that do not pay dividends or pay low dividends do not experience a significant impact of dividend policy on corporate value. The results of the study will be meaningful for businesses on dividend policy implementation.

Keywords: *Corporate value, Dividend policy, Tobin's Q, GLS model, Vietnam*

JEL codes: *1536906570*

1. Introduction

Many studies have been conducted worldwide to determine the relationship between dividend policy and corporate value, among which the most notable research is conducted by Miller & Modigliani (1961). According to their theory, in terms of an efficient market, there is no relationship between the dividend policy and the market value of businesses. However, this theory shows the existing relationship between investment policy and market value, whereby dividend policies are not important because they do not affect the value of

the company or the wealth of the owners. There has been a lot of debates and in-depth researches being conducted in order to test this theory. While some researchers advocated this theory (Black & Scholes, 1974 and Miller & Rock, 1985), some other studies objected (Litzenberger & Ramaswamy, 1979 and Dyl & Weigand, 1998). These conflicting views have led to ambiguity and required explicit research based on the results of empirical research.

The relationship between dividend policy and other policies, such as investment and funding policies, is overlapping and complex. The making of dividend policy usually depends on the preferences of the manager, despite the fact that Miller & Modigliani (1961) pointed out that financial management should follow the investment policy that maximizes future income. This study provides a more explicit assessment of the dividend policy of listed firms, and on the other hand, assessing its impact on the corporate market value. This study aims to answer the question: *what is the impact of dividend policy on the corporate value in Vietnam?* What are the appropriate theories on dividend policy and corporate value for the Vietnamese stock market? Whether dividend policy with high dividend payout ratio or low dividend payout has a strong impact on corporate value?

2. Literature Review/ Theoretical Framework and Methods

2.1. Some theories related to dividend policy and corporate value

Theory of Dividend Policy (Miller & Modigliani, 1961): the business value is not affected by dividend policy but depends on the investment decisions. This conclusion of Miller & Modigliani (M&M) is tied to the assumptions of an efficient and perfect capital market. M&M also relies on the effect of customer behavior to support their conclusions. Accordingly, businesses that change their dividend policy may lose some shareholders over other businesses with more attractive dividend payouts. Thus, stock prices fall temporarily. However, some other investors who prefer the new dividend policy would assume that the shares of the business are underpriced and buy more shares.

Tax Influence Theory: Most economists believe that in a tax-free environment, investors are unlikely to be interested in receiving dividends or capital gains, but in a tax environment, dividend payouts can change the value of the company. In practice, dividend income is often taxed higher than capital gains. Additionally, the tax levy on capital gains must be paid only when the investor actually sells the shares. Therefore, companies are encouraged to retain more profits for reinvestment and pay a lower dividend and investors still prefer capital gains rather than dividends. Thus, Miller & Scholes (1982) and Poterba & Summers (1984) argue that investors prefer a small dividend payout, which lowers the cost of equity, increases the value of the stock and maximize business value.

Risk-averse Theory: The risk-averse theory assumes that risk-averse investors tend to choose dividend income rather than receiving capital gains from selling stocks. The dividend is a regular income and considered to be less risky than potential earnings from future capital gains. In support of this theory, Gordon (1963) puts forward a controversial argument with M&M theory that a dividend payout today is worth more than one unit of

retained earnings to reinvest in new projects. As the success rate of the new project in the future is uncertain, dividends in the future may be larger but also riskier because of uncertainty and the discount rate used to calculate stock value could go up. Low dividend increases uncertainty for shareholders, so shareholders will discount future earnings at a higher rate, lowering the value of the company and vice versa.

Customer Effect Theory: Black & Scholes (1974) divided investors into three groups: Group one is the preferred dividend lovers; The second group are those who are indifferent with dividends and may be there for the purpose of acquiring the company; Group three who are not interested in dividend payments, such as individual investors subject to high-income tax. According to Black & Scholes (1974), customer effects explain the impact of taxation and transaction costs over investor preference on stocks, thereby influencing corporate dividend policy. However, the very existence of transaction costs and tax differences is not enough to become a general theory that explains the determination of dividend policy.

Signaling Theory: Ross (1977) was the first to explore the theory of signaling based on a fundamental theory by Miller & Modigliani (1961). The theory states that all company announcements of paying more dividends are seen as a signal that the company has more prospects in the future. A company offering good investment opportunities seems to want to deliver that message to investors so that it can make a profit.

Agency Theory: is further developed in the study of M. C Jensen & Meckling (1976), and Michael C Jensen (1986). This theory is derived from the conflict of interest between the Board of Directors and the shareholders. In the information asymmetry environment, this contradiction of interest will arise in agency costs. The Board of Directors may generate an incentive to invest business excessive cash flow in activities that may diminish the value of the company. The study by Rozeff (1982) suggested that dividend policy could be a tool to reduce agency costs and is the most practical measure. The more dividends paid, the less free cash flow remains under the decision of the Board of Directors. Investors are concerned about this issue, so they will react positively to dividend increases and vice versa.

Pecking Order Theory: developed by researchers Myers & Majluf, (1984). This theory explains the company's funding decisions based on asymmetric information. On the basis of asymmetric information, this theory proposed a prioritized financing order by firstly using retained earnings for reinvestment into the companies, followed by debt issuance and lastly stocks issuance if necessarily. This theory helps explain why companies with high profitability tend to have lower borrowing ratios than others because they have more internal capital to finance their business activities, whereas low-profit firms will issue debts because they do not have enough internal capital for their investment projects. Debt is topped in the ranking order of external funding.

Free Cash Flow Theory (Michael C. Jensen, 1986) deals with the free cash flow hypothesis and argues that dividend policy is used to resolve the conflict between the Board of Directors and the shareholders. This theory is considered to be a combination of signaling theory and agency theory. Accordingly, the Board of Directors must invest in projects with

positive net present value (NPV) to ensure the benefits of shareholders. The rest of the retained earnings if paid in dividends will reduce the possibility for the business to invest in non-profit projects. The dividend payment is considered a good sign of future business prospects (G. R. Jensen, Solberg & Zorn, 1992).

2.2. Some definitions

Dividend policy: Dividend policy is a policy that determines how the company's profitability is distributed. Profits will be retained for reinvestment of the company or paid to shareholders. Retained earnings provide investors a source of potential future profit growth, while dividends provide them with current income. Dividend policy, also known as distribution policy, is one of three important financial decisions in an enterprise, and it is closely related to the two remaining fiscal policies, which are funding and investment policies. A Dividend Per Share (DPS) is an indicator that reflects the actual earnings per share of a business. Dividend payout ratio is calculated as total dividend payment divided by the total number of common shares outstanding.

Measurement of corporate value: If the business is an investment property, the value of the business depends on the income that the investors generate. Therefore, the corporate value is the total present value of all income that is likely to be generated in all business activities. In other words, the corporate value is the existing benefits and the potential benefits a business can create and is expressed in the form of values that we can calculate and determine through the appropriate method and pricing model. Enterprise valuation has many different calculating approaches. In general, these methods focus primarily on the following two perspectives:

Performance-based viewpoint: determining the value of an enterprise on the basis of the report on business results. This is a method of determining the value of an enterprise from the capital movement with the expectation of increasing a firm's value. According to the study by La Rocca (2010), with a sample of 36 studies from 1988 to 2006 selected for the survey, about 33% of the studies used ROA, ROE values and 67% of the study used Tobin's Q and other indicators such as EPS, EVA, P/E, etc. representing corporate value. The Tobin's Q, according to the study by Chung & Pruitt (1994) and Lin (2010) is defined as:

$$\text{Tobin's } Q = \frac{\text{Total market value of equity} + \text{Net debt}}{\text{Total book value of firm assets}} \quad (1)$$

The market-based view: determining the value of an enterprise based on the share price in the market. La Porta, Lopez-de-Silanes, Shleifer, & Vishny (2000), Ball, Kothari, & Robin (2000), Morck, Shleifer, & Vishny (1988) have determined that the impact of business information on stock prices is less in countries where the law does not protect the rights of investors. Since stock prices often reflect the expectations of investors for the company, its market value can significantly affect the true value of a company as long as the company can provide enough relevant information. The smaller standard deviation of the stock price is, the lower the investment risk. The volatility of stock prices, however, has a significant

impact on investment decisions, thus studying the market value of the stock is a measuring method of the company's value.

2.3. Research overview

Dividend policy: Dividend policy (Dividend payout ratio) is an important factor affecting business value. Theoretical and empirical studies by Murekefu & Ouma (2012), Gul et al. (2012), Wang et al. (2013), Hu & Chen (2012), Topal (2014), Nwamaka & Ezeabasili (2017), Budagaga (2017) show that dividend policy is positively correlated with corporate value. However, according to the study by Amidu (2007), there is no statistically significant correlation between the Tobin's Q coefficient and dividend payments. The proposed research hypothesis is as follows:

H1: Dividend payout ratio has a positive and statistically significant impact on a firm's value

Profitability of a business: A highly profitable business is often traded at a better price (Allayannis & Weston, 2001). Moreover, businesses with high profit will attract investment. The study by Mohamad & Saad (2010) for 172 companies listed in the Malaysian stock exchange also made similar conclusions. Therefore, ROA is also considered as an important factor affecting the value of enterprises. The proposed research hypothesis is as follows:

H2: Profitability of enterprises has a positive and statistically significant impact on the firm's value

Business size: There is quite a bit of evidence that large firms are more likely to adopt risk management than small firms (Colquitt, Hoyt, & Lee, 1999), (Liebenberg & Hoyt, 2003), (Liow, 2010), (Dogan & Topal, 2014), (Anton, 2016). Studies by Lang & Stulz (1994) and Allayannis & Weston (2001) have shown the opposite relationship between firm's size and firm's value. The magnitude of the impact on corporate value has many different experimental results that can be attributed to the "size" and "complexity" of the enterprise. Meanwhile, the study of Mule, Mukras, & Nzioka (2015) states that size does not affect the firm's value. The proposed research hypothesis is as follows:

H3: The size of the business has a positive and significant impact on the firm's value

Financial leverage: Some studies of capital structure theory such as Durand (1952), the cost of debt is often "cheaper" than the cost of equity. As the result, companies often use more debt to extend the value of the business. In addition, the theory of Modigliani & Miller (1958 and 1963) also shows that debt ratio has a positive relationship with corporate value. Financial leverage, however, will cause financial distress and reduce the value of the business, even leading to bankruptcy. Therefore, when businesses use debt at a high level, both creditors and shareholders will require businesses to have better risk management. The authors Hoyt & Liebenberg (2011) and Anton (2016) agree that there is a positive relationship between debt and corporate value. The proposed research hypothesis is as follows:

H4: Financial leverage has a negative and statistically significant impact on the firm's value

Based on the previous study model, the author uses the following model:

Model 1:

$$Tobin'Q_{it} = \beta_0 + \beta_1(Dyield_{it}) + \beta_2(Dpayout_{it}) + \beta_3(DPSR_{it}) + \beta_4(ROA_{it}) + \beta_5(SIZE_{it}) + \beta_6(DLF_{it}) + \varepsilon_{it}$$

Model 2:

$$PRICE_{it} = \beta_0 + \beta_1(Dyield_{it}) + \beta_2(Dpayout_{it}) + \beta_3(DPSR_{it}) + \beta_4(ROA_{it}) + \beta_5(SIZE_{it}) + \beta_6(DLF_{it}) + \varepsilon_{it}$$

Symbols and methods of the variables are presented in Table 1.

Table 1. Calculations and Expected Signs of Variables

No.	Variables	Types of Variables	Variables Code	Calculating Method	Expected Signs
1	Corporate value	Dependent	Tobins'Q	Tobin's Q = (Total market value of equity + Net debts)/Total book value of assets	
2		Dependent	PRICE	Price = Business stock price at end of year t	
3	Dividend per Share ratio	Independent	DPSR	Total dividend payments/ Total outstanding shares*Stock price	(+)
4	Return on assets	Controlled	ROA	Net Income/Total Assets	(+)
5	Business size	Controlled	SIZE	Ln (Total Revenues)	(+)
6	Degree of financial leverage	Controlled	DLF	Total Debt/Total Assets	(-)

Source: Authors' establishment

The study looked at factors influencing dividend policy collected from listed companies on Ho Chi Minh stock exchange for 12 years from 2006 to 2017 with 2,278 observations and used the regression model based on tabular data.

Regression methods include POOL regression methods, fixed effects model (FEM), random effects model (REM). After choosing the appropriate regression method for the model, the author conducted a model selection test and a defect assessment test of the selected model. In the case where the model assumes the defect is violated, the author will proceed with the general least square (GLS) method.

3. Results and Discussion

In the period of 2006 - 2017, the number of firms paying cash dividends ranged from 57.4% to 82.2%, with an average of 68.3%. Thus, about two thirds of firms pay cash dividends (Table 2).

Table 2. Total Number of Firms Paying Dividends in Cash Yearly

Year	Firms not paying cash dividends	Firms paying cash dividends	Total
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	Numbers	Percentage (%)	Numbers	Percentage (%)	
2006	22	31.4%	48	68.6%	70
2007	18	17.8%	83	82.2%	101
2008	25	20.7%	96	79.3%	121
2009	25	35.2%	46	64.8%	71
2010	33	16.3%	169	83.7%	202
2011	70	30.3%	161	69.7%	231
2012	85	35.6%	154	64.4%	239
2013	82	33.6%	162	66.4%	244
2014	90	36.0%	160	64.0%	250
2015	80	33.1%	162	66.9%	242
2016	84	33.5%	167	66.5%	251
2017	109	42.6%	147	57.4%	256
Total	723	31.7%	1,555	68.3%	2,278

Source: data extracted from financial statements and calculated from Stata 13.0 by authors

Table 3. Descriptive Statistics Results

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
Tobinq	2278	1.129	0.970	0.668	0.1	8.5
Price	2278	17013	11060	18984	670	195700
DPSR	2278	0.121	0.100	0.130	0	1.1
roa	2278	0.068	0.060	0.091	-1.72	0.6
sizedt	2278	13.543	13.480	1.385	8.63	18.32
dlf	2278	0.471	0.490	0.212	0	1.06

Source: data extracted from financial statements and calculated from Stata 13.0 by authors

Statistical data (Table 3) shows that the average Tobin's Q coefficient is 1.129, so that the firm's market price is larger than its book value. The average stock market price was 17,013 Vietnam dong per share, the highest was 195,700 Vietnam dong per share and the lowest was 670 Vietnam dong per share. Average dividend payout ratio was 12.1% compared to par value, the lowest among the surveyed enterprises was 0% and the highest was 110%. Businesses usually pay cash dividends from 1-2 times a year, but in particular there are companies that pay dividends 5 times a year. Return on Assets (ROA) is 6.80% on average; the average logarithm of total revenue (SIZE) is 13.54; firms' degree of financial leverage (DFL) is 47.1% on average.

Figure 1 shows the dividend per share ratio (DPSR) of listed companies on Ho Chi Minh City Stock Exchange during 2006 - 2017. Dividend policy of firms in the period of 2006 – 2010 had a noticeable change, however, in the period from 2011 to 2017, dividend policy was less volatile and tended to decrease slightly.

Figure 1. Dividend Policy of Firms in Period of 2016-2017



Source: Ho Chi Minh City Stock Exchange during 2006 - 2017

The matrix of coefficient correlation between variables is used to analyze and examine the probability of occurrence of multi-collinear phenomena between variables in the model. Based on the data (Table 4), the likelihood of multi-collinearity in the regression model is small, as most of the correlation coefficients between variables are relatively small, none exceeds 0.6.

Table 4. Correlation Coefficient Matrix

	Tobinq	PRICE	DPSR	ROA	SIZE	DLF
Tobinq	1					
PRICE	0.4989*	1				
DPSR	0.3990*	0.4114*	1			
ROA	0.4068*	0.3727*	0.5832*	1		
SIZE	0.1511*	0.2967*	0.1690*	0.1121*	1	
DLF	-0.1709*	-0.1502*	-0.2259*	-0.3800*	0.3233*	1

t statistics in brackets, * p<0.05

Source: data extracted from financial statements and calculated from Stata 13.0 by author

Based on the regression results (Table 5, Table 6) with dependent variables being Tobin's Q and stock price, to consider and select the appropriate model between the three regression methods, the authors used the F and Hausman tests. The F test showed Prob > F = 0.000 < α = 5%, so with the significance level of 5 we rejected H0. That means the data collected indicating that the FEM modeling approach is appropriate and POOL method is inappropriate because of the existence of fixed effects in each enterprise over time. After

selecting the FEM model instead of the POOL method, the authors in turn evaluated the existing table data based on FEM and REM models. From them, the authors will go to the Hausman test to make decision whether to choose the FEM or REM models. Hausman's test results are presented in Table 5 and Table 6, which shows that $\text{Prob} > \chi^2 = 0.0000 < 5\%$, thus there is sufficient basis for rejecting the H_0 hypothesis. Fixed-effects model (FEM) is more appropriate than random-effects model (REM). However, before analyzing in detail the factors affecting the dividend policy, the authors will use the following tests: variance test, autocorrelation, and make necessary corrections to overcome restrictions of the model.

Table 5. The Regression Model Results with Tobin's Q as Dependent Variable

	VIF	POOL	FEM	REM	GLS
DPSR	1.61	0.672***	0.155	0.672***	1.167***
ROA	1.79	0.853***	0.510***	0.853***	1.738***
SIZE	1.24	-0.0327**	-0.112***	-0.0327**	0.0513***
DLF	1.4	0.0293	0.289***	0.0293	-0.200***
_cons		1.429***	2.455***	1.429***	0.267**
N		2278	2278	2278	2278
R-sq		0.4324	0.4542	0.4324	
LM test		Wald $\chi^2(4)$ = 106.58 Prob > χ^2 = 0.0000		Wald $\chi^2(4)$ = 106.58 Prob > χ^2 = 0.0000	Wald $\chi^2(4)$ = 798.91 Prob > χ^2 = 0.0000
F test			F(4,2017) = 14.67 Prob > F = 0.0000		
Hausman test			$\chi^2(4) = 318.56$ Prob > $\chi^2 = 0.0000$		
Wooldridge test			F(1, 252) = 9.143 Prob > F = 0.0028		
Modified Wald test			$\chi^2(257) = 4.2e+06$ Prob > $\chi^2 = 0.0000$		

t statistics in brackets * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: data extracted from financial statements and calculated from Stata 13.0 by authors

Table 6. The Regression Model Results with PRICE as Dependent Variable

	VIF	POOL	FEM	REM	GLS
DPSR	1.63	33550.8***	33550.8***	33550.8***	36261.6***
ROA	1.75	21241.4***	21241.4***	21241.4***	30583.6***
SIZE	1.33	4945.4***	4945.4***	4945.4***	3833.1***
DLF	1.42	-8663.9***	-8663.9***	-8663.9***	-11478.0***
_cons		-51138.4***	-51138.4***	-51138.4***	-35973.3***
N		2278	2278	2278	2278
R-sq		0.4008	0.3253	0.4008	
LM test		Wald chi2(4) = 455.64 Prob > chi2 = 0.0000		Wald chi2(4) = 455.64 Prob > chi2 = 0.0000	Wald chi2(6) = 704.87 Prob > chi2 = 0.0000
F test			F(4,2017) = 75.80 Prob > F = 0.0000		
Hausman test			chi2(6) = 19.90 Prob>chi2 = 0.0029		
Wooldridge test			F(1, 252) = 27.677 Prob > F = 0.0000		
Modified Wald test			chi2 (257) = 1.7e+07 Prob>chi2 = 0.0000		

t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01

Source: data extracted from financial statements and calculated from Stata 13.0 by authors

To test whether the variance was altered, the authors used the Breusch and Pagan test under the assumption H_0 : there is no change in variance and H_1 : there is a change in variance. The test result for the P-value received is $0.0000 < \alpha$ (5%), which implies that H_0 is the change in variance. The Wooldridge test is used to test whether self-correlation exists for regression models. The test result for the value P-value = $0.0000 < \alpha = 0.05$, assuming H_0 is rejected, ie. autocorrelation occurred to overcome the detected defects of the model by the GLS method. The results presented in Table 5, Table 6 are the results that have been corrected for the defects of the model. Basing on Table 5, Table 6 (GLS model), the results show impact of the dividend policy on corporate value.

- The dividend policy has a positive impact on the value of enterprises and is statistically significant at 1%. The results of the study are in line with hypothesis H_1 , which

is in line with the signaling theory and free cash flow theory. The results of this study are consistent with studies by Murekefu & Ouma (2012), Gul et al. (2012), Wang et al. (2013), Hu & Chen (2012), Dogan & Topal (2014), Anton (2016), Nwamaka & Ezeabasi (2017), Budagaga (2017) but not in line with the study of Amidu (2007).

Table 7. Regression Results According to Dividend Payout Ratio

	GLS - Tobin'Q		GLS - PRICE	
	Low dividend payout ratio ($\leq 10\%$)	High dividend payout ratio ($> 10\%$)	Low dividend payout ratio ($\leq 10\%$)	High dividend payout ratio ($> 10\%$)
DPSR	0.271	0.674***	-16509.3	48125.4***
ROA	0.624***	3.709***	31760.5***	38453.0***
SIZE	0.0356***	0.0705***	2880.7***	4841.3***
DLF	0.245***	-0.320***	-9981.4***	-11188.6***
_cons	0.315***	-0.067	-22024.4***	-54237.6***
N	1042	1236	1042	1236

t statistics in brackets * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: data extracted from financial statements and calculated from Stata 13.0 by authors

The research team continued to analyze to answer the question how high dividend payout ratio would affect the firm's value. We divide the research sample into two groups, the first one is the one with low dividend payout ratio (dividend payout ratio $\leq 10\%$, which is the median value of the share payout ratio of enterprises). The second group is the companies with high dividend payout ratio (dividend payout ratio $> 10\%$).

The results of GLS regression are presented in Table 7, which shows that the low non-cash payout ratio does not affect corporate value when measured in Tobin's Q and stock prices. Conversely, high dividend payout ratio has a positive impact on the firm's value and is statistically significant at 1%.

- Return on Assets (ROA): regression results show that ROA is positively correlated and statistically significant to firm's value when measured by Tobin's Q and share price. The results of this study are consistent with the findings of Allayannis & Weston (2001), Mohamad & Saad (2010), Hung, Ha, & Binh (2018).

- Enterprise Size factor (SIZE): is positively correlated and statistically significant to firm's value when measured by Tobin's Q and stock price. The results of this study are in line with the original H₃ hypothesis, which is consistent with the study results of Colquitt et al. (1999), Liebenberg & Hoyt (2003), Dang, Tran, Nguyen (2018), but contrary to the study of Lang & Stulz (1994), Allayannis & Weston (2001), Dogan & Topal (2014), Anton (2016).

- Degree of Financial Leverage factor (DFL): is inversely related to business value and is statistically significant in all models when measuring firm's value using Tobin's Q and stock price. The results of this study are in line with the original H₄ hypothesis, which is consistent with the results of Durand (1952), Modigliani & Miller

(1958), Modigliani & Miller (1963), but not similar to the results of the study Hoyt & Liebenberg (2011), Anton (2016).

4. Conclusions and Policy Implications

The cash dividend payment of listed companies on Ho Chi Minh City Stock Exchange was less volatile and tended to decrease during the study period. Dividend policy is measured by the ratio of cash dividends, which has a positive impact on the value of enterprises and the statistical significance at 1%.

Businesses need to maintain stability and dividend policy with a high dividend payout ratio (over 10% per year) because this is a very important factor affecting the value of the business. Also, there is a positive correlation between profitability and business value. This shows a consensus over the theories set forth above. Thus, enterprises need to improve their profitability by saving money, effectively using existing equipment; at the same time, to expand the size, maintaining the growth rate as they are factors that help increase the corporate value.

Enterprises should expand the form of joint ventures with partners both at home country and abroad to acquire more assets, especially fixed assets with modern technology to operate as well as learn to improve management levels, utilizing assets and markets of partners to enhance corporate value. In addition, businesses need to manage the costs associated with sales and business management as well as manage well receivables in order to improve operational efficiency.

Financial leverage influences the value of the business. This means that with corporates that rely on borrowing, the value of the business will be reduced. As the result, businesses need to be cautious in mobilizing loans, giving priority to owners' equity and stock issuance for business financing.

For investors, results of the study on the impact of dividend policy, profitability, business size, financial leverage on the corporate value of listed companies on Ho Chi Minh City Stock Exchange will show them some practical explanation of those influences. From then, looking at dividend policy, investors will have the ability to predict the profitability of the business in order to make appropriate investment decisions.

This paper stops at the study of internal factors affecting business value. In the future, the research team will continue to expand on the study of external factors such as inflation, growth rate, interest rate, etc., as well as further analysis of internal factors such as business management and ownership structure in order to clarify the impact of dividend policy on corporate value. At the same time, the research will expand on the number of surveyed enterprises, and the duration of the survey in the next study in order to give a more complete and quantitative view of the trend and the impact of the factors on the corporate value.

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Factors Affect Account Receivable Management and Its Impact on Business Performance of Vietnamese Enterprises

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Abstract

This paper analyzes factors that affect account receivables management and its impact on business performance of enterprises in Vietnam through a sample of 326 non-financial companies. The companies are listed on the Hanoi Stock Exchange (HNX) and the Hochiminh Stock Exchange (HOSE) between 2013 and 2017. The research results show that the new variables introduced into the model is the provision for bad debts which positively affects accounts receivables. As such, when the provision for bad debts increases and the profit of the company is reduced, the company shall intensify the implementation of the commercial credit policy, leading to the increase in both receivables as well as revenue and profit. In addition, the research shows that there is an optimal level of revenue for business performance. Specifically, if account receivables accounted for 24.98% of total assets, ROA reached the highest value and receivables accounted for 25.15% of total assets, the ROE also reached the highest value.

Keywords: *Receivables, Payables, Provision, Bad debt, Trade credit.*

JEL codes: G320, M410

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1. Introduction

Good control of receivables to improve operational efficiency and corporate value has always been a great concern of enterprises. Commercial credit granted to customers will be able to accelerate sales, reduce inventory and increase revenue (Emery, 1984). At the

same time, the buyer of commercial credit will have the source of goods for production and business without having to pay immediately. However, it is not always good. The company has more receivables, thus the company will face credit risk, particularly the risk of capital loss when the customer refuses to make payment upon maturity (Cheng and Pike, 2003). Meanwhile, commercial credit is usually covered by short-term bank loans. Moreover, sources that pay for the business from the suppliers will be very expensive if the commercial credit policy of businesses for customers is inefficient. This has also been of interest to researchers of the world such as Petersen and Rajan (1997), Danielson and Scott (2004), Niskanen and Niskanen (2006), Garcia-Teruel and Martinez-Solano (2010). The research context has been only in economically developed countries including the United States (Petersen and Rajan, 1997; Danielson and Scott, 2004), small businesses in Finland (Niskanen and Niskanen, 2006), small firms in (Garcia-Teruel and Martinez-Solano, 2010), etc. There have been a few studies on transitional economies such as China. For instance, Shi et al. (2016) only focuses on customer receivables in one particular industry, which is the manufacturing industry in China. However, there has been no focus study on the impact of customer receivables on the performance of the company.

The purpose of this study is to identify, first, factors that affect the receivables of enterprises in Vietnam and, second, to examine the impact of receivables on the performance of public companies in Vietnam. This study was conducted in Vietnam, including listed companies on HNX and HOSE in the period of 2013-2017. This is the period when Vietnam economy was recovering from the 2007-2008 global financial crisis. Vietnam is known as developing country whose state intervention in the economy is still relatively high. After a period of crisis, the State Bank of Vietnam (SBV) has implemented a tight monetary policy. Moreover, the bad debt rate of commercial banks is so high, the ability of banks to access capital from enterprises is difficult. Therefore, businesses will actively seek other sources of capital and one of them is to use commercial credit from suppliers. In addition, the economic law system of Vietnam has not been highly appreciated for transparency, consistency, lack of uniformity, feasibility and effectiveness. Demirguc-Kunt and Maksimovic (2001) find that businesses use commercial credit more than the use of bank debt in countries with poor legal protection. Moreover, in order to survive and develop, businesses often choose to sell their bearings to boost sales. Therefore, commercial credit should be considered in a transitional country such as Vietnam.

Besides, enterprises need to identify the impact of commercial credit on performance and the optimal amount of accounts receivables to maximize performance of enterprises. In the world, there has only been a research on commercial credit and enterprise values by Martínez-Sola et al. (2012). Thus, in terms of the topic of factors affecting the receivables, there have been quite a few studies, most of which focus on developed countries. In addition, there is one factor that is likely to affect the accounts receivables but has not been tested by any researcher. At the same time, there has been no research that verifies the effects that accounts receivables have on business performance and whether there is an optimal level of

customer acquisition to the business performance of large enterprises. This is the space for research.

2. Literature Review and Methodology

2.1. Factors that affect customer receivables

The first is the number of years of operation or the age of the company. Petersen and Rajan (1997) believe that older businesses will provide more commercial credit to customers as they have better access to bank credit than a start-up company. Because Schwartz (1974) claims that older companies have better credit credibility to pay off bank loans. Longer-established businesses, therefore, provide more commercial credit to customers, meaning that there is a positive relationship between the age of the company and the receivables. This is evidenced by the results of the study investigated by Petersen and Rajan (1997), Niskanen and Niskanen (2006), Bougheas et al. (2009), Khan et al. (2012) and Shi et al. (2016). However, this is not consistent across all studies. Garcia-Teruel and Martinez-Solano (2010) argue that the relationship between the number of years of operation and the receivables is negligible with some countries in the sample. As a result, the number of years of operation does not affect managers who make the decision to provide commercial credit to customers.

The second is the firm size of the company. Petersen and Rajan (1997) argue that large-scale enterprises are more likely to have access to bank credit, thus providing more commercial credit to customers. That means there is a positive relationship between the size of the company and the receivables. This is evidenced by the results of a study investigated by Nadiri (1969), Petersen and Rajan (1997), Ng et al. (1999), Danielson and Scott (2004), Niskanen and Niskanen (2006), Bougheas et al. (2009), Garcia-Teruel and Martinez-Solano (2010), Khan et al. (2012) and Shi et al. (2016).

The third is net cash flow or internal financing generation. Garcia-Teruel and Martinez-Solano (2010) expect companies capable of generating large net cash flows to provide financing to customers through commercial credit. However, the results show that net cash flow affects commercial credit in different countries. Although the effect is positive for Finland, France and Greece, this means that if businesses have large net cash flows, they will provide more commercial credit to customers. Meanwhile, this relationship is a drain in Belgium. In Spain, Sweden and England, no relationship was found. According to Niskanen and Niskanen (2006), the relationship between net cash flow and receivables is not statistically significant.

The fourth is short-term finance. It measures a company's ability to access outside financing. According to the research, Petersen and Rajan (1997) claim that companies with high short-term finances are more likely to offer commercial credit to their clients. Similarly, Niskanen and Niskanen (2006), Garcia-Teruel and Martinez-Solano (2010) also argue that firms that are able to attract capital from large capital markets will provide more commercial credit to their customers. However, when researching for Indian manufacturing companies, Vaidya (2011) find that firms with good credit exposure will reduce commercial credit for customers.

The fifth is financial cost. Financial cost has a negative impact on receivables (Petersen and Rajan, 1997; Garcia-Teruel and Martinez-Solano, 2010). When companies face high financial cost, they will reduce the amount of debt and less incentive to finance customers and reduce commercial credit.

The sixth is revenue growth. Emery (1984) demonstrates that a company with low turnover could grant more commercial credit as a marketing tool to increase sales. Therefore, Petersen and Rajan (1997) suggest that firms that want to achieve higher sales must adopt more commercial credit transactions and point to a positive relationship between revenue growth and the right collection. This is evidenced by the results of a study investigated by Niskanen and Niskanen (2006), Vaidya (2011). However, Garcia-Teruel and Martinez-Solano (2010) find evidence that, in opposition to Petersen and Rajan (1997), unlike American small and medium enterprises, there is a negative relationship between growth revenues and receivables in Europe. This indicates that higher turnover growth rates will reduce the financial supply to customers through commercial credit.

The seventh is turnover. According to Long et al. (1993), commercial credit can also be used for companies to communicate product quality information through commercial credit they provide. The results of Long et al. (1993) show that this variable has a negative relationship with receivables, as companies with low turnover generate higher quality products. This is because the company controls the quality of the product carefully and preferably prolongs the production cycle. Therefore, these companies will provide more commercial credit to their customers so that they can evaluate the quality. In contrast, Garcia-Teruel and Martinez-Solano (2010) argue that the relationship between total assets turnover and receivables is the same.

The eighth is gross profit margin (revenue turnover). Emery (1984) finds that companies will increase revenue by granting more commercial credit in order to increase revenue revenues. The findings of Petersen and Rajan (1997) and Garcia-Teruel and Martinez-Solano (2010) support the theory that commercial credit that is provided to customers when the suppliers are highly profitable. In order to make higher profits, the suppliers should be made to accept lower income or even loss on the terms of the credit with which they are provided.

The ninth is inventory ratio. According to Bougheas et al. (2009), inventory includes finished and semi-finished products. The relationship between inventories and receivables is reversed. This is explained by the fact that companies use commercial credit, which allows buyers to postpone payment to increase sales, thus reducing inventory (Bougheas et al., 2009). In line with Bougheas et al. (2009), Vaidya (2011) shows a negative relationship between inventory and receivables.

The tenth is liquidity. Ng et al. (1999) and Vaidya (2011) demonstrate that liquidity and receivables are related in the same way, ie when liquidity is high, the business will provide additional commercial credit to customers. row. In contrast, Nadiri (1969) and Bougheas et al. (2009) suggest that there is a negative correlation between liquidity and receivables.

Finally, Petersen and Rajan (1997) and Niskanen and Niskanen (2006) argue that the level of receivables is determined not only by the financial situation of the supplier, but also on the needs of the customers. While they also find it difficult to measure demand, as each customer will have different commercial credit needs.

2.2. Impact of customer receivables on performance of enterprises

Lewellen et al. (1980) argue that inadequate market conditions lead to the existence of commercial credit policy. The existence of imperfect market competition can affect the company's commercial credit decisions and facilitate commercial credit policies that affect the performance of the firm.

Research on the impact of receivables on the performance of the business, there are two schools. It is the receivables that have a positive impact on the efficiency of the business, which means that increasing the number of sales days will lead to higher profit margin, thereby improving the efficiency of the business according to studies such as Akinlo (2011), Sharma and Kumar (2011). Meanwhile, most of the other studies suggest that the higher the number of sales days, the lower the profit margin, which makes the business efficiency reduced. The number of days of sales is inversely related to the ability profitability. Studies such as Deloof (2003), Lazaridis and Tryfonidis (2006), Padachi (2006), Garcia-Teruel and Solano (2007), Gill et al. (2010), Mansoori and Muhammad, (2012), Vahid et al. (2012), Gul et al. (2013), Makori and Jagongo (2013), Ukaegbu (2014) prove this. Only one study by Martínez-Sola et al. (2012) shows that there is a non-linear relationship between the receivables and the value of the firm. Accordingly, when account receivables are kept below the optimum receivables, the benefits of commercial credit will prevail, and an increase in receivables will result in a rise in corporate value. Conversely, when the receivable is held higher than the optimal receivable, it will reduce the value of the company.

Therefore, businesses need to balance the benefits and costs of granting commercial credit. The benefits of commercial credit may include the following:

First, the main motive for commercial credit granting to customers is through the granting of commercial credit that will help the company increase sales, thereby bringing higher profits. In addition, the incremental cash flow resulted from the decision to extend credit may be a valuable asset to the company (Schwartz, 1974; Kim and Atkins, 1978).

Second, when granting commercial credit, it can help companies strengthen long-term relationships with customers (Ng et al., 1999, Wilner, 2000). This can be explained by the fact that commercial credit reduces asymmetric information between buyers and sellers, thereby reducing ethical dangers between the company and its customers because it provides customers with the ability to verify the product quality before payment (Smith, 1987; Long et al., 1993; Pike et al., 2005).

Third, commercial credit can also be as part of a firm's price policy to stimulate demand (Pike et al., 2005). Companies can extend credit terms or increase cash discounts, thereby lowering prices to stimulate sales and allowing companies to implement price discrimination policies.

Fourth, commercial credit can be considered an investment strategy in order to find customers. In other words, when commercial credit is provided, it is a signal to customers that suppliers are seeking a mutually beneficial long-term business relationship (Cheng and Pike, 2003).

Fifth, from an investment standpoint, commercial credit can generate interest income for late payments by buyers. It is common in credit terms that the seller can be charged a higher price if the buyer fails to pay in time. Therefore, companies should invest in commercial credit if the net present value of earnings from receivables is greater than the net present value when not using it (Ferris, 1981).

Due to these benefits, we can expect a positive relationship between the receivables and the performance of the business. However, investments in receivables are also costly:

First, granting commercial credit raises financial risks. Businesses (liquidity providers) may face the risk of delinquency, will have to renegotiate in the event of default, and the worst is the increase of overdue debt. It increases the cost of the business in the face of financial hardships. Martínez-Sola et al. (2012) report that, according to the European Payment Index Report (2011), 25% of all bankruptcies were due to customer delays or unpaid purchase invoices. On the other hand, when granting commercial credit to customers, the company must give up the money that can be earned from interest rates if deposited. This approach implies the opportunity cost of granting commercial credit (Nadiri, 1969). In practice, the commercial credit granted will depend on the level of credibility of the supplier and access to capital markets (Schwartz, 1974; Emery, 1984, Smith, 1987; Mian and Smith, 1992; Petersen and Rajan, 1997).

Second, the commercial credit expansion causes the seller to bear the cost of credit management. The seller must spend time and effort to assess credit risk and bear some costs to collect money from the buyer. According to Ng et al. (1999), transaction costs related to trade credit monitoring and information arise when there is information disparity between buyers and sellers, reputation is difficult to verify, and the highly professional investment is too complex.

Thus, it can be argued that the relationship between commercial credit and corporate value will become negative at high levels of account receivables as commercial credit costs will surpass the benefits of increasing the required amounts. (Martínez-Sola et al., 2012). Is there a non-linear relationship between the receivables and the performance of the business? Therefore, it is necessary to test two different effects of commercial credit on the performance of the business and determine the optimal level of receivables to maximize the efficiency of the business. No research has been done on this issue. This is the space for research.

3. Methodology

3.1. Sample and data

Data from 326 non-financial companies listed on the HNX and HOSE, which were provided by the General Statistics Office of Vietnam for the period from 2013 to 2017 with approximately 1,630 observations. The most commonly used industry benchmark is ICB (Industry Classification Benchmark). According to statistics describing the ratio of customer receivables and business performance presented in Table 1.

Table 1. Statistics describe the rate of customer receivables and business performance

Variable	Companies	Observations	REC	ROA	ROE
Infrastructure services	27	135	0.1155	0.0871	0.1559
Technology	19	95	0.3129	0.0413	0.0851
Industry	113	565	0.2293	0.0568	0.1199
Consumer Service	39	195	0.1286	0.0586	0.0964
Consumer goods	56	280	0.1418	0.067	0.1297
Basic materials	58	290	0.1656	0.0586	0.1222
Medical	14	70	0.2391	0.0921	0.1524
All industries	326	1,630	0.1868	0.0622	0.1215

Source: Authors's statistics.

The proportion of customer receivables on the total assets of Vietnamese enterprises accounts for a small proportion of 18.68%. However, when compare with Garcia-Teruel and Martinez-Solano (2010), we found the ratio of receivables to total assets of Vietnam lower than that of other countries, such as 39.28% in Spain, 36.55% in Greece, 35.55% in France, and 19.18% in Finland. In total, the commercial credit was the largest in the sector (31.29%), followed by the health sector (23.91%), industry (22.93%), and the smallest one was infrastructure services (11.55%).

3.2. Methodology

To answer the research question, 3 models are regression testing, as follows.

(1) *To test the influence of factors on receivables* is based on the study by Garcia-Teruel and Martinez-Solano (2010) and Vaidya (2011), as well as the addition of bad debt reserve ratio to the model with a view to testing the factors affecting the account, we have the first model:

Model 1:

$$REC_{it} = \beta_0 + \beta_1 PROVI_{it} + \beta_2 GROWTH_{it} + \beta_3 SIZE_{it} + \beta_4 LAGE_{it} + \beta_5 STLEV_{it} + \beta_6 FCOST_{it} + \beta_7 CFLOW_{it} + \beta_8 TURN_{it} + \beta_9 GPROF_{it} + \beta_{10} INVEN_{it} + \beta_{11} LIQ_{it} + \epsilon_{it} \quad (1)$$

In Vietnam, provision for doubtful debts is made in accordance with Circular 228/2009/TT-BTC dated from December 7th, 2009 by the Ministry of Finance, guiding the regime of deduction and use of the provision for impairment, inventory prices, losses of financial investments, bad debts and warranty for products, as well as goods and construction works in the enterprise. Provisions are considered as expenses of the enterprise, so the enterprise will be reduced part of the amount of corporate income tax payable. However, for many listed joint stock companies, provisioning will reduce the profitability of the business, affecting the market value of the stock. As a result, they may reduce their provisioning, accept high taxes to cover losses or potential losses so as not to affect the market value of the stock.

(2) The second model is used to test whether there is a non-linear relationship (inverted-U) between receivables and business performance to determine the optimum level of accounts receivables.

To answer the question of the impact of receivables on the performance of Vietnamese enterprises, the model of Martínez-Sola et al. (2012) to establish with dependent variable ROA and ROE representing business performance, as follows:

$$V_{it} = \beta_0 + \beta_1 REC_{it} + \beta_2 REC_{it}^2 + \beta_3 GROWTH_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad (2)$$

Dependent variable is V - represents the performance of the company, measured by two variables ROA and ROE. The ROA and ROE have been used in a number of studies to assess performance, such as Shin and Soenen (1998), Wang (2002), Forghani et al. (2013), Bagh et al. (2016).

(3) To verify the consistency of the nonlinear relationship between receivables and business performance, which provides evidence to support the hypothesis that the performance of Vietnamese firms would decrease if the receivables move out of the optimal value at which the performance of Vietnamese enterprises is the highest, thereby assuring effective commercial credit policies to maximize business efficiency. According to Table 4 (Appendix 3), based on research by Martínez-Sola et al. (2012), we have the following research model:

$$V_{it} = \beta_0 + \beta_1 DEVIATION_{it} + \beta_2 GROWTH_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \varepsilon_{it} \quad (3)$$

3. Results and Discussion

The FGLS model is used. In general, the results obtained by the three estimation methods do not differ much. However, in order to increase the robustness of the model of factors affecting the receivables, we used the estimation method with the GMM model. Through the GMM model, we have the results as shown in Table 5.

Table 5. Factors that affect receivables

Dependent variable	REC			
	FEM	REM	FGLS	GMM
PROVI	0.1859***	0.2019***	0.3313***	1.1562**
GROWTH	-0.0071**	-0.00669**	-0.0063***	0.0538
SIZE	-0.0135**	-0.0157***	-0.0109***	-0.0134**
LAGE	0.0163	0.0152*	-0.0040	-0.0030
STLEV	0.0036	0.0052	0.0104***	0.0420
FCOST	-0.0493**	-0.0527***	-0.0252**	-0.0462
CFLOW	-0.0187	-0.0299**	-0.0250***	-0.0943**
TURN	0.0283***	0.02934***	0.0325***	0.0233***
GPROF	-0.0338	-0.0368*	-0.0215*	-0.0039
INVEN	-0.0078*	-0.0092**	-0.0127***	-0.0333*
LIQ	-0.0058***	-0.0064***	-0.0046***	-0.0045

(*), (**) and (***) correspond to the significance level of 10%, 5% và 1%

Source: Authors's test results

First, the new factor is the provision for doubtful receivables provision (PROVI) which has the strongest impact and is in line with customer receivables. As such, provision for doubtful receivables increases, resulting in increased receivables. Cause is explained by the increase in bad receivables compensation, which makes the cost of enterprises increase, profit decreased. Therefore, in order not to reduce profitability, companies must increase revenue by accelerating sales by offering more commercial credit to customers.

Second, the size (SIZE) is considered to be a determinant of receivables and has a negative effect on receivables. Smaller companies will provide more commercial credit to their customers. This is a special thing in the market of a transition economy country like Vietnam. Because our results are in direct contrast to the previous results, the relationship between firm size and receivables is similar to Nadiri (1969), Petersen and Rajan (1997), Niskanen and Niskanen (2006), Bougheas et al. (2009), Garcia-Teruel and Martinez-Solano (2010), Khan et al. (2012), Shi et al. (2016). This can be explained that, in the Vietnamese market, small-scale companies do not have a firm foothold in the market so it is harder to find customers than large companies.

Third, the net cash flow (CFLOW) has a negative relationship with the receivables. This means that if the net cash flow increases, it will reduce the level of commercial credit for customers. This is consistent with the results of Garcia-Teruel and Martinez-Solano (2010) when studying in the Belgian market. But its results are in contrast to other countries like Finland, France and Greece.

Fourth, the total assets turnover (TURN) has the same effect on receivables. This result supports the views of Garcia-Teruel and Martinez-Solano (2010), that is, in case of an increase in asset turnover, which demonstrates the efficiency of asset utilization of enterprises is good, business results should be favorable. Businesses create conditions for customers to purchase deferred payment, resulting in increased receivables. However, this finding is in contrast to Long et al. (1993) who claim that receivables are a tool for quality assurance with clients.

Fifth, inventory turnover (INVEN) is inversely related to receivables. This finding is consistent with Bougheas et al. (2009) and Vaidya (2011). We find that, in the Vietnamese market, when inventories are still abundant, in order to release inventories, enterprises implement commercial credit policies in order to encourage customers to buy goods, speed up the sale of goods, and increase customer acquisition.

The remaining factors in the GMM model are GROWTH, LAGE, STLEV, FCOST, revenue (GPROF), liquidity (LIQ), all of which are not statistically significant.

The results on the impact of customer receivables on business performance are presented in Table 6.

Table 6. The regression results of the non-linear relationship between receivables and performance

Dependent variable	ROA	ROE
REC	0.4295 **	0.9869 *
REC ²	-0.8597 **	-1.9625 *
GROWTH	0.0223 ***	0.0728 ***
SIZE	0.0082 *	-0.0031
LEV	-0.0254 ***	-0.0141
Observations	1304	1304
AR (2)	0.256	0.761
Hansen test	0.149	0.766

(*), (**) and (***) correspond to the significance level of 10%, 5% và 1%

Measurement method: GMM

Source: Authors' test results

The regression results show that the expectation of a non-linear relationship between receivables and business performance is perfectly reasonable. The regression coefficient of the REC and REC² variables are statistically significant. For the dependent variable ROA, the mean of both REC and REC² is 5% and the dependent variable is ROE Mean levels of both REC and REC² are 10%.

In the two cases where the dependent variable is ROA and ROE, the coefficients of the positive and negative REC² are as expected, indicating a non-linear relationship between receivables and business performance. It is an inverted-U, which implies that an increase in receivables will increase the efficiency of the business operation, to a certain level of receivables, the increased receivables will reduce the efficiency of business operation. The ratio of receivables to total assets at the reverse business performance point is the ratio of receivables to total assets, which is maximized. For the case where the dependent variable represents the performance of the enterprise as ROA, the ratio of receivables to total assets is determined by the two coefficients of the REC and REC² variables as follows: $(-\beta_1/2\beta_2) \approx 0.2498$. This result shows that the receivables account for 24.98% of total assets, the return on total assets is the highest. Similarly, for the case where the dependent variable represents

the performance of the business as ROE, the ratio of receivables to total assets is determined by the two coefficients of the REC and REC² variables as follows: $(-\beta_1/2\beta_2) \approx 0.2515$. This result shows that the receivables account for 25.15% of total assets, the return on equity is the highest.

Regarding control variables, in the case of dependent variable ROA, the GROWTH variable has a positive effect on the ROA at a significance level of 1%. This means that the higher the revenue growth rate, the greater the profitability of the asset. This finding is consistent with Geroski et al. (1997), Claver et al. (2002), Samiloglu and Demirgunes (2008) and Yazdanfar (2013). For size (SIZE), as well as Hall and Weiss (1967), Fiegenbaum and Karnani (1991), Serrasqueiro and Nunes (2008), Lee (2009), Yazdanfar (2013), Doğan (2013), their study also show a positive impact on ROA at a 10% significance level. Thus, the larger the scale, the higher the profitability of assets. However, the results are in contrast to Shepherd (1972), Jensen and Murphy (1990), Pi and Timme (1993), Goddard et al. (2005). Finally, leverage (LEV) has a negative impact on ROA at a 1% significance level. This means that the higher the debt-equity ratio, the lower the return on assets (Goddard et al., 2005; Doğan, 2013). For a dependent variable, ROE, the empirical results show that GROWTH changes in the same direction as ROE and is significant at 1%. The greater the increase in revenue growth becomes, the greater the return on equity is. The scale variables (SIZE) and leverage (LEV) are not statistically significant.

To test the robustness of the research results and how the performance of the business will change if the receivables ratio on the asset deviates from the optimal value, we removed the two variables REC and REC² in the second model and replaced with the DEVIATION variable, followed by the DEVIATION regression following the second model. The results of which are presented in Table 7.

Table 7. The regression results that verify the change in receivables to efficiency

Dependent variable	ROA		ROE	
DEVIATION	-0.1296998	*	-0.3664975	***
GROWTH	0.0338579		0.0723001	
SIZE	-0.014179	**	-0.0255614	**
LEV	0.0061579		0.0127692	**
Observations	1304		1304	
AR (2)	0.370		0.669	
Hansen test	0.977		0.972	

(*), (**) and (***) correspond to the significance level of 10%, 5% and 1%

Measurement method: GMM.

Source: Authors' test results

Regression results show that the expectation of business performance will decrease as the ratio of receivables on assets deviates from the optimal value is perfectly reasonable. Specifically, the coefficient of the DEVIATION variable is negative in both cases where the dependent variable is ROA and ROE, where the DEVIATION variable has a significance

level of 10% for the dependent variable model, ROA, 1% for the dependent variable model is ROE. As a result, the test results show that when the receivables ratio is out of the optimal value will reduce the efficiency of business operations.

For control variables in the model, the coefficient of variation (SIZE) has a negative impact on the firm's performance and is significant at 5% in both cases where the dependent variable is ROA and ROE. Leverage has a positive effect on ROE at a significance level of 5% and does not make sense for a dependent variable model of ROA. Finally, revenue growth (GROWTH) does not make sense in either case.

4. Conclusions

For businesses, commercial credit policy is important. It can help businesses expand their market share and accelerate the sale of goods and increase customer receivables.

We reached the conclusion that when the provision for bad debts increases, which means that the profit is reduced, to increase sales, businesses must encourage customers to buy goods through the granting of customer commercial credit. Moreover, the special feature in the Vietnamese market is that the smaller the size of the company is, the more commercial credit it grants. This is in contrast to previous studies by Nadiri (1969), Petersen and Rajan (1997), Niskanen and Niskanen (2006), Bougheas et al. (2009), Garcia-Teruel and Martinez-Solano (2010), Khan et al. (2012), Shi et al. (2016). Because in the Vietnamese market, small companies do not have a strong foothold and reputation, if they want to compete with big companies, they must use commercial credit policy to attract customers. In addition, the higher the net cash flow in the business, the more businesses do not have the need to increase commercial credit for customers. In addition, the use of commercial credit as a means of transmitting information about product quality. Long et al. (1993) is not correct in the case of Vietnam. In Vietnam, the larger the turnover of assets is, the more favorable conditions for customers to buy deferred payment are. Finally, in response to rising inventories, we observe that businesses have expanded their commercial credit policies to reduce inventory and increase receivables.

Through this research, we have identified the relationship between customer receivables and business performance. In particular, there is an optimal level of exposure to the performance of the business, or the profitability of the asset and the return on equity are greatest. This contributes to the assumption that Lewellen et al. (1980), in the imperfect competition market, would incur expenses related to credit assessments and contingency expenses, thus creating a premise for commercial credit policy affecting the efficiency of business operations. Thus, granting commercial credit can bring benefits such as increased revenue, expanded market share, but at the same time cause losses to businesses such as increased financial costs and opportunity costs. customers do not pay or pay late. If these costs exceed the benefits, they will reduce the efficiency of business operation. Thus, we can

conclude in practice that the relationship between customer receivables and business performance is inverted-U, there is an optimal level of receivability at which efficiency. The activity of the business is the greatest. At the low level, when the efficiency of the business increase and the optimal receivables is reduced, the efficiency of the business will decrease. Moreover, the deviation from the optimal value reduces the efficiency of the business.

Thus, the implication in our study for researchers and business managers is that managing commercial credit policies is critical to business operations in order to increase operational efficiency through the profitability of assets and profitability of equity. Businesses should strive to ensure the optimum level of customer acquisition to maximize business performance. For the Vietnamese market, the average customer receivable margin of the industry is about 25% of the total assets.

However, the limitation of this study is the cases for each industry with different characteristics and for different sizes of enterprises (large enterprises, small and medium enterprises) different commercial applications. Therefore, it would be worthwhile to examine the factors that affect receivables and analyze whether there is a non-linear relationship between receivables and business performance among different occupations or types of enterprise sizes.

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APPENDIX 1.

Table 2. Statistics describe the rate of customer receivables and business performance

Factors that affect account receivables	Experimental results of previous studies	Expectations of our research
Provision for doubtful receivables (PROVI)		+/-
Revenue growth (GROWTH)	(+) Emery (1984) (+) Petersen and Rajan (1997) (+) Niskanen and Niskanen (2006) (-) Garcia-Teruel and Martinez-Solano (2010) (+) Vaidya (2011)	+/-
Size (SIZE)	(+) Nadiri (1969) (+) Petersen and Rajan (1997) (+) Ng et al. (1999) (+) Danielson et al. Scott (2004) (+) Niskanen and Niskanen (2006) (+) Bougheas et al. (2009) (+) Garcia-Teruel and Martinez-Solano (2010) (+) Khan et al. (2012) (+) Shi et al. (2016)	+
Years of Operation (LAGE)	(+) Petersen and Rajan (1997) (+) Niskanen and Niskanen (2006) (+) Bougheas et al. (2009) (Meaningless) Garcia-Teruel and Martinez-Solano (2010) (+) Khan et al. (2012) (+) Shi et al. (2016)	+
Short-term finance (STLEV)	(+) Petersen and Rajan (1997) (+) Niskanen and Niskanen (2006) (+) Garcia-Teruel and Martinez-Solano (2010) (-) Vaidya (2011)	+/-
Financial cost (FCOST)	(-) Petersen and Rajan (1997) (-) Garcia-Teruel and Martinez-Solano (2010)	-

Factors that affect account receivables	Experimental results of previous studies	Expectations of our research
Cash flow (CFLOW)	(Meaningless) Niskanen and Niskanen (2006) (+/-) Garcia-Teruel and Martinez-Solano (2010)	+/-
Total assets turnover (TURN)	(-) Long et al. (1993) (+) Garcia-Teruel and Martinez-Solano (2010)	+/-
Profits (GPROF)	(+) Emery (1984) (+) Petersen and Rajan (1997) (+) Garcia-Teruel and Martinez-Solano (2010)	+
Inventory Ratio (INVEN)	(-) Bougheas et al. (2009) (-) Vaidya (2011)	-
Liquidity (LIQ)	(-) Nadiri (1969) (+) Ng et al. (1999) (-) Bougheas et al. (2009) (+) Vaidya (2011)	+/-

APPENDIX 2.

Table 3. Previous research on the impact of receivables on the value of the enterprise and results of the study on the impact of receivables on performance

Dependent variable			Independent variable					Verification of the fit of the model
			REC	REC ²	GROWTH	SIZE	LEV	
Martínez-Sola et al. (2012)	Enterprise value	Tobin's Q	+	-	+	Meaningless	Meaningless	AR (2) > 0.1 and Hansen test > 0.1 so the model is fit
		MBOOK	+	-	+	Meaningless	+	AR (2) < 0.1 and Hansen test > 0.1 should have autocorrelation
Expectations of our research	Business performance	ROA	+	-	+	+/-	-	AR(2) > 0.1 and Hansen test > 0.1
		ROE	+	-	+	+/-	-	AR(2) > 0.1 and Hansen test > 0.1

APPENDIX 3

Table 4. A composite of previous studies on the impact of changes in receivables on the value of enterprises and results of the study on the impact of changes in receivables on performance

Dependent variable		Independent variable				Verification of the fit of the model
		DEVIATION	GROWTH	SIZE	LEV	
Martínez-Sola et al. (2012)	Tobin's Q	-	+	Meaningless	+	AR (2) > 0.1 and Hansen test > 0.1 so the model is fit
	MBOOK	-	+	Meaningless	+	AR (2) < 0.1 and Hansen test > 0.1 should have autocorrelation
Expectations of our research	ROA	-	+	+/-	-	AR(2) > 0.1 and Hansen test > 0.1
	ROE	-	+	+/-	-	AR(2) > 0.1 and Hansen test > 0.1



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Determinants of Operational Self-Sustainability of Microfinance Institutions in Vietnam

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Abstract

Using panel data of 34 microfinance institutions in period of 5 years (2011-2015), this study is aimed to investigate the determinants of the Operational Self-Sustainability (OSS) of Vietnamese microfinance institutions. The main findings are: (i) Microfinance institutions' OSS in Vietnam are mainly determined by 5 following factors: Portfolio at Risk (PAR>30), Capital structure, Gross Loan Portfolio, Scope of activities of MFIs and Legal Form of MFIs; (ii) Among these factors, OSS are most affected by: legal status (social organizations have better OSS than formal MFIs or programs/projects), location (MFIs focus in one province have higher OSS than working nationwide or just in one district), Capital Structure (MFIs with more equity proportion have higher OSS); (iii) Surprisingly, average loan size per borrower and Age of MFIs do not have statistically significant correlation with Operational- Self Sustainability. Therefore, to be more sustainable, MFIs should focus on its professionalism and increase its equity. Other recommendations are proposed to related stakeholders for the enabling ecosystem for microfinance development - one important tool in poverty reduction and economic development.

Keywords: *Capital structure, Determinants, Microfinance institutions (MFIs), Operational self-Sustainability (OSS), Portfolio at risk (PAR).*

JEL classification: *G21, D14*

1. Introduction

Poverty has always been a significant issue not only of the poor countries, but also a global issue. Microfinance (MF) plays a very important role for economic development - society, especially the reduction of poverty and social development in developing countries (ADB, 2000; Chowdhury, 2009; Legerwood, 2013). From the mid 90's, the Grameen Bank, ACCION, Card Bank model in the world have proved that: MF's activities can thrive and

serve the poor without subsidies. Besides, some of the non-government and charity organizations have noticed that their growth is limited due to the scarcity of funds, therefore sustainability becomes the essential requests for MFIs (Ledgerwood, 2013).

Over three decades of formation and development, MF in Vietnam has achieved success in contributing to the economic and social development; in particular, improving living standard for the poor. However, the sustainability of MFIs is still problematic (Quach Manh Hao, 2005; Nguyen Kim Anh and Le Thanh Tam, 2013). Therefore, the sustainable development of MF is one of the hot topics that are concerned by MF's practitioners, managers as well as donors (Duflos, 2013), which should be targeted in the next process of integration and development and financial inclusion. The operational self-sustainability (OSS) reflects the relationship between operating income and total operating costs, which is the first step in reach overall sustainability. Other levels of sustainability are Financial Self-sustainability, (FSS) and Institutional Self-sustainability (ISS). Therefore, determinants of the Operational- Self Sustainability of MFIs in Vietnam and the solutions to help MFIs operate more sustainably are urgent issues that needs to be addressed, especially in the context of comprehensive financial inclusion.

The objective of this research is to investigate the determinants of the Operational Self-Sustainability of Vietnamese Microfinance Institutions in the period of 2011 to 2015. In order to achieve this objective, the following research questions will be answered:

- What is the Operational Self-Sustainability of Microfinance Institutions?
- What are the determinants of the Operational Self-Sustainability of Vietnamese Microfinance Institutions?
- How can Vietnamese Microfinance Institutions improve their Operational Self-Sustainability?

2. Literature Review/Theoretical Framework and Methods

2.1. Literature Review on previous researches

Several studied have been done on determinants of OSS of MFIs in different regions and countries. Woller & Schreiner (2001) defined correlation between poverty lending sustainability and six aspects of outreach in general. Cull et al (2007) did the global analysis on relationship between financial performance and outreach of all 124 leading micro banks in 49 countries using World Bank databased. For Africa, where microfinance institutions are relatively developed, several studies have been done, such as: Osoimehin (2011) analysed the cases of 80 MFIs over 6 years (2005-2010) in SouthWestern Nigeria, while Borjesson (2016) did the assessment in 22 Sub-saharan African countries in period 2005-2014. In Asia, Mahapatra et al (2016) studied the determinants of OSS of 65 MFIs in India in period 2005-2013. None of the researches have studied on Vietnam case yet. This is the reseach gap for this study.

2.2. Theoretical framework for the research

Microfinance, MFIs and OSS

Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, insurance for the poor and low-income households, individual businesses and their small businesses. This may be an important element in effective poverty reduction strategies as it is consistent with the accessibility and condition of the poor (ADB, 2000). In addition, "microfinance" has been developed into the new term of "financial inclusion" - a concept that is being considered to expand the development of a comprehensive financial program and creating a way for financial markets to better serve the poor (Ledgerwood, 2013).

Microfinance Institutions (MFIs) are the providers of financial services for the poor - mainly are credit and savings - although some providers offer other services such as payment, insurance (Ledgerwood, 2013). As an organization with dual goal - social outreach goals and financial sustainability - challenge for MFIs is to be sustainable and support poverty reduction simultaneously. (Armedriz de Aghion and Morduch, 2005). The well-documented and widely applauded achievements of microfinance are increasingly coupled with recognition of its limitations and the need to take a more holistic view on good outreach, financial sustainability and positive impacts on poverty reduction (Ledgerwood, 2013).

Sustainability can be viewed from many different angles, such as organization, management, and finance (Mahajan and Nagasri, 1999). Financial sustainability is one of the important aspects of sustainable development, which is defined as the ability to generate income to cover all operating and financing costs and other expenses incurred, with profitability (Ayayi and Sene, 2010), (Meyer, 2002). Rhyne (1999) and Meyer (2002) confirmed that sustainability helps MFIs to have good funding for serving the poor in the long run. There are two levels of financial sustainability: Operational Self-sustainability (OSS) and Financial Self-sustainability (FSS). *The operational Self-Sustainability (OSS)* ratio shows the relationship between operating revenues and operating expenses (*including depreciation and provision for losses*). Donors and MFI officers use this to assess whether or not an MFI has covered its operation costs. International practices show that, to achieve the sustainable long-term operation, OSS must be more than 120% (Bogan, 2012; Ledgerwood, 2013). *Financial self-sufficiency* implies the ability to cover all administrative costs, loan losses, financing costs from operating income after adjusting for inflation and subsidies and treating all funding as if it had a commercial cost (Rosenberg, 2007). According to Morduch (1999) if the institution is not financially self-sufficient, it cannot survive without subsidies as it would not be able to cover its costs of capital at market rates. However, calculation of FSS is tricky due to the calculation of inflation and opportunity costs.

Determinants of MFIs' OSS

OSS are determined by internal and external factors in the ecosystem. As per literature review, originated from: firm theory, bank capital channel and agencies theories, the key determinants of OSS are internal and external factors (Samuelson and Nordhaus,

1996; Inboden, 2005; Ledgerwood, 1999; Jensen, 2003; Osotimehin et al, 2011). Of which, the key factors are:

- *Portfolio at risk (PAR)*: The PAR >30 days is the ratio of loans outstanding principal past due instalments longer than 30 days over total outstanding loans. The higher PAR is, the higher the potential loss in revenues, the lower the OSS. Therefore, PAR has adversely effect on the OSS of MFIs (Ghatak, 2000; Francisco Olivares-Polanco, 2005; Cull et al., 2007; Ayayi and Sene, 2007; Ayayi & Sene, 2010; Becker, 2013; Marrakkath, 2014).

- *Capital structure of MFIs*: The correlations between capital structure of MFIs (measured by ratio of total equity divided by total assets) and OSS are various in different studies. Coleman (2007) shown a positive relationship between debt and sustainability, while Bogan's research (2008) confirmed a negative relationship between higher equity and OSS. However, Nadiya et al (2012) found no correlation between capital structure and the target of OSS.

- *Depth of outreach of MFIs* to measure how deep MFIs reach those who have been unable to acces formal financial services. The average loan size is a proxy for depth of outreach determined as the average gross loan portfolio divided by the number of active borrowers. The indicator of greater depth of outreach is smaller loans. This factor represents the orientation for the development of an MFI or deep access of an MFI, which means the ability of MFIs in reaching very poor clients. (Christen, 2001; Navajas et al, 2000; Bhatt & Tang, 2001; Olivares-Polanco, 2005; Von Pischke, 1996). Research of D'Espallier and partners (2009) found that many women customers are associated with low portfolio risk, lower credit losses, all of which contributed to higher OSS. Adongo and Stork (2006), Gregoire and Tuya (2006), Gonzalez (2007) and Nyamsogoro (2010) concluded that larger loans are related to higher cost efficiency and profitability. However, the study by Nadiya (2011) in India shows a reverse relationship between average loan size and OSS.

- *Age of MFIs*, measured by total of years the MFIs has been operated. In firm theory, the firms with longer time of establishment will be more sustainable thanks to its cost and operational management experiences. However, if old firms do not innovate and improve to update the new management and IT application, they could not be competitive with the newly established firms with cheaper and faster inputs. In practical experiences of MFIs, these two dimensions also demonstrate the same. Cull et al (2007) and Bogan et al (2007) shown that the older the MFIs, the higher the OSS thanks to its reputation to attract savings and managed cost efficiency. In contrast, Nyamsogoro's finding (2010) presented the different view: OSS is not affected by the MFIs' age at all.

- *Other characteristics of MFIs (Gross Loan Portfolio, Scope of activities and Legal form of MFIs)* These elements demonstrate the specific aspects of a MFI that affect the operational- self-sustainability. The previous research by Venkatraman & RajSekhar (2008) shows that MFIs in India are formal MFIs that are more sustainable and have higher OSS. Besides, the scope of activities of MFIs and savings service providers of MFIs also influences

the operational- self-sustainability of MFIs (Crombrugge et al., 2008). Moreover, Nadiya Marakkath (2014) stated that gross loan portfolio has the positive correlation with the operational self-sustainability of the MFIs. As the total portfolio increases, MFIs will be able to increase their operating income so that the OSS will increase.

2.3. Research method

Data

In this study, panel secondary data is collected from financial reports of 34 microfinance institutions from Microfinance Information Exchange (MIX) market data for 5 years from 2011-2015. MIX is the platform initiated by World Bank for socially responsible investors and policy makers focused on inclusive finance in emerging markets. All big and reputed MFIs are the MIX's members and provided information to them quarterly. Therefore, data source is reliable and comparable with international standard.

Research Model

To analyze determinants of OSS of MFIs in Vietnam, Binary Logistics Regression is applied, with Stata software. Basing on literature review, seven determinants of MFIs' OSS in Vietnam are proposed as the following formula.

$$LnOSS = \beta_0 + \beta_1 LnPAR > 30 + \beta_2 LnEAR + \beta_3 LnALSPB + \beta_4 GLP + \beta_5 AGE + \beta_6 LOC1 + \beta_7 LOC2 + \beta_8 LEGAF1 + \beta_9 LEGAF2 + \mu$$

Of which, the variables and hypotheses are summarized as in Table 1:

Table 1: Dependent variables, explanatory variables and hypotheses in the model summarized from literature review

<i>Variable</i>	<i>Definition</i>	<i>Formula</i>	<i>Expected signals</i>	<i>References</i>
PAR > 30	Portfolio at risk (>30)	$\frac{\text{Overdue debts} > 30 \text{ days}}{\text{Total outstanding loans}}$	-	Cull & partners (2007); Ghatak (2000); Francisco Olivares-Polanco & Tradha Ramanan (2012); Intellectap(2010); Ayayi & Sene (2007); Ayayi and Sene (2010); Becker(2013); Pinky Dutta Debabrata Das(2014); Nadiya Marakkath (2014)
EAR	Capital structure	$\frac{\text{Total Equity}}{\text{Total assets}}$	+	Nadiya Marakkath (2014); Bogan (2008)
ALSPB	Average loans per borrower	$\frac{\text{Total outstanding loans}}{\text{Number of borrowers}}$	-	Nadiya Marakkath (2014); M Nadiya, Francisco Olivares-Polanco & Tradha Ramanan (2012)

<i>Variable</i>	<i>Definition</i>	<i>Formula</i>	<i>Expected signals</i>	<i>References</i>
GLP	Gross loans portfolio		+	Nadiya Marakkath (2014)
AGE	Age of MFIs	Numbers of Year of MFIs' operation by the time of research	+	Venkatraman & RajSekhar (2008); Ayayi & Sene (2007) Crombrugghe & partners (2008); Venkatraman & TrajSekhar (2008)
LOC1	Scope of activities of MFIs	(= 1) if MFI operates nationwide; (=0) if MFIs operate in 1 province or within districts	+	Venkatraman & RajSekhar (2008); Ayayi & Sene (2007) Crombrugghe & partners (2008); Venkatraman & RajSekhar (2008)
LOC2	Scope of activities of MFIs	(= 1) if MFIs operate in the whole province, (= 0) if MFIs operates in one district only	+	Venkatraman & RajSekhar (2008); Ayayi & Sene (2007) Crombrugghe & partners (2008); Venkatraman & RajSekhar (2008)
LEGAF1	Legal forms of MFIs	(= 1) if MFIs operate in the semi-formal form of microfinance programs/projects, (= 0) if MFIs operate in the forms of Social Funds or lisenced MFIs	-	Venkatraman & RajSekhar (2008)
LEGAF2	Legal form of MFIs	(= 1) if MFIs operate in the form of social funds, (= 0) if MFIs operate in the form of lisenced MFIs or programs/projects	+	Venkatraman & RajSekhar (2008)
OSS	Operational Self-sustainability ratio	$\frac{\text{Operating income}}{\text{Total operational expenses}}$		

Source: Authors' synthesis basing on existing literature

3. Results and Discussion

3.1. Descriptive statistics of the variables

Descriptive statistics of the variables of the model - except the dummies LOC (activity scope) and LEGAF (legal form) in table 2 shows that: In general, MFIs achieve operational sustainability (average value of OSS is 139.99).

Table 2: Descriptive statistics of variables

Variable	Unit	Observation	Minimum value	Maximum value	Average value	Standard deviation
OSS	%	104	39	290	139.39	43.08
PAR	%	104	0	224	4.80	29.72
EAR	%	104	0	100	43.34	27.98
ALSPB	VND 1,000	104	1,458,31	63,000,00	5,207.81	63.25
GLP	VND 1,000	104	983,601	2,400,000,000	119,285,419.24	328,052,477. 28
AGE	Year	104	1	24	8.73	6.41

Source: Statistics results from Stata based on financial reports of 34 MFIs period (2011-2015)

However, the levels of OSS are very different among MFIs, with some of MFIs only reach 39%, while the highest OSS which one MFI gained was 290%. Other variables such as PAR, EAR, ALSPB, GLP, and AGE have a large difference between the highest and lowest values and the high standard deviation, which shows a large difference between MFIs for observed indicators.

Multicollinearity test and heteroskedasticity test

Variance Inflation Factor (VIF) is used to test the phenomenon of correlation between independent variables. The result of table 3 shows $VIF < 10$, which means that no multicollinearity exist. LnGLP and LnAGE, LnGLP and LOC1, LEGEF1 and LEGAF2 have the level of correlation approximately 0.58. However, these values are not significantly high for concluding the perfect multicollinearity problem.

Table 3: Correlation matrix and variance inflation of the variables in the model

	LnOSS	LnPAR>30	LnEAR	LnALSPB	LnGLP	LnAGE	LOC1	LOC2	LEGAF1	LEGAF2	VIF
LnOSS	1.000										
LnPAR>30	-0.0678	1.000									1.12
LnEAR	0.5365	0.0421	1.000								1.08
LnALSPB	0.0580	0.1056	-0.0282	1.000							1.18
LnGLP	0.1930	0.1474	0.0868	0.3275	1.000						2.70
LnAGE	0.0709	0.1748	-0.0012	0.1131	0.5762	1.000					2.26
LOC1	-0.0068	-0.0298	0.0987	0.1622	0.5888	0.4319	1.000				1.49
LOC2	0.2090	-0.0476	-0.1014	-0.1193	-0.1006	-0.0961	-0.4746	1.000			2.07
LEGAF1	-0.2636	-0.1362	-0.0640	-0.0400	-0.2824	-0.0595	0.0287	-0.2335	1.000		1.83
LEGAF2	0.3587	-0.0335	0.1711	-0.1496	-0.0721	-0.0551	-0.1364	0.1595	-0.5887	1.000	1.12

Source: Statistics results from Stata based on financial reports of 34 MFIs period 2011 – 2015

Other statistical tests for checking errors (heteroskedasticity, multicollinearity) were taken to confirm that: this model does not have these problems. Following is the

regression results, with two steps. The original regression result with all independent variables showed some insignificantly statistical relations. After removing the insignificant variables,

Table 4: Estimation results of OSS determinants of MFIs in Vietnam

Variable	Original		After removing the insignificant variables	
	Coefficient	P-value	Coefficient	P-value
Intercept	-3.217808		-1.936556	
LnPAR>30	-0.0316416*	0.072*	-0.0279216*	0.059*
LnEAR	0.3305043***	0.000***	0.326961***	0.000***
LnALSPB	0.1341518 ^{ns}	0.511	Removed	
LnGLP	0.1194703*	0.081*	0.1150524**	0.002**
LnAGE	0.0287681 ^{ns}	0.718	Removed	
LOC1	-0.148921 ^{ns}	0.464	Removed	
LOC2	0.381412**	0.009**	0.4097602**	0.005**
LEGAF1	0.0594789 ^{ns}	0.540	Removed	
LEGAF2	0.4691555***	0.000***	0.4230861***	0.000***
R ²	0.4655	0.0000***	0.4550***	0.0000***
No of Observation	104	-	104	-

*Note: ***, **, *: statistical significance at $\alpha = 1\%$, 5% , 10%*

ns: not statistical significant

Source: Statistics results from Stata based on financial reports of 34 MFIs period 2011 – 2015.

Among the determinants of OSS, four factors are insignificant, including average loan per borrower (LnALSPB), age of MFIs (LnAGE), scope of activities at the national or in one province (LOC1), and legal form of MFIs – if semi-formal or a project/program (LEGAF1). These are relevant to the Vietnam case, with ceiling maximum loan size for microfinance clients by the policy (USD 1,430 by March 2018, and up to USD 2,150 from March onward), young age of MFIs (max 20 years such as TYM), no MFIs operated nationwide (only two biggest MFIs of CEP and TYM operated in some provinces), and most of MFIs developed from project/program forms.

Table 5: Summary of hypotheses and actual determinant factors with Vietnam case

Dependent variable: Operational Self- Sustainability (OSS)

Number of observations: 104

Factors	Expected sign	Actual sign	Hypothesis tested
Portfolio at Risk (PAR>30)	(-)	(-)	Accepted
Capital structure (EAR)	(+)	(+)	Accepted
Average loan size per borrower (ALSPB)	(-)	-	Rejected
Gross loan portfolio (GLP)	(+)	(+)	Accepted
Age of MFIs (AGE)	(+)	-	Rejected
The scope of activities of MFIs (LOC1)	(+)	-	Rejected
The scope of activities of MFIs (LOC2)	(+)	(+)	Accepted
Legal form of MFIs (LEGAF1)	(-)	-	Rejected
Legal form of MFIs (LEGAF2)	(+)	(+)	Accepted

Source: Author's summary

Among significant factors affecting OSS, Portfolio at risks of MFIs ($\ln PAR > 30$) is negatively related to OSS (coefficient = -0.0279216). Other factors remain constant, if the quality of loan portfolio ($PAR > 30$) decreased, MFIs will have to increase loan loss expenses, which declined the operational self-sustainability of MFIs. This result consistent with previous studies of Ayayi and Sene (2010), Becker (2013), Debabrata Das Pinky Dutta, (2014) Nadiya Marakkath (2014). In Vietnam, most MFIs have very low $PAR > 30$ days (1%). This suggests that MFIs maintain relatively good quality of the loan portfolio from which had a positive impact on the sustainability and profitability of the organization.

The coefficient of $\ln EAR$ is $+0.326961$, which means that the ratio of equity to total assets affect positively the sustainability of MFIs. The study results showed that MFIs with lower leverage ratio (higher equity ratio over total assest) got better OSS. It came from the fact that owners of Vietnamese MFIs are mainly local people's committees or mass organizations, who did not request any dividend or profit sharing from MFIs. Therefore, cost of equity is almost zero. This result is consistent with previous studies of Nadiya Marakkath (2014) and Bogan (2008).

$\ln GLP$ is positively correlated to OSS ($+0.1150524$), which implies that total loan portfolio of MFIs has positively affected the sustainability of MFIs. The research results of Nadiya Marakkath (2014) also showed a positive correlation between the total portfolio and OSS of MFIs. When the total portfolio increased, MFIs can increase income and reduce the cost per unit by economies of scale; therefore, OSS will be improved. Hence, in order to reach good operational sustainability, MFIs need to expand market share and increase total loan portfolios.

Research results of Crombrugge et al., (2008) also showed that there was impact of scope of activities provided in the locality of MFIs (LOCs) and facilities providing saving services of MFIs on the sustainability of an MFI. However, the level of impact depends on the different research context of different countries. For Vietnam, this correlation is quite strong (+0.4097602).

Similarly, with the positive correlation of LEGAF2 (0.4230861), it demonstrates that MFIs having legal form are more sustainable than MFIs operating in the form of program and projects microfinance or even the official forms. While previous studies of Venkatraman and RajSekhar (2008) shows that MFIs in India, which are official MFIs, are more sustainable, this study implies that semi-formal MFIs in Vietnam have more advantages to other forms in both costs and operation. In Vietnam, MFIs operating in district or inter-commune levels. Most Programs/Projects MF are run by or cooperated with political organizations-social organizations, and funds from foreign donors or granted by local People's Committees. After 2010, Vietnam became a middle-income country, many cheap-foreign funding sources have been cut down, while funds from the state budget were also reduced due to the difficulties of the economic crisis. Formalizing MFIs is a right direction, as it allows MFIs to mobilize deposits better and have the sustainable funding sources than before. However, the costs for newly licensed MFIs in the first few years are significant, as they have to apply various regulatory requirements such as capital adequacy ratio, required reserves, provision for loan losses, and other types of compliances from human resources, corporate governance. These requirements increase operating costs in the first period of formalization, thus badly affecting the operational sustainability in short-term.

4. Conclusion and policy implications

4.1. Conclusion

The key findings from this analysis are (i) MFIs in Vietnam are not highly sustainable, and still dependent on funding sources from outsiders; (ii) On average, MFIs in Vietnam meet the international standard of operational self-sustainability (OSS); however, the sustainable level among institutions are very different; (iii) MFIs reach high level of portfolio quality, but lower level of sustainability.

Therefore, differently from Asian or African studies, the five significant conclusions from the ranking of impacts of OSS determinants in Vietnam are:

First of all, legal form of MFIs factor: semi-formal MFIs have more advantages in reaching OSS than program/project types and even the formal MFIs in term of costs, while licensed MFIs had to face with high compliance costs right after being licensed in the first few years. MFIs with licenses and microfinance programs have more difficulties in cost and benefit management than the middle-level of legal form MFIs – the social funds. For formal MFIs, the cost of compliance and transformation are still high compared to their capacities.

Second, scope of activities of MFIs factor: MFIs operated in the whole province got better economies of scale than MFIs in one district only and gained better OSS. The MFIs who operated in relatively larger scale (within one province) have better capacity to be

sustainable than within one district, but if operated in national levels, their operations may not be as efficient as one province.

Third, capital structure factor: the lower the leverage ratio, the higher OSS. MFIs with more equity have better sustainability than the MFIs borrowing or getting deposits from the public. This is thanks to the fact that owners of MFIs did not get profit sharing at all, and MFIs are operated mostly under social enterprise form.

Forth, total loan portfolio factor: the higher then total loan portfolio, the higher the OSS. It means that lending is still the main income source of MFIs, and larger loan portfolio allows MFIs to reach its economies of scale.

Fifth, Portfolio at Risk (PAR>30) factor: as the lower the credit risks, the higher the interest incomes and lower provision for loan loss, then OSS has been improved. MFIs with good quality loans could keep high return (from interest), while reduce the cost of credit provision and bad debt issues.

1.2. Policy Implications

For improving the sustainability MFIs, contributing to the economic development and poverty reduction in Vietnam, the following implications are proposed:

To microfinance institutions

- Attracting more equity, especially from the private sector for non-profit purposes.

As the regression result, equity has positive impacts on MFIs' sustainability, which then support the development of Vietnam. MFIs are mainly work with low-income people for development purposes. Therefore, attracting more equity from the private stakeholders who have non-profitability manners with social objectives are very necessary, both from domestic and international communities. MFIs should share more information transparently on their operations and demonstrate their strong impacts to social development, actively look for charity or development funding sources.

- Strengthening operational and risk management according to international practices, including liquidity management, credit management, credit risk management, operational risk management, financial management, capital adequacy ratio management... in order to decrease portfolio risks, ensuring that MFIs can operate safely and sustainably. This is also the solid foundation for MFIs to reduce the costs, increase revenues, build strong reputation for attracting savers, investors and donors.

- Expanding the customer base extensively and intensively by diversifying financial products provision, such as lending (flexible durations and payment periods according to clients' cash flow, risk-based interest rate decisions for clients), microinsurance, remittance, savings (various term savings, savings for different purposes such as education, emergency, healthcare, installment savings). The application of soft selling and upselling techniques should be applied, in parallel to non-financial products such as financial literacy, financial advices, etc are helpful for keeping microfinance existing clients and attract the new ones. This approach is also essential for ensuring no "mission drift" of MFIs in its commercialization and development.

- *Develop the clear strategy for the scope of operations in accordance with the size and capability of MFIs development.* If MFIs restrict scope of operations within few products or few operational areas, they will limit the ability to reach customers and increase market share; thus, affecting the sustainability of the organization. However, if MFIs extend their operation too fast, it will reduce the sustainability due to the increase of management and operation cost, while facing difficulties in competitions of expanding market shares with other stronger financial providers such as commercial banks, people's credit funds, other MFIs, and private money lenders.

- *MFIs operating in the form of Programs/Project of MFIs should be converted into social funds, as this is currently the highest sustainable model.* Social funds need to choose appropriate time to officially transfer to MFI after the legislation on microfinance activities be modified and improved. At the same time, social funds should also develop a plan and prepare carefully in all aspects such as personnel, finance before officially transforming to MFI. This will help MFIs to become actively and overcome the difficulties and challenges when initially formalized to stand strong and grow.

To policy makers (State Bank of Vietnam, Ministry of Finance and related government agencies)

The development of MFIs depends very much on the legal framework, particularly the regulations directly related to MFIs. The transformation of MFIs into formal microfinance institutions is a right policy to guide these organizations operate in a professional manner. Based on the experience from other countries, after the conversion, most MFIs will have larger operational scale and be more efficient. However, in this research, licensed MFIs have lower level of operational self-sustainability than social funds (semi-official MFIs). It means that the current regulations are still costly to licensed MFIs, as they have to adapt various prudential requirements for safety, and system transformation cost of changes. Therefore, the regulations specifically for MFIs should pay more attention to its characteristics and development purposes, encouraging the faster formalization process for the whole microfinance sector and financial inclusion.

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APPENDICES

Appendix 1: List of Vietnam's Microfinance Institutions in the research

	MFI name	Symbol name
1	Fund for poor self-employed workers	CEP
2	Tinh thuong One Member Limited Liability Company	TYM
3	M7 Microfinance Institution	M7MFI
4	Thanh Hoa Microfinance Institution	Thanh Hoa MFI
5	Women Development Fund of Dien Bien district	FWD
6	Women Development Fund of Dien Bien Phu city	DBP CITY
7	Microfinance Department - World Vision Vietnam	WV Vietnam
8	Tien Giang Provincial Women's Economic Development Assistance Fund	MOM
9	Fund for poor employees in Ba Ria - Vung Tau province	CAFPE BR-VT
10	Golden Hand Program	BTV
11	Ho Chi Minh Women Supporting Economic Development Fund	CWED
12	Anh Chi Em Program	ACE
13	Center for Development for the Poor Ha Tinh	PPC
14	Small Business Development Center	SEDA
15	Ninh Phuoc Women Development Support Fund	
16	Hue Heart Foundation	H4H
17	Microfinance fund for community development	MFCDI
18	Credit savings program - Women's Union, Phu Yen District, Son La	
19	Center for Women and Community Development	CWCD
20	Standard training	STU
21	An Phu Development Fund	AN PHU
22	Fund for supporting women in Bac Kan province	BKF
23	Fund for supporting women in Lao Cai province	
24	Fund for supporting women in economic development of Ben Tre province	BTWU
25	Fund for opportunity for women to work in Daknong province	DNOWEOF
26	Soc Son Fund for the poor women	PNN
27	CSOD	
28	Childfund Hoa Binh	
29	Dariu	
30	Small Credit Fund For Housing Refurbishment, Da Nang	
31	Soc Trang Fund for Poor Women	
32	VietED Microfinance Institution	VietED MF
33	Women Development Fund, Quang Binh	
34	Ho Chi Minh City Women Union	HCMC WOMEN UNION

Appendix 2: Results of statistical tests of the Model

VIF test result

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. vif
```

Variable	VIF	1/VIF
legaf1	3.55	0.281796
legaf2	3.30	0.303123
lnglp	2.75	0.364116
loc1	2.30	0.435014
lnage	1.60	0.625941
loc2	1.44	0.693361
lnpar1	1.26	0.796620
lnear1	1.23	0.814826
lnalspb	1.18	0.850496
Mean VIF	2.07	

Hetestest result

```
. hettest
```

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of lnoss

chi2(1) = 248.50

Prob > chi2 = 0.0000



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Impact of Working Capital Management on Firm Profitability: Evidence from Industrial Enterprises Listed in Hochiminh Stock Exchange (HOSE) in Vietnam

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Abstract

This study investigates an impact of working capital management (WCM) on profitability of industrial companies listed in Hochiminh Stock Exchange (HOSE). The author uses 352 observation samples from 44 industrial enterprises listed on HOSE over the 8-year period from 2010 to 2017. Return on Asset (ROA) and Tobin's Q (TQ) are respectively selected as the dependent variables for book value and market value of profitability. The experimental results show that the Cash Conversion Cycle (CCC) and all components including the Account Receivables Turnover in Days (ARD), the Inventory Turnover in Days (INVD) and the Account Payables Turnover in Days (APD) have the negative effects on the ROA. In addition, the CCC, the ARD, and the APD have same effects on the TQ. This result shows that the optimizing of the CCC by shortening the collection period, reducing the payment times, and accelerating the inventory turnover will help increase enterprises profitability. In addition, this study has also found the impact of the Leverage, and the Sale size on the ROA and the TQ.

Keywords: *Working capital management, Return on assets, Tobin's Q, Cash conversion cycle.*

1. INTRODUCTION

This paper examines the relationship between the working capital management (WCM) and the profitability of the 44 industrial companies listed on the Hochiminh Stock Exchange (HOSE) for the period from 2010 to 2017. *Taleb et al. (2010)* recognized that

the WCM has a significant role because it affects the business profitability and liquidation of the firm. The WCM relates to manage current liabilities and current assets in order to ensure that the firm is able to remain in a position to pay short-term obligations and meet its operating expenses. However, with the profit businesses, financing decisions is always related to profitabilities. Therefore, the key target of the WCM is to control the short-term financing resource to make the compatibility between the profitability and the risk of the companies (Ricci & Vito, 2000).

There are many researchers investigated the effect of the WCM on business performance or profitability such as Bùi Ngọc Toàn (2016), Raheman and plus (2010); Dong và Su (2010); Padachi (2006); Deloof (2003) ... in the many other times and areas lead to more different results and the conclusion is unidentified. Therefore, it is necessary to investigate the effects of the WCR on firm profitability to provide more evidence of the effect of the two groups.

Now, in Vietnam, the WCM and profitability relationship has been investigated by some researchers in a few detail industry for examples: agriculture; real estate; manufacturing and processing industry; construction; and food and beverages ... but the relationship between the WCM and profitability has not examined in industrial companies. In the period 2008 - 2010, the world economic crisis directly affected the financial situation of Vietnamese enterprises. In the subsequent period (2010-2017), the Vietnamese economy is facing many difficulties due to internal problems of the economy and the impact of the global economic recession. For the period 2011-2015, the average growth rate of the whole economy was estimated at 5.91%, lower than the level of 6.32% of the period 2006-2010³. For this reason, the author continuously investigates the impact of the WCM on the profitability of the industrial enterprises for the 8-year period (2010 – 2017) after the world economic crisis. This gives the author more practical research results for the particular industry.

Therefore, the objective of this paper is to examine effects of WCM on firm profitability of the industrial enterprises. After that, the investigation gives recommendations to improve the effectiveness of WCM in order to increase the profitability of the industrial sector listed on HOSE.

2. LITERATURE REVIEW AND METHODOLOGY

2.1. Literature review

The WCM is calculated by the difference between current assets and current liabilities, which is used to assess the solvency or liquidity of an enterprise. Most of the traditional studies between WCM and profitability show that decreasing the WCM will have

³ <http://tapchitaichinh.vn/nghien-cuu--trao-doi/trao-doi-binh-luan/mot-so-diem-nhan-trong-tang-truong-kinh-te-viet-nam-giai-doan-20112015-75577.html>

a positive impact on the profitability of firms. There are many indicators to measure the WCM. One of the indicators used to measure efficiently WCM is the Cash Conversion Cycle (CCC) introduced by *Richards & Laughlin (1980)*. The CCC is the period from the expenditure of the firm's cash for the purchase of raw materials to manufacture the finished goods and the collection of cash from the sale of the finished goods. The CCC is calculated by the following three components: The Account Receivables Turnover in Days (ARD) + Inventory Turnover in Days (INVD) – Account Payment Turnover in Days (APD). The followings are the summary of several previous studies by different authors and in different contexts:

Deloof (2003) used a regression analysis and correlation model for a sample of 1,009 non-financial enterprises in Belgium for a 5-year period from 1992 to 1996. The results of the investigation showed the negative association between Gross operating income and the accounts receivable days, the inventory days and the accounts payable days. Concurrently, managers need to reducing the accounts receivable days and inventory days to a reasonable level may help improve the shareholders' value.

Lazaridis and Tryfonidis (2006) used a sample of 131 companies listed on the Athens stock Exchange for the period 2001-2004. The study showed the opposite effect between the CCC and the gross operating profit. Research reported that managers can improve profitability by the reasonable level of CCC and three components of CCC.

Sharma & Kumar (2011) studied the impact of CCC and the three components of CCC on ROA in 263 non-financial companies listed on the Bombay Stock Exchange (BSE) over the 9 year period from 2000 to 2008. Research results found the statistically significant affects between the average receivables period and firm size on the ROA.

Gamze et al. (2012) used secondary data collected from 75 manufacturing firms listed on Istanbul Stock Exchange Market for the period 2002 - 2009 with an attempt to investigate the relationship between WCR components and performance of the firms. The results demonstrate that firms can increase gross operating profit by shortening the ARD and the CCC. Moreover, the results for the TQ – market value of profitability were insignificant. The LEV as a control variable has a significant negative relationship with firm profitability.

Gul et al. (2013) investigated the impact of the WCM on the ROA of small and medium enterprises in Pakistan for the period 2006-2012. The results showed that the APD has the positive effect on ROA. While ARD, INVD, and CCC had the opposite effect on ROA. On the other hand, the study also found the positive impact of control variables – firm size on ROA. Meanwhile, control variables – current ratio has the opposite effect on ROA.

Julius et at. (2015) used a sample of Finnish listed companies over an 18-year period from 1990 to 2008 to examine the relationship between the working capital and profitability. The study found the effects of business cycle on the working capital–profitability

relationship is more showed in economic downturns relative to economic booms. Furthermore, the significance of efficient inventory management and accounts receivables conversion periods rise during the economic downturns period.

In Vietnam, there are also investigated on the relationship between working capital management and profitability in Vietnamese Stock Exchange.

Tu Thi Kim Thoa and et al. (2014) used the Ordinary Least Square method (OLS), the Fixed Effects model (FEM) and the Generalized Method of Moment (GMM) to test the relationship between WCM and profitability of 208 non-financial companies listed on the HOSE and the HNX in many economic sectors such as construction, real estate, transportation... The results showed that effective WCM by shortening the collection period and inventory period would increase the profitability of firms. Moreover, other sectors leaded to the relationship between WCM and profitability was also different.

Bui Ngoc Toan (2016) used a sample of 35 real estate firms listed on the Vietnam stock Exchange over a five-year period from 2010-2014 to test the impact of the working capital policy on the ROA. Research results showed the components of WCM including the days of account receivables, the interval of inventory have the negative effect on the ROA. Moreover, ROA was affected by the business size, leverage, and economic growth.

All these investigations found the relationship between WCM and profitability of firms. Within the scope of this paper, the author examines the relationship between the WCM using variables that based on the previous researches but this investigation is performed in the new period (2010 – 2017) and new sector (Industrial enterprises). Independent and dependent variables include the CCC and the all components of the CCC (including the ARD, the INVD and the APD) and firm profitability (including the ROA and Tobin's Q). Indicators including Firm size (FS), Sale Growth rate (SG), Sale size (Ln(sale)), Leverage (LEV), Current Ratio (CR) are used as control variables to test the impact on firm profitability.

2.2. Methodology

2.2.1. Sample and Data

Data used in the study is randomly collected from the financial statements of 96 industrial enterprises listed on the HOSE over the 8-year period from 2010 to 2017. The samples are taken as following: In listed companies on the HOSE, the author selects the industrial companies. Then, the author eliminates all industrial enterprises which do not have enough data during the research period (2010 - 2017). After that, the business data are abnormal; affecting the main variables will be disqualified. From this approach, the author has a panel data of 44 enterprises and a total of 352 observations during the 8- year's period from 2010 to 2017. The selected financial statements including the Statement of Financial

position and the Statement of Income are from www.hsx.vn; www.cafef.vn; www.stockbiz.vn; and other websites. Panel data include all necessary items in excel file and calculates all variables based on formula in Table 1 (below). After that, author uses EVIEW8 to perform the necessary analyses.

2.2.2. Variables

The author selects variables based on empirical research that has been conducted previously, mainly from research by *Bui Ngoc Toan (2016)* and uses dependent variable – Tobin's Q which was used by *Gamze et al. (2012)* as the market value of profitability.

Table 1 summarizes all the variables used in the study, along with acronyms and formulas for variables.

- **Dependent variable:** To measure the firm profitability, the ROA and Tobin'Q are selected that represented respectively for Book value and Market value of profitability.

The ROA reveals the efficiency of business activities of enterprises. However, ROA is calculated by the profit before interest, taxes, depreciation and amortization (EBITDA) on total assets. In industrial enterprises, interest and depreciation/amortization are expenses which have the large percentage so it can be different among firms or from year to year within one company. Therefore, EBITDA is a better appraisal of business performance and will help to make the study more accurate by eliminating the impacts of interest and depreciation/amortization expenses on fixed assets.

The Tobin's Q (TQ) is measured by firm assets in relation to a firm's market value. It reveals the relationship between book value and market value of firm. This indicator reflects the future expectations of investors. The firms which have high value of TQ are attractive to investors and are well appreciated by the market. It means that the higher the index value (TQ is bigger than 1), the higher the market rating.

- **Independence Variables:** The author uses the Account Receivables Turnover in Days (ARD), Inventory Turnover in Days (INVD), Account Payables Turnover in Days (APD), and Cash Conversion Cycle (CCC) to measure operation of working capital. The variables are calculated according to Table 1.

- **Control variables:** In addition to these independent variables, the following control variables also have an impact on the company's profitability: Firm size (FS), Sale growth rate (SG), Sale size (Ln(Sale)), Leverage (LEV) and Current Ratio (CR).

Table 1: Description of variables in the model

No	Type of Variables	Variables		Formula
1	Dependent variables	$ROA_{i,t}$	Return on assets	EBITDA/Total assets
2	Dependent variables	TQ	Tobin's Q	(Market value of Owner's Equity + Market value of Liabilities)/ Total assets
3	Independent variables	$ARD_{i,t}$	Account Receivables turnover in days	Average of Account receivables / Sale * 365
4	Independent variables	$INVD_{i,t}$	Inventory turnover in days	Average of Inventory / Cost of Goods sold * 365
5	Independent variables	$APD_{i,t}$	Account Payables turnover in days	Average of Account Payables / Cost of Goods sold * 365
6	Independent variables	$CCC_{i,t}$	Cash conversion cycle	$CCC_{i,t} = ARTO_{i,t} + INVTO_{i,t} - APTO_{i,t}$
7	Control variables	$FS_{i,t}$	Firm size	Logarithm of total assets (Ln(Total assets))
8	Control variables	$SG_{i,t}$	Sale growth rate	$(Sale_n - Sale_{(n-1)}) / Sale_{(n-1)}$
9	Control variables	$Ln(sale)_{i,t}$	Sale size	Logarithm of total sale (Ln(Sale))
10	Control variables	$LEV_{i,t}$	Leverage ratio	Total Liabilities/Total Equity
11	Control variables	$CR_{i,t}$	Current ratio	Current assets/Current liabilities

(Source: Summarization by author)

2.2.3. Hypothesis and methodology

Author proposes a general hypothesis stating the expected relationship between the WCM and firm profitability as the followings:

Hypothesis 1a: There is no relationship between the ARD and the ROA.

Hypothesis 1b: There is no relationship between the ARD and the TQ.

Hypothesis 2a: There is no relationship between the INVD and the ROA

Hypothesis 2b: There is no relationship between the INVD and the TQ.

Hypothesis 3a: There is no relationship between the APD and the ROA.

Hypothesis 3b: There is no relationship between the APD and the TQ.

Hypothesis 4a: There is no relationship between the CCC and the ROA.

Hypothesis 4b: There is no relationship between the CCC and the TQ.

These hypotheses are studied through models:

Model 1a:

$$ROA_{i,t} = \beta_0 + \beta_1*ARD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 1b:

$$TQ_{i,t} = \beta_0 + \beta_1*ARD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 2a:

$$ROA_{i,t} = \beta_0 + \beta_1*INVD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 2b:

$$TQ_{i,t} = \beta_0 + \beta_1*INVD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 3a:

$$ROA_{i,t} = \beta_0 + \beta_1*APD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 3b:

$$TQ_{i,t} = \beta_0 + \beta_1*APD_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 4a:

$$ROA_{i,t} = \beta_0 + \beta_1*CCC_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Model 4b:

$$TQ_{i,t} = \beta_0 + \beta_1*CCC_{i,t} + \beta_2*FS_{i,t} + \beta_3*SG_{i,t} + \beta_4*Ln(sale)_{i,t} + \beta_5*LEV_{i,t} + \beta_6*CR_{i,t} + \varepsilon_{i,t}$$

Where “i” is the firm, “t” is the year and ε is error term.

This investigation uses the ordinary least-squares regression model (OLS) for analysis. In addition to the OLS model, this study uses Hausman Test and General Method of Moments model (GMM) to assure findings are robust.

The Hausman Test is applied to determine the the exogeneity variables of the unobserved errors and choose between the Fixed Effects Model (FEM) and Random Effects Model (REM). Since the null hypothesis of the Hausman test is rejected (P-value < 0.05), we concluded that the REM is inconsistent and the FEM is preferred and vice versa.

In addition, *the Generalized Method of Moments* (GMM) introduced by *Arellano–Bond’s (1991)* to control for endogeneity, which could seriously impact the estimation results, this study applies. The endogeneity issue occurs when an independent variable is correlated with errors $\varepsilon_{i,t}$, which is often caused by omitted variables, measurement errors,

or simultaneity between dependent variables and independent variables. In all models that the investigation uses (including OLS, FEM/REM, and GMM models), the robust standard errors are used to obtain heteroskedasticity –robust estimators.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Descriptive statistics

The variables of the panel data includes 352 observation samples collected from 44 industrial enterprises listed on the HOSE between 2010 and 2017 were described in Table 2 below:

Table 2: Descriptive Statistics of variables

Variables	Mean	Max	Min	Std. Dev.	Observations
ROA _{i,t}	0.035	0.131	-0.102	0.025	352
TQ _{i,t}	1.029	3.580	0.270	0.414	352
ARD _{i,t}	53.224	655.539	-225.862	85.810	352
INVD _{i,t}	83.779	678.607	0	102.982	352
APD _{i,t}	25.391	413.367	-311.800	50.364	352
CCC _{i,t}	111.612	903.167	-209.188	135.823	352
FS _{i,t}	20.830	23.488	18.854	1.048	352
SG _{i,t}	0.169	3.419	-0.713	0.361	352
CR _{i,t}	2.299	18.169	0.265	2.217	352
LEV _{i,t}	0.470	0.894	0.048	0.215	352
Ln(sale) _{i,t}	20.529	24.025	17.871	1.154	352

(Source: Collected and processed by author)

Table 2 shows the descriptive statistic of all depended, independent and control variables. All variables collect enough data with 352 observations.

Dependent variables including the ROA and the TQ are used to measure respectively the book value and market value of profitability. The average ROA is 3.5%; the highest ROA is 13.1% and the lowest ROA is -10.2%. The average TQ is 1.03; the highest TQ is 3.58 and the lowest TQ is 0.27.

Independent variables including The CCC, the ARD, the INVD and the APD are used to measure the WCM. The average CCC is 111.6 days; it takes minimum -209.2 days and maximum 903.2 days. It means that enterprises have to take 53.2 days to collect money from the customer, 83.8 days to trade and sell the inventory and 25.4 days to pay for the supplier.

The average FS, SG, CR, LEV and Sale size is respectively 20.83, 16.9%, 2.23 times, 0.47 times and 20.53.

3.1.2. Correlation analysis

Correlation coefficients between dependent variables, independent variables and control variables are shown in Table 3: Correlation coefficients between variables as the followings:

Table 3: Correlation coefficients between variables

	ROA _{i,t}	TQ _{i,t}	ARD _{i,t}	INVD _{i,t}	APD _{i,t}	CCC _{i,t}	FS _{i,t}	SG _{i,t}	CR _{i,t}	LEV _{i,t}	Ln(sale) _{i,t}
ROA _{i,t}	1										
TQ _{i,t}	0.552	1									
ARD _{i,t}	-0.237	0.216	1								
INVD _{i,t}	-0.230	0.132	0.175	1							
APD _{i,t}	-0.253	0.151	0.281	0.262	1						
CCC _{i,t}	-0.231	0.180	0.660	0.772	0.006	1					
FS _{i,t}	-0.110	0.066	-0.171	0.193	0.007	0.035	1				
SG _{i,t}	0.106	0.034	-0.165	-0.058	-0.075	-0.120	0.096	1			
CR _{i,t}	0.176	0.089	0.048	0.081	-0.120	0.136	0.225	0.052	1		
LEV _{i,t}	-0.450	0.198	-0.116	0.215	0.111	0.049	0.330	0.046	0.419	1	
Ln(Sale) _{i,t}	0	0.186	-0.310	0.036	-0.025	-0.159	0.808	0.151	0.269	0.335	1

(Source: Collected and processed by author)

Table 3 shows the correlation between the variables in the model. The ROA is negatively impacted by independent variables including the ARD, the INVD, the APD, and the CCC, respectively, 0.237, 0.23, 0.253, and 0.231. TQ is also negatively impacted by the CCC, the ARD, the INVD, and the APD, respectively, 0.18, 0.216, 0.132, and 0.151. This suggests that in order to increase the ROA and the TQ, enterprises need to reduce the collection time, inventory time and payment time.

Control variables, FS and LEV, are negatively correlated with the ROA but SG and CR are positively correlated with ROA. TQ has the positively impact by FS, SG, CR and Sale size (Ln(Sale)) but it has the negatively impact by LEV.

The results of the correlation analysis are largely consistent with the theory and results of previous studies.

3.1.3. Regression statistic analysis

The study is performed the regression statistic analysis on the panel data using Eviews 8 software by three models: OLS, FEM or REM based on results of Hausman test, and GMM.

In relationship between the ROA and other variables, the results of Hausman test have P-value > 5%, thus accepting the null hypothesis and the selected REM model. In relationship between the TQ and other variables, the results of Hausman test have P-value < 5%, thus rejecting the null hypothesis and the selected FEM model. Results of regression statistic analysis are shown in Table 4, 5, 6, 7, 8, 9, 10, and 11 as the followings:

Table 4: The relationship between the ARD and the ROA (Model 1a)

Dependent variables ROA	OLS	Hausman test		GMM
		FEM	REM	
<i>Independent variables</i>				
C	0.0452*		0.0399	0.0569
ARD	-0.0001***		-0.00003**	-0.0001***
FS	-0.0058***		-0.0016	-0.0051***
SG	0.0048		0.0070***	0.0033
CR	0.0001		0.0006	0.0001
LEV	-0.0589***		-0.0412***	-0.0573***
Ln(sale)	0.0068***		-0.0022	0.0056***
R2	0.3239		0.1524	0.3435
Total observations	352		352	308
Hausman test (P-value)			0.0603	
Instrument specification				ROA(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 4 presents the relationship between the ARD and the ROA by three models: OLS, REM and GMM. The results show the significant and negative effects of the ROA with the ARD, the FS and LEV. Meanwhile, it has the significant and positive impacts between the ROA and the Sale size (Ln(sale)). However, there are no relationship of the ROA with the SG and the CR.

The results of three models: OLS, REM and GMM show that the ARD have respectively the statistically significant and opposite effect with a coefficient of 0.001(Significance at 1% level), 0.00003(Significance at 5% level) and 0.0001 (Significance at 1% level). This shows that the higher the profitability of a business, the shorter the time to collect from customers.

The control variables FS has the significant and opposite effects at 1% significance level on the ROA in OLS and GMM method, respectively, 0.0058 and 0.0051. The LEV has

also the significant and opposite effects at 1% significance level on the ROA in OLS, REM and GMM method, respectively, 0.0589, 0.0412 and 0.0573. But the Sale size (Ln(sale)) has the significance and positive effects at 1% significance level on the ROA in OLS and GMM method, respectively, 0.0068 and 0.0056.

Table 5: The relationship between the ARD and the TQ (Model 1b)

Dependent variables TQ	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	-0.1084	-3.8659***		-0.4038
ARD	-0.0008***	-0.0005		-0.0009***
FS	-0.0632*	0.0098		-0.0508
SG	-0.0211	-0.0757		-0.0196
CR	0.0088	-0.0097		0.0100
LEV	-0.5147***	-0.2976		-0.5620***
Ln(sale)	0.1325***	0.2383***		0.1352***
R2	0.1503	0.6069		0.1630
Observations	352	352		308
Hausman test (P-value)	-	0.0074		
Instrument specification				TQ(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 5 presents the relationship between the ARD and the TQ by three models: OLS, FEM and GMM. The results show the significant and negative effects of the TQ with the ARD, and the LEV. Meanwhile, it has the significant and positive impacts between the TQ and the Sale size (Ln(sale)). However, there are no relationship of the ROA with the FS, the SG and the CR.

The results of two models: OLS and GMM show that the ARD have respectively the statistically significant and opposite effect with a coefficient of 0.008(Significance at 1% level), and 0.0009 (Significance at 1% level). This shows that the higher the profitability of a business, the shorter the time to collect from customers.

The control variables - Sale size has the significant and positive effects at 1% significance level on the TQ in OLS, FEM and GMM models, respectively, 0.1325, 0.2383, and 0.1352. But the LEV has the significant and opposite effects at 1% significance level on the TQ in OLS and GMM models, respectively, 0.5147, and 0.5620.

Table 6: The relationship between the INVD and the ROA (Model 2a)

Dependent Variables ROA	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	0.0118		0.0295	0.0141
INVD	-0.00002*		0.00002	-0.00003**
FS	-0.0061***		-0.0028	-0.0052***
SG	0.0063*		0.0082***	0.0045
CR	0.0005		0.0005	0.0005
LEV	-0.0545***		-0.0428***	-0.0526***
Ln(Sale)	0.0085***		0.0039	0.0074***
R2	0.2859		0.1370	0.2982
Observations	352		352	308
Hausman test (P-value)			0.19190	
Instrument specification				ROA(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 6 presents the relationship between the INVD and the ROA by three models: OLS, REM and GMM. The results show the significant and negative effects of the ROA with the INVD, the FS and LEV. Meanwhile, it has the significant and positive impacts between the ROA and the Sale size (Ln(sale)). However, there is no relationship of the ROA with the CR.

The INVD and the ROA have the statistically significant and negative effect by OLS and GMM models, respectively, with a coefficient of 0.00002(Significance at 10% level) and 0.00003 (Significance at 5% level). This shows that the higher the profitability of a business, the shorter the time to buy and sell the inventory.

The relationship between the ROA and other variables seems to be similar to models 1a, in models 2a, the impacts of the FS on the ROA, the LEV on the ROA, and Sale size on the ROA is same with model 1a. The SG has the positive impacts on the ROA in OLS and REM models, respectively, 0.0063 and 0.0082.

Table 7: The relationship between the INVD and the TQ (Model 2b)

Dependent Variables TQ	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	-0.5023	-3.8676***		-0.8652*
INVD	-0.0003	-0.0004		-0.0003
FS	-0.0663*	0.0085		-0.0527
SG	-0.0033	-0.0645		-0.0065
CR	0.0130	-0.0032		0.0143
LEV	-0.4625***	-0.3010		-0.5153***
Ln(sale)	0.1521***	0.2392***		0.1566***
R2	0.1308	0.6054		0.1448
Observations	352	352		308
Hausman test (P-value)		0.04290		
Instrument specification				TQ(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 7 presents the relationship between the INVD and the TQ by three models: OLS, FEM and GMM. The results show the significant effects of the ROA with the LEV and the Sale size. However, there is no relationship of the ROA with the INVD, the FS, the SG and the CR.

The control variables - Sale size has the significant and positive effects at 1% significance level on the TQ in OLS, FEM and GMM models, respectively, 0.1521, 0.2392, and 0.1566. But the LEV has the significant and negative effects at 1% significance level on the TQ in OLS and GMM models, respectively, 0.4625, and 0.5153.

Table 8: The relationship between the APD and the ROA (Model 3a)

Dependent Variables ROA	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	0.0242		0.0263	0.0272
APD	-0.0001***		-0.0001***	-0.0001***
FS	-0.0068***		-0.0018	-0.0058***
SG	0.0057*		0.0072***	0.0038
CR	0.0001		0.0003	0.0001
LEV	-0.0556***		-0.0406***	-0.0538***
Ln(Sale)	0.0087***		0.0032	0.0076***
R2	0.3104		0.1642	0.3179
Observations	352		352	308
Hausman test (P-value)			0.3031	
Instrument specification				ROA(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 8 presents the relationship between the APD and the ROA by three models: OLS, REM and GMM. The results show the significant and negative effects of the ROA with the ARD, the FS and LEV. Meanwhile, it has the significant and positive impacts between the ROA and the Sale size (Ln(sale)). However, there is no relationship of the ROA with the CR.

The results of both three models: OLS, REM and GMM show that the APD have the statistically significant and opposite effect with a coefficient of 0.001 (Significance at 1% level). This shows that the higher the profitability of a business, the shorter the time to pay for the suppliers.

The control variables FS has the significant and opposite effects at 1% significance level on the ROA in OLS and GMM models, respectively, 0.0068 and 0.0058. The SG has the opposite effects on the ROA in OLS and FEM models, respectively, 0.0057 (significance at 10% level) and 0.0072 (significance at 1% level). The LEV has also the significant and opposite effects at 1% significance level on the ROA in OLS, REM and GMM models, respectively, 0.0556, 0.0406 and 0.0538. But the Sale size (Ln(sale)) has the positive effects at 1% significance level on the ROA in OLS and GMM models, respectively, 0.0087 and 0.0076.

Table 9: The relationship between the APD and the TQ (Model 3b)

Dependent Variables TQ	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	-0.3704	-4.0827		-0.6611
APD	-0.0009**	-0.0004		-0.0019**
FS	-0.0755**	-0.0068		-0.0576
SG	-0.0081	-0.0653		-0.0298
CR	0.0084	-0.0117		0.0065
LEV	-0.4802***	-0.3381*		-0.5856***
Ln(sale)	0.1560***	0.2660***		0.1574***
R2	0.1377	0.6047		0.1589
Observations	352	352		264
Hausman test (P-value)		0.0076		
Instrument specification				TQ(-2); APD(-2)

Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.

(Source: Collected and processed by author)

Table 9 presents the relationship between the APD and the TQ by three models: OLS, FEM and GMM. The results show the significant and negative effects of the TQ with the

APD, and the LEV. Meanwhile, it has the significant and positive impacts between the TQ and the Sale size (Ln(sale)). However, there are no relationship of the ROA with the SG and the CR.

The results of two models: OLS and GMM show that the APD have respectively the statistically significant and opposite effect at 5% significance level with a coefficient of 0.0009 and 0.0019. This shows that the higher the profitability of a business, the shorter the time to pay for the suppliers.

The control variables - Sale size has the significant and positive effects at 1% significance level on the TQ in OLS, FEM and GMM models, respectively, 0.1560, 0.2660, and 0.1574. But the LEV has the significant and negative effects on the TQ in OLS, FEM and GMM models, respectively, 0.4802 (Significance at 1% level), 0.3381 (Significance at 10% level), and 0.5856 (Significance at 1% level).

Table 10: The relationship between the CCC and the ROA (Model 4a)

Dependent Variables ROA	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	0.0199		0.0280	0.0257
CCC	-0.00003***		0.000002	-0.00003***
FS	-0.0056***		-0.0028	-0.0046**
SG	0.0058*		0.0082***	0.0041
CR	0.0005		0.0005	0.0006
LEV	-0.0552		-0.0431	-0.0532
Ln(Sale)	0.0077		0.0040	0.0064***
R2	0.2953		0.1389	0.3134
Observations	352		352.0000	308
Hausman test (P-value)			0.0674	
Instrument specification				ROA(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 10 presents the relationship between the CCC and the ROA by three models: OLS, REM and GMM. The results show the significant and negative effects of the ROA with the CCC, the FS. However, there are no relationship of the ROA with the LEV and the CR.

The results of two models: OLS and GMM show that the CCC has respectively the statistically significant and negative effect at 1% significance level with a coefficient of 0.00003 and 0.00003. This shows that the shorter the time of the CCC, the higher the profitability of a business.

The control variables FS has the negative effects on the ROA in OLS and GMM method, respectively, 0.0056 (significance at 1% level) and 0.0046 (significance at 5% level). The SG has also the negative effects at on the ROA in only OLS and REM method, respectively, 0.0058 (significance at 10% level) and 0.0082 (significance at 1% level). But the Sale size (Ln(sale)) has the positive effects at 1% significance level on the ROA in GMM method with the coefficient of 0.0064.

Table 11: The relationship between the CCC and the TQ (Model 4b)

Dependent Variables TQ	OLS	Hausman test		GMM
		FEM	REM	
Independent variables				
C	-0.4026	-3.7636***		-0.7474
CCC	-0.0003**	-0.0003		-0.0004*
FS	-0.0582*	0.0125		-0.0454
SG	-0.0102	-0.0687		-0.0111
CR	0.0137	-0.0032		0.0150
LEV	-0.4683	-0.2887		-0.5183
Ln(sale)	0.1400	0.2299***		0.0144***
R2	0.1376	0.6062		0.3134
Observations	352	352		308
Hausman test (P-value)		0.0410		
Instrument specification				TQ(-1)

*Note: *, **, *** indicated respectively the significance at 10%, 5% and 1% levels.*

(Source: Collected and processed by author)

Table 11 presents the relationship between the CCC and the TQ by three models: OLS, FEM and GMM. The results show the negative effects of the TQ with the CCC. Meanwhile, it has the significant and positive impacts between the TQ and the Sale size (Ln(sale)). However, there are no relationship of the ROA with the SG, the CR and the LEV.

The results of two models: OLS and GMM show that the CCC have respectively the statistically significant and opposite effect with a coefficient of 0.0003 (significance at 5 level) and 0.0004 (significance at 10% level). This shows that the shorter the time of the CCC, the higher the profitability of a business.

The control variables - Sale size has the significant and positive effects at 1% significance level on the TQ in FEM and GMM models, respectively, 0.2299, and 0.0144.

3.2. Discussion

This study examines how the WCM influences operating profitability. Overall, this study reveals that WCM has a significant and negative relationship with firm profitability including book value (the ROA) and market value (the TQ).

Firstly, the CCC has the negative and significant impact with the firm profitability (including ROA and TQ). It means that the reduction of the CCC help the profitability of company to increase. Then the CCC is shortened at the maximum level without affecting the production and business activities that helping the company has the funds for the next business cycle, reduce external funding, decrease costs and risks for the company, so can increase the firm profitability.

Secondly, the ARD also has the negative and significant impact with the firm profitability (including ROA and TQ). This means that the company collects money from customer as soon as possible to increase profitability. This result is also the most consistent with the theory and previous studies that a tightening credit policy will increase the profitability of the business as long as the policy does not affect sales.

Thirdly, the INVD only has the negative and significant impact with the ROA. This shows that the longer the storing time of inventory, the lower the profitability so it is difficult for the company to compete with competitors in the market. However, corporate executives should also keep their inventory at a sufficient level. That means not "too much" or "too little". Because inadequate inventory will reduce sales, it can also lead to customers switching to competitors when their needs are not met. Therefore, to increase the firm profitability from inventories, companies need to develop effective sales policies to shorten the storing time of inventory rather than reduce the quantity of inventories.

Fourthly, the APD also has the negative and significant impact with the firm profitability (including ROA and TQ). This means that the company pays for suppliers as soon as possible to increase profitability. This result is inconsistent with the theory because in theory, the company should maintain the payment time as high as possible as this is a non-interest-bearing loan that the company takes from the supplier. However, it is consistent with previous studies. In practice, due to the high levels of the payment time to suppliers, companies are struggling to raise capital to maintain production and lose a purchase discounts. So increasing the payment time to supplier will reduce the firm profitability.

Lastly, the sale size has the positive and significant impact with the firm profitability. It reveals that the company with the high sale size will contribute in increasing the profitability. Not only that, the LEV has the negative and significant impact with the firm profitability. This result shows that many of the firms that are in the high debt proportion are struggling to reduce their profitability.

These findings are consistent with results of previous study such as *Bui Ngoc Toan (2014)*; *Gul et al. (2013)*, *Gamze et al. (2012)*, *Lazaridis and Tryfonidis (2006)*... which suggested that an optimal WCM exists for firm performance. However, these studies only

used the book value of profitability as the dependent variables. With *Gamze et al. (2012)* works, group of authors used TQ as market value of profitability and the results for TQ were insignificant. But the results of this study for TQ are significant.

4. Conclusion and Policy Implications

Within the framework of this paper, eight models are implemented to test the impacts of the WCM on the firm profitability of 44 industrial enterprises listed on the HOSE in the period from 2010 to 2017. The study applies the regression methods including: OLS, Hausman test, and GMM models to provide the most robust results. Research results show the impacts of the WCM on firm profitability including book value (the ROA) and market value (the TQ). In addition, the investigation also finds the impact of the LEV, the Sale size on the ROA and the TQ. Creating a reasonable working capital policy will enable businesses to increase the profitability and create value for investors. It means that the optimization of the CCC, which includes (1) shortening the time to collect from customers, (2) accelerate inventory flow and (3) reduce the payment time to suppliers. As a result, it positively influences the financial position of the company, helping the company easier to choose the right financing method.

With the results of this study, the paper proposes some policy implication to improve the efficiency of WCM in order to increase the profitability of industrial firms as follows:

Firstly, Building and developing some cash forecasting models. Cash flow is often unstable; companies need to use forecasting models to eliminate that instability and balance the short term - account receivables with current liabilities. It means that the manager needs to predict the cash inflow and cash outflow that based on the characteristic of business period, seasonal and the business development plan in each period. So, forecasting the demand for WCM in general and the demand for cash in particular is very important, because it will help businesses proactively in the process of production and business, maintain the solvency, take advantage timely opportunities as well as reduced opportunity costs due to excessive cash reserves.

Secondly, Improving the management of account receivables. The company should strengthen the financial assessment of customers before making the decision to sell on credit. This assessment is based on the business performance of customers over time. The company should concern the budget and solvency of customers, and decide reasonably the commercial credit policy. For businesses that are not recovering their debt effectively, investing in risk mitigation measures is a necessity. Effective debt recovery measures as well as effective risk mitigation measures are now being applied such as the use of professional debt recovery agents, sale discounts or credit insurance. In addition, for companies with large sales networks and large accounts receivable, complex debt management and more difficult, they can invest in debt management software that help the debt reduction fatly, accurately, effectively.

Thirdly, Improving effectively the use of inventory inflow and outflow. The company needs to keep the inventory balance at the optimal level. It is very important to calculate the precise

ordering time. Timely ordering will result in decreasing the storing costs and delivering to your customers in a timely manner, guaranteeing the business credibility. It must be calculated that the time of receipt and delivery time is in line with the time of pickup of customers.

Moreover, in the context of foreign companies with modern management platform is entering the Vietnam market, the business of our country must further improve the inventory management system as well as supply chain management to keeping up with business demands is essential. In the world, many foreign businesses apply the advanced inventory management systems such as Just In Time (JIT), Supply Chain Management (SCM) or Enterprise Resource Planning (ERP). The successful application of this system not only helps companies reduce a significant amount of inventory, but also reduces the inventory storing costs, improves operational efficiency and reduces product delivery times. This helps to significantly improve revenue and cash flow of the business in order to improve the firm profitability.

Lastly, Managing effectively the current liabilities. The company should often check and reconcile the current liabilities with the solvency to actively pay at maturity date. Moreover, the company needs to choose the suitable, safe and effective payment method.

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Measuring the Performance on Stakeholders' Perspective in Small and Medium-Sized Enterprises in the Construction Industry

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Abstract

In Vietnam, the study and application of performance measurement (PM) of construction project is still in the initial stage especially for small and medium-sized enterprises (SMEs). These enterprises have adopted traditional PM that focuses solely on financial performance measures (PMs). Whereas, financial PMs are no longer adequate to evaluate organisations' performance in today's rapid changing business environment. To overcome the defects of the traditional PM system and introduce balanced PMs on the perspective of stakeholder, this study has chosen Balanced Scorecard (BSC) as a theoretical framework to form the PM system of small and medium-sized construction enterprises in Vietnam. Moreover, this study used Fuzzy-Delphi Analytic Hierarchy Process (FD-AHP) for assigning the weight for each Key performance indicators (KPIs) defined.

Finding out this study introduced accurate and systematic PM system with the success factors (SFs), (KPIs) based on BSC for stakeholder's perspective that construction SMEs in Vietnam can adopt to assist managers in having a complete point view of the organization, and providing them consistent feedback for controlling goals and evaluating the performance.

Keywords: *Analytic hierarchy process; Balanced scorecard construction; Measuring performance; Stakeholders.*

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1. Introduction

In construction enterprises, as several enterprises and other groups defined as stakeholders usually participate in the project contemporarily, PM is complicated. Therefore, measuring the performance of stakeholders' perspective is important to determine their

contributions to the project's overall results as well as direct and good communication with them. In addition, the performance of the stakeholders in project is the basis of the awareness of the relationship among them, so as to make use of the relations to establish alliance and to improve the possibility of project's success.

In Vietnam, the study and application of PM on stakeholders' perspective in a construction project is still in the initial stage, especially for SMEs. These enterprises have adopted traditional PM that focuses solely on financial PMs. Whereas financial PMs are no longer adequate to evaluate organisations' performance in today's rapid changing business environment.

The purpose of this study is to develop PM on stakeholders' perspective in SMEs in the construction industry and provide another way to choose KPIs in PMs system according to the scale and characteristic of organizations.

The BSC is PM's typical model that intends to provide a holistic view of an organization's performance by considering different performance perspectives for objectives and KPIs to ensure the alignment between strategies and operations. The BSC is designed to fix a balance between financial and non-financial performance indicators, between the interests of internal and external stakeholders, and between presenting the past performance and predicting the future performance. However, Neely (2002) argues that the most difficult problem of BSC is that it lacks several important interest groups in its structure such as suppliers, co-operation partners ... that called stakeholder.

Based on the literature review, this research uses Kelly Jo Kime (2015)'s expanded BSC as a theoretical framework and Christopher et al (2015)'s research to form KPIs for measuring stakeholders' satisfactions and contributions to the project's overall results. The literature suggests that FD-AHP can be used to assign the weight for each KPIs so that organizations can choose the most relevant.

2. Literature Review, Conceptual, Theoretical Framework And Research Methodology

2.2. Literature review

In many previous researches the performance of construction projects had been studied. Traditionally, the construction performance was focused mainly on project's performance. Moreover, the projects and contractors' performance were assessed on the extent to the client's objectives such as cost, time and quality achieved. Although three measures provide an indicator of the success or failure of a project they do not, in isolation, provide a balanced view of the project's performance, and it is apparent that their implementation in construction projects is just in the end of the project. Kagioglou et al, (2001), as in other industries, the project of PM primarily focuses on traditional bottom-line PMs such as efficiency, return on capital employed, and profitability which have been defined as the retrospective one before. Hence, they fail to assess the true performance of construction projects and organizations. The result obtained from such a financial PM system also provides the limited use for the long-term strategic construction business planning.

Therefore, three measures can only be classified as “lagging” other than “leading” indicators of the performance. This research also supports this argument, which indicates that the performance relates to the cost, quality and schedule influenced by other factors such as the health and safety, productivity, performance relating to the environment, and employees’ satisfaction.

Christopher et al (2015) identified the SFs and KPIs which are strongly relevant to the construction industry in the developing countries. The CFs is named as project-related, client-related, consultant-related, contractor-related, supplying chain-related and external environment-related factors. The KPIs are named as the time, cost, quality, safety, minimum site disputes and environmental impact. These KPIs and CSFs have formed the theoretical framework for the performance evaluation of construction projects. However, the theoretical framework of the performance evaluation based on the literature review, preliminary pilot survey and researchers own subjective judgment. As a result, the CFs and KPIs have not been evaluated their suitability to measure project performance in practice.

In the majority of projects, the diversity of stakeholders (client, consultant, contractor, supplying chain and external environment...) will produce a conflict of interests and have a positive or negative influence on the individuals, their organizations and any successful projects. Fan Yang (2016), construction project performance refers to, in essence, optimal efficiency of overall project construction on the basis of satisfaction of core stakeholders. Therefore, the stakeholders from any projects should be managed by an organization with the outlook to minimize the negative impacts and make sure that there are no obstacles but a successful project.

Goodenough et al (2018), only 10 KPIs were found to be a key for evaluating stakeholders’ management performance, namely; communication effectiveness, stakeholder support of project, conflict mitigation, trust and respect in relationship, smooth project facilitation, uncertainty and risk mitigation, management and response, cost savings, better service providing, and sustainable lifecycle performance. However, most of these KPIs are not quantified and only measure the satisfaction of stakeholders but not their contribution to the outcome of the project.

It is very important to meet stakeholders’ satisfaction so as to assess the success of construction projects. However, there is a conflict of interests among stakeholders in the overall benefits of the project, especially for the economic benefits. As a result, the cost of project will be raised and the profit of a business will reduce. The stakeholders’ satisfaction is used as a foundation for promoting stakeholders’ engagement rather than evaluating their contributions to the outcome of project. While the stakeholder’s contribution plays an important role for determining the core stakeholders and defining the strategy of the relationship with them. To measure the level of their contribution, KPIs should be designed consistently to measure the performance of a project, such as the time, cost, quality, safety, minimum site disputes and environmental impact.

2.2. Conceptual framework

• Definition of stakeholder

Project Management Institute (2001) defines the stakeholders as: “individuals and organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion.”

According to different influence relations of stakeholders and projects, construction project stakeholders could be divided into “primary stakeholders” and “secondary stakeholders”. The primary stakeholders refer to those groups or individuals that have legal contract relations with the project, including proprietor, contractor, designer, supplier, supervisor, as well as financial institutions that provide loaning fund to projects; secondary stakeholders refer to those groups or individuals that have intangible contracts with the projects without formally participating in project transaction, receive project influence or influence project, including government’s department, environmental protection department and social public, etc. (Fan Yang (2016). Moreover, during the different running stages of the construction project, project stakeholders are not totally the same: decision-making stage includes government and social public; construction stage includes project proprietors and professional institutions (contractors and consultancies); execution stage includes government, social public and surrounding residents. Core stakeholders public projects are more complicated than private ones, that’s why different construction stages are made up of different core stakeholders.

• Definition of performance

Moullin (2003) defines an organization’s performance as “how well the organization is managed” and “the value the organization delivers for customers and other stakeholders”. Performance is seen as the driving force of profitability, improved service delivery or obtaining the best results in important areas of organizational activities. Same idea, Neely and Adams, (2002): “Effectiveness refers to the extent to which stakeholder requirements are met, while efficiency is a measure of how economically the firm’s resources are utilized when providing a given level of stakeholders’ satisfaction”. To attain superior relative-performance, an organization must achieve its expected objective with greater efficiency and effectiveness than its competitors (Neely 1998). The performance can be considered as an evaluation of how well individuals, group of individuals, organizations or systems have done in pursuit of a specific objective. These objectives vary significantly, but from an organizational perspective, they generally resolve the issues relating to the core stakeholders’ satisfaction, notably customers, employees, shareholders, various suppliers, government and society as a whole.

In the construction industry, performance should be approached from the two perspectives: the business performance and the project performance. In many cases, references to the performance and the research in this genre have been focused on the project performance [Soetanto et al, (2001)]. Primarily, this can be linked to the characteristics of

the industry that each project can represent a major part of a contractor's annual turnover, and can be the final decision of a construction company's business performance.

In this study, the performance is defined as the extent to achieving proposed objectives, using the resources economically.

• **Definition of performance measurement**

Until now, a variety of researches have been conducted on the aspects of PM while the definition of PM is still debated. Neely (1998) defines PM as "the process of quantifying the efficiency and effectiveness of the past actions through acquisition, collation, sorting, analysis, interpretation and dissemination of appropriate data". Neely's definition describes the process and does not give much guidance to organizations about what it is essentially all about. Moullin (2003), PM is evaluating how well organizations are managed and the value they deliver to their customers and other stakeholders. This definition clearly shows the purpose of PM and emphasizes the assessment of the value given to its various stakeholders by an organization and the way the organization is managed. Hronec (1993) defines PMs as the vital signs of the organization, which "quantify how well the activities within a process or the outputs of a process achieve a specified goal". PM helps to understand, manage and improve what organizations do. Effective PMs can let us know how well we are performing, if we meet our goals, if our customers are satisfied, if our processes are in statistical control, and if and where improvements are necessary.

Organizational PM can be classified as the traditional PM, contemporary PM and PMA. The traditional PM focuses solely on the financial PMs such as the profit, cash flow and return on investment. Many researchers and practitioners have criticized the exclusive use of the financial PMs due to their shortcomings. Financial PMs are no longer adequate to evaluate organizations' performance in today's rapid changing business environment. They are delaying indicators in which they provide information of the results of management actions already taken.

To overcome the defects of the traditional PM system, firstly introduced by Kaplan and Norton (1992), it has been widely adopted by many companies and viewed by the researchers as a strategic management tool in developing a PM system.

2.3. Theoretical framework

The BSC is defined as a strategic management tool that helps to measure, monitor, and communicate a strategic plan as well as goals throughout an organization in a way understood by everyone [(Lawson et al. (2008)].

The BSC encourages organizations to directly derive (strategic) long-term objectives from the overall strategy and to link them to (operational) short-term targets. Concrete PMs or indicators should periodically measure the objectives. Furthermore, the BSC assumes a causal or logical relationship between the four performance perspectives. An increase in the competences of employees (i.e., the performance related to "learning and growth") is expected to positively affect the quality of products and services (i.e., the internal business

process performance), which in turn will lead to improved customer perceptions (i.e., customer performance). These results for the previous perspectives will then contribute to the financial performance to ultimately realize the organization’s strategy, mission and vision. Hence, the indicators belonging to the financial and customer perspectives are assumed to measure the performance outcomes, whereas indicators from the perspectives of internal business processes and “learning and growth” are considered as typical performance drivers (Kaplan and Norton, 2004). Pineno, (2002) argues that the BSC offers to managers to identify performance indicators and predict the establishment of corporate wealth and health by using the BSC. The BSC controls the strategy within the organization and uncovers asset and previously unknown information through the translation of strategy that is fast and scalable.

However, Kaplan’s and Norton’s (1992), the BSC model was an important addition to strategic management theory and served as a general guideline to help organizations reach their strategic goals. Nevertheless, the BSC model ignores lots of organization’s stakeholders. The BSC presently considers the internal measures as drivers of outcomes, the external financial measures. The internal perspectives of the BSC address the interests of employees and customers; the external ones address those of the shareholders. However, there are other stakeholders in the organization that the BSC fails to address the suppliers and the social community which the organization operates. Atkinson et al, (1997), organizations need to be accountable not only to their customers, but to everyone and everything that has a stake in, or can have an impact of an organization’s performance. Stakeholders include the customers, owners, employees, suppliers, and the community. Satisfying customers is not good enough to assure the long-run sustainability. Without the support from all the stakeholders, organizations will find it more difficult to achieve their objectives. Thus, the customer perspective needs to include all the stakeholders. Hence, it is extremely necessary to expand the BSC including the sustainability factors.

Kelly Jo Kime, (2015) explored the current structure, the framework of the BSC and its evolution to provide organizations with another way to link their goals and strategies, and ensures that all the core stakeholders are being included within their strategic planning process. Kelly Jo Kime (2015) expanded the customer perspective into a triple bottom line stakeholder perspectives which are customers, owners, employees, suppliers, the community, and the environment. On the basis of the stakeholder perspective, the new BSC perspectives in the proposed cause-effect order are introduced as the Figure 1.

Figure 1: New BSC Causal Chain Order [Kelly Jo Kime (2015)]



According to the new BSC causal chain order, what is important to the organization’s key stakeholders also determines which internal process factors are critical to control so that the stakeholder value is realized. Identifying the critical success factors concerning an

organization's internal process then leads to the realization of which activities that needs to continuously improve. Achieving the stakeholder, internal process, and continuous improvement perspective goals should lead to improved financial performance in the future. Therefore, the stakeholder, internal process, and continuous improvement critical success factors and their measures are leading indicators of value, versus the financial perspective goals as lagging indicators of value. Thus, the financial perspective measures should be linked to the goals within the other perspectives. The financial perspective measures should also be more specific in order to support other perspectives' initiatives. This opinion opposed to the current generalized measures relating to the profitability (ROI, gross profit, and operating income). By changing the financial perspective goals from the general financial PMs to specific measures, the BSC can specifically link the financial perspective to the other perspectives. If all the perspectives, measures, and objectives are linked to each other within the BSC, which can be readily seen in the BSC, the need for a supporting strategy map no longer exists.

Because of the superiority of Kelly Jo Kime (2015)'s BSC model, this study will use it as the theoretical framework to introduce the function of the project PM on stakeholders' perspective in SMEs in the construction industry. In addition, Kelly Jo Kime (2015) 's BSC model is also consistent with the conclusion drawn from overview of the PM of construction projects and on stakeholder perspectives.

2.4. Research methodology

In this study, the specific methods used include literature review, in-depth interview, a questionnaire survey and testing hypothesis.

For the purpose of identifying the SFs and KPIs, the benefit was taken from Kelly Jo Kime (2015) 's BSC model. Based on the results of the literature review, in-depth interview and questionnaire survey, this study proposes the classified KPIs to measure the performance of stakeholders in Vietnam's SMEs construction enterprises.

In order to test the suitability of the KPIs, hypothesis for the importance of KPIs is proposed. Data for testing is collected from the questionnaire survey of 45 SMEs in construction industry in Vietnam. A questionnaire survey is an effective and practical technique to find out the effectiveness of each measure and indicator regarding to Vietnam SMEs construction enterprises. This involved the use of a five-point Likert scale (1- unimportant to 5- most important). A total of 200 questionnaires were sent to senior professionals and managers in Vietnam's small and medium-sized construction enterprises (including 25 participants in in-depth interviews) through e-mail social networks and face-to-face meetings. The number of received responses was 97 responses occupying about 48.5% of the total requests.

The hypotheses for the importance of KPIs on stakeholder are divided into the following groups (Because of the nature of small and medium-sized enterprises in Vietnam,

the owners are also managers; measuring the performance on these two aspects can use the same KPIs):

H1: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the cost of a project.

H2: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the duration of a project

H3: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the quality of a project.

H4: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the safety of a project.

H5: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the minimum site disputes of a project.

H6: There is a positive relationship among the perspectives (customers, owners/managers, employees, community, environment) and the environmental impact of a project.

The validity of the hypotheses will be proved through using SPSS program by doing one sample t-test with comparative value $t = 3$.

The testing results of these hypotheses will form KPIs on stakeholder for SME in Vietnam's construction industry shown in the table 1, 2, 3, 4, 5 & 6.

3. Results And Discussions

The data achieved in the survey were put in the SPSS program and the results in the tables below have been gained. As it has been shown in all the tables, almost all the variables' significant levels are less than (0.01), it means that most of variables' influenced levels are significantly higher than the average. It also indicates the validity that most of the KPIs are significantly important or the most important to measure the performance of stakeholders in Vietnam's SMEs construction enterprises. Based on testing results (table 1, 2, 3, 4, 5, 6 in the appendices), this research has developed a system of KPIs for Vietnam's SMEs construction enterprises that is shown in the table 7. The KPIs mentioned in the table 7 are variables that their significant level is less than 0.01.

Although the KPIs in the table 1 are significant for measuring the performance, the different projects have different aims, so the important level of the KPIs in each project varies. This study uses FD-AHP for assigning the weight for each KPIs defined. The analysis of the KPI weights shows a systematic PM system by quantifying the evaluation results of qualitative indicators that are compatible with the characteristics of the construction industry.

The application of analytic hierarchy process for modeling could be roughly divided and carried out into three steps as below:

- Establish hierarchical structural model: The hierarchical structure is the key to simplify the complexity through the hierarchical analysis. The corresponding relation is established among all the levels by disintegrating the objectives of the whole performance appraisals of the defined project.

- Set up all judgment matrixes of all the levels: After the establishment of the hierarchical structure, the schemes can be compared in the group 2 by adopting the methods of the relevant measurement to the hierarchical analysis 1 (The former's importance is the same as the latter) -9 (The former is much more important than the latter). The scale is the most common standard quantitative method. Decision makers tend to choose the reciprocity 1 -9 scale judgment matrix as the judgment means.

- The hierarchical ranking and the consistency test: The aim of making the hierarchical ranking and scoring according to 1 -9 scales is, as for certain objective of the last hierarchy, to make sure of the order of the important levels among reactivity indexes of this hierarchy and the weighing value of the order. There are mainly two issues for the realization forms of the hierarchical ranking, including the feature solution and vector that are used to judge the knowledge of the array. As for the fixed judgment matrix, its calculation should be met the feature solution and vector of the equation;

$$B = \lambda_{\max} L$$

λ_{\max} is the biggest feature solution in equation B.

L is the normalized feature vector corresponding to the knowledge of array. The weight L_i of L is the weighing value corresponding to the elements of the single order. While making judgment that the matrix B is completely consistent, $\lambda_{\max} = n$. In order to judge its consistency, it needs to calculate its consistency index.

$$CI = (\lambda_{\max} - n) / (n - 1)$$

In order to check whether the matrix satisfies the consistency or not, a comparison should be made between CI calculated and RI- the average random consistency index.

The weight of the index system constructed below will be calculated through analytic hierarchy process mentioned above. Firstly, multiple comparisons will be conducted on project decision-making performance, the project management performance and project application performance appraisal index in the criterion layer.

4. Conclusion And Policy Implications

The study shows that the stakeholders' satisfaction only provides the information to promote the stakeholder's engagement rather than evaluates the stakeholders' contribution to the project's outcome. Information of the stakeholder's contribution to the project and the business performance plays an important role for determining the core stakeholders and defining the strategy of relationship among them. Thus, the KPIs should measure the stakeholder's satisfactions and contributions. The satisfaction and contribution measurements should combine both quantitative and qualitative measures. KPIs are shown in the table 7 that help SMEs to measure the performance of the project, such as the time, cost, quality, safety, minimum site disputes and environmental impact. Most of these KPIs are quantified so that these enterprises can easily measure and accurately assess

contributions of stakeholders. However, the data sources for calculating these KPIs is very diverse, so cooperation between divisions in providing information is extremely important. The KPIs' results need to link into the organization's vision and mission statements. To achieve these objectives, the mission statement identifies the organization's core stakeholders, providing value propositions for each one. These core stakeholders become the focus for the Stakeholder perspective within the BSC.

However, development, implementation and ongoing utilization of a BSC, SMEs in construction industry should notice the following points:

- Embedding the BSC in a business performance management process that begins with business strategy creation starts the process of building strategic alignment within organization up front
 - Without a strong commitment and Leadership don't start work on BSC
 - Achieve BSC success through a dedication to focus.
 - Implement the BSC at all levels of the organization to maximize organizational alignment
 - Be sure to plan and budget for BSC communication activities.
 - Build integration into business performance management system until the BSC changes from just a measurement framework to the framework by which the business operates.

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APPENDICES

Table 1: The output analysis from SPSS for Hypothesis 1

One-Sample Test

COST	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
CC1	7.699	96	.000	.74227	.4889	.9956
CO1	6.708	96	.000	.69072	.4201	.9613
CO2	6.986	96	.000	.87629	.5466	1.2059
CO3	.984	96	.328	.11340	-.1896	.4164
CE1	7.867	96	.000	.80412	.5355	1.0727
CE2	2.110	96	.037	.23711	-.0582	.5324
CS1	7.276	96	.000	.81443	.5203	1.1086
CS2	.695	96	.489	.09278	-.2583	.4438
CS3	4.333	96	.000	.59794	.2353	.9606
CCO1	8.039	96	.000	.78351	.5274	1.0396
CCO2	8.013	96	.000	.93814	.6305	1.2458
CCO3	9.669	96	.000	1.07216	.7808	1.3636
CCO4	5.571	96	.000	.62887	.3322	.9255
CEV1	5.414	96	.000	.68041	.3501	1.0107
CEV2	11.166	96	.000	1.16495	.8908	1.4391
CEV3	-3.000	96	.003	-.34021	-.6383	-.0422

Table 2: The output analysis from SPSS for Hypothesis 2

One-Sample Test

TIME	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
TC1	8.562	96	.000	.86598	.6002	1.1318
TC2	-1.835	96	.070	-.23711	-.5768	.1025
TC3	-6.908	96	.000	-.89691	-1.2381	-.5557
TC4	2.415	96	.018	.30928	-.0273	.6458
TC5	5.471	96	.000	.60825	.3161	.9004
TO1	8.607	96	.000	.87629	.6087	1.1438
TO2	4.029	96	.000	.45361	.1577	.7495
TO3	-9.580	96	.000	-.88660	-1.1298	-.6434
TO4	2.636	96	.010	.37113	.0011	.7412
TO5	4.774	96	.000	.67010	.3012	1.0390
TE1	4.541	96	.000	.55670	.2345	.8789
TE2	3.930	96	.000	.45361	.1503	.7569
TE3	.557	96	.579	.07216	-.2685	.4129
TE4	7.454	96	.000	.88660	.5740	1.1992
TE5	11.155	96	.000	1.02062	.7802	1.2611
TS1	6.825	96	.000	.80412	.4945	1.1138
TS2	4.461	96	.000	.44330	.1822	.7044
TS3	-.078	96	.938	-.01031	-.3580	.3374
TS4	-1.380	96	.171	-.20619	-.5988	.1865
TCO1	-1.680	96	.096	-.23711	-.6081	.1339
TCO2	5.196	96	.000	.59794	.2955	.9004
TEV1	1.957	96	.053	.19588	-.0671	.4589
TEV2	7.276	96	.000	.81443	.5203	1.1086

Table 3: The output analysis from SPSS for Hypothesis 3

One-Sample Test

QUALITY	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
QC1	5.427	96	.000	.48454	.2499	.7192
QC2	8.118	96	.000	.87629	.5926	1.1600
QC3	3.268	96	.002	.38144	.0747	.6882
QO1	4.919	96	.000	.49485	.2305	.7592
QO2	7.833	96	.000	.81443	.5412	1.0877
QE1	7.531	96	.000	.76289	.4967	1.0291
QE2	10.749	96	.000	1.02062	.7711	1.2702
QE3	-4.099	96	.000	-.45361	-.7444	-.1628
QS1	-2.226	96	.028	-.26804	-.5845	.0484
QS2	-1.793	96	.076	-.22680	-.5592	.1056
QS3	3.910	96	.000	.56701	.1859	.9481
QCO1	5.794	96	.000	.70103	.3830	1.0190
QEV1	1.935	96	.056	.29897	-.1071	.7050

Table 4: The output analysis from SPSS for Hypothesis 4

One-Sample Test

SAFETY	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
SC1	1.012	96	.314	.13402	-.2140	.4820
SC2	-3.174	96	.002	-.36082	-.6596	-.0620
SO1	-2.587	96	.011	-.29897	-.6026	.0047
SO2	.984	96	.328	.11340	-.1896	.4164
SO3	3.412	96	.001	.46392	.1066	.8212
SO4	6.939	96	.000	.74227	.4611	1.0234
SE1	2.498	96	.014	.30928	-.0161	.6346
SE2	1.765	96	.081	.25773	-.1260	.6415
SE3	6.678	96	.000	.64948	.3939	.9051
SS1	4.548	96	.000	.49485	.2089	.7808
SS2	5.735	96	.000	.50515	.2737	.7366
SCO1	5.983	96	.000	.72165	.4047	1.0386
SCO2	6.069	96	.000	.71134	.4033	1.0194
SEV1	2.921	96	.004	.35052	.0352	.6659
SEV2	1.860	96	.066	.19588	-.0809	.4726
SEV3	5.173	96	.000	.68041	.3348	1.0261

Table 5: The output analysis from SPSS for Hypothesis 5
One-Sample Test

MINIMUM SITE DISPUTES	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
DC1	6.320	96	.000	.75258	.4396	1.0655
DC2	2.958	96	.004	.38144	.0425	.7204
DC3	5.803	96	.000	.71134	.3892	1.0335
DO1	-8.525	96	.000	-.65979	-.8632	-.4564
DO2	1.682	96	.096	.20619	-.1159	.5283
DE1	-1.215	96	.227	-.13402	-.4238	.1558
DE2	5.485	96	.000	.51546	.2685	.7624
DE3	7.326	96	.000	.82474	.5289	1.1206
DS1	3.240	96	.002	.28866	.0545	.5228
DS2	6.883	96	.000	.79381	.4907	1.0969
DCO1	4.833	96	.000	.45361	.2069	.7003
DCO2	6.684	96	.000	.75258	.4567	1.0485
DCO3	1.216	96	.227	.15464	-.1797	.4889
DEV1	5.583	96	.000	.50515	.2674	.7430
DEV2	-1.802	96	.075	-.21649	-.5323	.0993

Table 6: The output analysis from SPSS for Hypothesis 6
One-Sample Test

ENVIROMENTA L IMPACT	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
EC1	7.328	96	.000	.69072	.4430	.9384
EO1	2.358	96	.020	.37113	-.0425	.7847
EE1	7.438	96	.000	.83505	.5400	1.1301
EE2	1.307	96	.194	.20619	-.2085	.6209
EE3	-.903	96	.369	-.14433	-.5645	.2758
ES1	1.966	96	.052	.26804	-.0902	.6263
ES2	3.951	96	.000	.50515	.1691	.8412
ES3	-1.129	96	.262	-.13402	-.4460	.1780
ECO1	3.954	96	.000	.51546	.1729	.8580
EEV1	3.175	96	.002	.45361	.0782	.8290

Table 7: KPIs for stakeholders perspective in Vietnam small and medium construction enterprises

Stakeholders	KPIs					
	Cost	Time	Quality	Safety	minimum site disputes	environmental impact
Customers	CC1 Variace between actual cost allocated for the work in place, copleted to date and the contract value	TC1 On – time deliveries: Construction time = Practical completion date – Project commencement date.	QC1 Quality thresholds are show in the contract.		DC1 Number of conflicts with customers	EC1 The environmental treatment cost in the total value of the contract
			QC2 Amount of the contract appropriate for quality thresholds	SC2 Clearly defining the contractor and the investor’s responsibility for construction safety in the contract	DC2 Ratio of Number of conflicts to number of contracts	
		TC3 Usable life expectancy	QC3 Project execute time appropriate quality thresholds		DC3 Losses caused by disputes with customers (finacial, time, reputation)	
		TC5 Losses due to late payment				
Owners/ managers	CO1 Unit cost = Final contract	TO1 On – time deliveries: Speed of Construction =	QO1 Variace between the actual and standard	SO1 The change in number of accidents	DO1 Ratio of contribution/ share	EO1 Owners and managers’ support for

Stakeholders	KPIs					
	Cost	Time	Quality	Safety	minimum site disputes	environmental impact
	sum/Ground Floor Area	Ground Floor Area/Construction Time (days/weeks) Time variation = Construction time - Revised Contract Period Where RCP = Original Contract time – effect of extension of time	cost of man-hours, material for repairing or rehandling	or safety-related problems on the job site.	capital to equity	environmental protection
	CO2 Variace between actual cost allocated for the work in place, completed to date and standard cost	TO2 The total value of the punch list items versus total contract amount	QO2 Efficient quality control system			
		TO3 The man-hours for punch items		SO3 Efficient internal control system on safety		
		TO4 Losses caused by contributing capital slowly		SO4 Losses interruption production due to accidents		
		TO5 Ready for contributing				

Stakeholders	KPIs					
	Cost	Time	Quality	Safety	minimum site disputes	environmental impact
		capital				
Employees	CE1 Labor cost per man-hours	TE1 On-time payment of wages	QE1 Experienced and skilled employees to fulfill those positions,	SE1 Worker trained on safety issues		EE1 Trained employees in environmental protection
		TE2 On – time deliveries	QE2 Losses caused by a employees’s mistake.		DE2 Number of employeeS quit due to conflicts	
			QE3 Employee’s initiative to improve quality of the project	SE3 Losses interruption production due to labor accidents	DE3 Losses related to conflicts with employees (fianacial. time, reputation)	
		TE4 Man - hours wasted				
		TS5 Labor productivity				
Suppliers	CS1 Variance between actual and standard input cost	TS1 Loss for late delivery		SS1 Losses caused by the contractor does not comply with safety regulations (financial, time, reputation)	DS1 Number of disputes with suppliers	
		TS2		SS2	DS2	ES2

Stakeholders	KPIs					
	Cost	Time	Quality	Safety	minimum site disputes	environmental impact
		Days of late payment		The number of accidents caused by the contractor	The ratio of losses caused by the dispute with the suppliers to the total value of the contract	Losses caused by subcontractors' poor awareness of environmental protection (financial, time, reputation)
	CS3 Losses due to delayed deliveries	TS3 Penalties for late payment	QS3 Losses caused by poor quality inputs			
Community	CCO1 Ratio local labor cost to total labor cost		QCO1 Community supervision of the project	SCO1 Number of accidents involving the community	DCO1 Number of conflicts with community	ECO1 Community's support for environmental treatment (technology, equipment, financial...)
	CCO2 Cost savings in compensation for site clearance	TCO2 Number hour of carrying out administrative procedures		SCO2 Losses caused by the community does not comply with safety regulations (financial, time, reputation)	DCO2 Losses due to disputes with the community	
	CCO3 cost of local administrative procedures					

Stakeholders	KPIs					
	Cost	Time	Quality	Safety	minimum site disputes	environmental impact
	CCO4 The variance between the local labor unit price and the other labor unit price					
Environment	CEV1 Cost of environmental restoration		QEV1 Support for environmental treatment solutions	SEV1 Certifying construction projects up to environmental protection standards	DVE1 Fines due to environmental violations	EEV1 Consultation on environmental protection solutions
	CEV2 Cost of reducing waste	TEV2 The number of days of inactivity due to failure to meet the requirements of environmental protection				
	CEV3 Ratio cost of recyclable materials to total material cost			SEV3 Support to adjudicate environmental disputes between enterprise and communities		



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Research the Impact of Financial Leverage on the Profitability of Listed Real Estate Enterprises in Vietnam

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Abstract

The study aims to identify the impact of financial leverage on Return On Assets (ROA), Return On Equity (ROE), Return On Sales (ROS), and Return On Capital Employed (ROCE). The study was conducted based on the data collected from 115 real estate businesses listed in Vietnam with 248 observations, and the use of quantitative method combined with multivariable regression models with the help of the EVIEW 10.0 software. Research results indicate that: (1) Financial leverage has no impact on ROS and ROCE, (2) Financial leverage has a negative impact on ROA, and (3) Financial leverage has a positive impact on ROE. In accordance with the research findings and the paper proposes, the State needs to consider both having timely interventions and loosening monetary policy in order to promote the development of the stock market and solve the problems that many companies trading real estate faced during the time of raising capital.

Keywords: *Financial leverage, Profitability, Real estate business.*

1. Introduction

In recent years, the national economy and the world economy have changed drastically in many different aspects. This creates not only new opportunities but also challenges for enterprises and especially real estate agencies in Vietnam. In such a scenario, business managers need to understand thoroughly the financial situation of a company and make proper adjustments. Ultimately, the goal of the business is to improve profitability, from which conditions to fulfil the social obligations to honour the value of the business. Therefore, it requires managers to consider the results obtained when taking into account the resources that have been spent.

For real estate companies, due to the fact that the sector has a high demand for capital, large amounts of outstanding capital and slow recovery time, these companies often mobilize high capital to ensure their ability payment and expansion of the businesses - leading to interest expense in these businesses is indeed a significant expense. Therefore, the size and level of debt used in real estate companies have a direct impact on the business performance of enterprises. The financial leverage policy is a type of policy that mobilizes from loans outside of the company. This is a popular option among Vietnamese real estate agents, even when the enterprise has "excess" of 100% equity, because of the "unique" advantages when using loans. Based on an analysis of 115 listed real estate companies in Vietnam, by the first quarter of 2018, 100% of these companies use loan in the financial structure while the average percentage of the industry is 49.56%.

Theoretically, financial leverage is a term used to present the capital structure of an enterprise – an important part of the financial structure. Financial leverage represents the relationship between liabilities and equity, and liabilities policies,... When liabilities increase, the financial leverage increases and vice versa. The financial leverage determines directly the capital structure of an enterprise and expenses in the period. An efficiently operating enterprise should use financial leverage to take advantage of tax-shield to reduce corporate income tax and encourage profitability in the same term (Nguyen Van Cong, 2017).

The analysis of policies of using financial leverage and their impacts on profitability is essential when the profitability of Vietnamese real estate enterprises is very low: ROA of the industry is 1.5% (First quarter of 2018), ROE is 3.9%. This research assists managers in understanding the extent any portion of the enterprise's capital structure and improving the business performance to achieve profitability goals and be in accordance with the strategies of the enterprise. Because of the importance of the use of financial leverage and the profitability, in the world and in Vietnam, there have been a numerous of practical and theoretic researches, which affirm the solid relationship between the profitability and financial leverage.

Firstly, in the theoretic aspect, in 1958, Modigliani and Miller proposed a theorem which indicated: "The capital structure does not have any influence on the market value of an enterprise". However, this theorem was rejected by other researches because the theorem's assumption hardly existed. There are some outstanding researches such as Capital Structure Theory of Kavous Ardalan, Trade-Off Theory of Kraus & Litzenberger, Pecking Order Theory, ... which indicated the relationship between the profitability and financial leverage. In the practical aspect, there have been also many well-known types of research about financial leverage and profitability such as Schwartz & Aronson (1967), Ghosh & Jain (2000); Hadlock & James (2002) which showed that liability structure has a positive impact on the performance of the business. Meanwhile, researches of Long & Malitz (1985), Kester (1986), Titman & Wessels (1988), Smith & Watts (1992), Rajan & Zingales (1995), Fama & French (1998) or Simerly & Li (2000) showed the contrary.

Both practical and theoretic types of research in developed countries have indicated the relationship between the profitability and financial leverage but there are still many

contraries and limits in these researches' s researching method and assumptions. These researches have not reached the same conclusion due to the differences in setting assumptions under different conditions. Moreover, in Vietnam, there is still a lack of a practical research about the relationship between the profitability and financial leverage in the real estate industry. Therefore, this research will solve the contraries in previous researches and find out a new model about the impact of financial leverage on profitability.

2. Based theory

2.1. M&M theory

In 1958, Modigliani and Miller found out two separated hypotheses based on the following key assumptions: No taxes, no transaction costs, no bankruptcy costs and symmetry of market information, meaning companies and investors have the same information (Modigliani & Miller, 1958):

- The Hypothesis I: "The capital structure is irrelevant and has no impact on a company's stock price". This means that if the market is perfect with no taxes, no transaction costs, and no bankruptcy costs, the firm's value is the same between an unleveraged firm and a leveraged firm.

$$\text{Model 1: } V_U = V_L$$

Where:

V_U is the value of an unleveraged firm

V_L is the value of a leveraged firm

- The Hypothesis II: "A higher debt-to-equity ratio leads to a higher required return on equity, because of the higher risk involved for equity-holders in a company with debt".

$$\begin{aligned} \text{Model 2: } R_e &= R_u + (R_u - R_d) * \frac{D}{E} \\ &= R_e = R_u + (R_u - R_d) * FL \end{aligned}$$

Where:

R_e is the required rate of return on equity.

R_u is the company cost of equity capital with no leverage

R_d is the required rate of return on borrowings or cost of debt.

$\frac{D}{E}$ is the debt – to – equity ratio.

FL is financial leverage.

In conclusion, M & M stated that the use of financial leverage does not have any impact on the market value of a company but have a positive effect on its' return on equity. This theorem can be recognised if and only if we have implicitly assumed that the investor's cost of borrowing money is the same as that of the firm, which need not be true in the presence of asymmetric information, in the absence of efficient markets, or in the situation that the investor has a different risk profile than the firm has.

Although the result is still taught and studied because it tells the correlation between the financial structure and the profitability, it might seem irrelevant (after all, none of the conditions is met in the real world). So that, M & M theory is replaced by other advanced theories listed here.

2.2. Peaking order theory

No longer after M & M theory was public, Peaking order theory was issued by Donaldson to restore the theory built up by Modigliani and Miller by ignoring any unrealized conditions including the absence of taxes, bankruptcy costs, agency costs, and an efficient market (Donaldson, 1961).

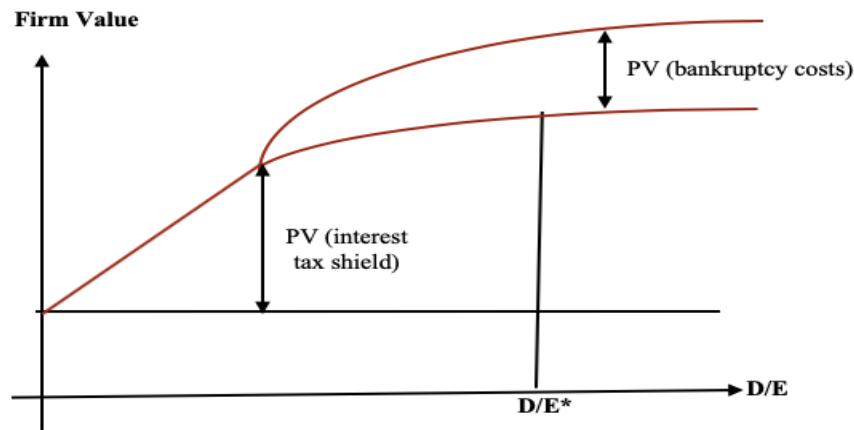
First distributed in 1961 by Donaldson, the Peaking order theory was developed by Myers and Majluf 1984 and stated that companies prioritize their sources of financing, first preferring internal financing, and the debt, lastly raising equity as a "last resort". Hence: internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). Thus, the form of debt that a firm chooses can act as a signal of its need for external finance.

Unfortunately, the Pecking order theory did not illustrate why there were a lot of firms still issued new equity instead of using debt to guarantee their financial capacity and show enough evidence to prove the best financial option for gaining profits for companies is internal financing – debt – equity. Because of these disadvantages, the theory later has become a debatable topic among the researchers. Several publications published by Myers and Shyam – Sunder in 1999, Fama and French in 2000, or Galil and Shapir in 2018 indicate that the owners of private companies in Brazil follow the pecking order theory. On the other hand, Goyal and Frank's publication in 2003 negated this theory by stating that prior to using debt instead of equity is not the best option for a firm.

2.3. Trade-off theory

Basing on M & M theory that developed by Modigliani and Miller (1958) when they illustrated the correlation between market value and financial leverage in a firm, Kraus and Litzenberger built up the same idea after removing inconsequential assumptions used by M & M when they ignored the impact of taxes or asymmetric information. Trade-off theory showed that: "firms in the same industry should have similar or identical financial gearing ratios as they attempt to maximize the tax savings because the market value of the firm using the debt (V_L) is equal to the market value of the firm without using the debt (V_U) plus the benefit of the tax shield ($T_c B$) after the removal of the financial costs (PV)".

Figure 1: The relationship between Firm value and financial gearing ratios



Source: Kraus and Litzenberger, (1973)

$$\text{Model: } V_L = V_U + T_c * B - PV$$

Picture 1 shows that: in summary, the Trade-off theory states that capital structure is based on a trade-off between tax savings and distress costs of debt. It explains the fact that corporations usually are financed partly with debt and partly with equity. It states that there is an advantage of financing with debt and the tax benefits of debt, but there are costs of financing with debt, which include bankruptcy costs of debt and non-bankruptcy costs. The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing.

The theory has the ability for explaining why capital structures differ between industries, whereas it cannot explain why profitable companies within the industry have lower debt ratios (trade-off theory predicts the opposite as profitable firms have a larger scope for tax shields and therefore subsequently should have higher debt levels).

3. Hypothesis and research methods

3.1. Hypothesis

3.1.1. Hypothesis

According to M&M Theory and Trade-off theory, the degree of financial leverage in a company is positively correlated with its capital efficiency. In other words, financial leverage has a correlation with ROA, ROE, ROS, and ROCE of a company, particularly:

- H1: FL is negatively correlated with ROA:

Theoretically, as the degree of FL increases, the ratio of paying debts of the company in comparison with total equity also increases, which directly affects and results in a rise in financial costs occurred during the period. If the increase in profit is not enough to offset the corresponding borrowing costs, ROA will decrease. Empirically, Zeitun and Tian (2007); Muritala (2012); Sheikh and Wang (2013), and Puoraghajan (2012) concluded that: “FL has a negative impact on Return On Assets (ROA)”.

- H2: FL is positively correlated with ROE:

To analyze the effects of FL on ROE, we use the Dupont model:

$$ROE = \frac{\text{Profit after tax}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}}$$
$$= ROS \times TAT \times FL$$

Hence when the degree of FL increases, ROE also increases. FL, therefore, has a positive correlation with ROE.

- H3: FL is negatively correlated with ROS:

In 2014, Berkalne and Javed did two separated types of research illustrating the impacts of capital structure on profitability by collecting and handling samples from Latvia and Pakistan respectively. While Berkalne showed that FL has a negative correlation in ROS, Javed believed that FL doesn't have any impact on ROS.

- H4: FL is positively correlated with ROCE:

Based on the research results of Abor (2005) and Grill (2011), the increase of using financial leverage will be able to improve the Return on Capital Employed in the firms. Consequently, FL has a positive impact on ROCE.

3.1.2. Empirical Model

To consider and justify the effects of financial leverage on profitability, earlier researches usually followed the method of quantitative research into the correlation and regression model with the assistance from software. Therefore, in this research, the authors will follow the method of quantitative research into regression models with FL as the independent variable, profitability as dependent variables, with the assistance of EVIEWS 10.0.

After going through the literature reviews, the financial performance of the firm's indicators has been identified, which are ROA, ROE, ROS, and ROCE. All these indicators are being termed as dependent variables, while FL has been taken as the independent variable.

To test the hypothesis stated in 3.1.1. the authors developed these following main regression models by the following regression models:

- Model 1: $ROA = C(1) + C(2) \times FL + u$

- Model 2: $ROE = C(1) + C(2) \times FL + u$

- Model 3: $ROS = C(1) + C(2) \times FL + u$

- Model 4: $ROCE = C(1) + C(2) \times FL + u$

Where:

- C (1) and C(2): Subject contains the coefficients calculated from regression equations, models. When there are no regression results from any equation, the values of C are set to 0.

- u: Random error (random variable).

Table 1: List of dependents and independent variables of the regression models

Variable	Role	Meaning
ROA	Dependent variable	Return On Assets
ROE	Dependent variable	Return On Equity
ROS	Dependent variable	Return On Sales
ROCE	Dependent variable	Return On Capital Employed
FL	Independent variable	Financial Leverage

Source: Compiled by the authors based on research results

3.2. Research method

3.2.1. Data collection and handling

Table 2: Random sampling process

Step	Process	Results
Step 1	Get a full list of listed real estate companies according to HaSic until the research day 20/7/2018 at http://finance.vietstock.vn//doanh-nghiep-a-z/#	Got a list of 115 listed real estate companies with full name, stock code, and stock exchange.
Step 2	Search for a company with a corresponding stock code to find its Financial Reports in four most recent quarters from 2017 Q2 to 2018 Q1, then reconcile with data on CafeF.	+ 168 samples from 74 companies with data from 2017 Q2 to 2018 Q1 + 52 samples from 13 companies without data to 2018 Q1, data collected are of the four most recent publicized quarters + 28 samples without quarterly data, data collected are of the year 2014 – 2017 Total number of samples collected: 248
Step 3	Test the collected data by comparing the value of total assets and total equity of the companies and eliminate samples with uneven values	Eliminate 9 samples 239 samples left
Step 4	Calculate FL indicators according to formula 2.3, ROA, ROE, ROS, ROCE and eliminate peculiar data samples if ROA is greater than ROE or ROCE	Eliminate 7 samples 232 samples left

Source: Compiled by the authors based on research results

3.2.2. Analysis and application of econometric models

The authors have applied the following methods to analyse data:

- Descriptive statistics analysis:

This method is applied in the research to describe basic quantitative characteristics of data, particularly including the following steps:

Step 1: calculate mean, median, maximum, minimum, standard deviation, skewness and kurtosis values. These values will provide fundamental conclusions about samples and basic comparisons between observations.

Step 2: calculate correlative values between independent variables to ensure the meaning of subsequent correlation and regression analysis.

Descriptive statistics relate to data collection, summarization, presentation, calculation and description of different characteristics to reflect subjects of the study in a general way. However, the limitation of descriptive statistics is that it only proposes notes and judgments for past events relating to data but does not provide either approximation and statistics for subsequent data or forecast about correlations between figures.

- Correlation and regression analysis:

In order to overcome the limitations of descriptive statistics analysis method, the authors use correlation and regression analysis method to measure linear correlations between variables in regression models.

The process of correlation and regression analysis for each model comprises the following steps:

Step 1: Estimate the values of regression coefficients of four independent variables in the corresponding regression model with Ordinary Least Square method (OLS).

Step 2: Test the statistical significance of the model and its independent variables.

Step 3: Test for any possible problems with the regression model, including functional form misspecification, high multicollinearity, residuals not following a normal distribution, auto-correlation and heteroskedasticity.

4. Empirical results

4.1. Descriptive Analysis

Table 3: Descriptive Analysis

	ROA	ROE	ROS	ROCE	FL
Mean	0,015026	0,039470	0,900747	0,027623	0,495614
Median	0,008021	0,017443	0,144175	0,014081	0,518745
Maximum	0,197782	2,124250	8,63288	0,390842	1,453887
Minimum	-0,038032	-0,238573	-4,320513	-0,074954	0,005358
Std. Dev.	0,027966	0,151924	6,315430	0,059879	0,243746
Skewness	3,256041	11,27439	10,56327	3,091270	0,141887
Kurtosis	17,90075	154,5376	120,1133	16,01490	2,854300
Jarque-Bera	2556,250	226896,9	136897,9	2006,910	0,983647
Probability	0,000000	0,000000	0,000000	0,000000	0,611510
Sum	3,486134	9,157116	20,9732	6,408552	114,9826
Sum Sq. Dev.	0,180662	5,331714	92,357	0,828236	13,72421
Observations	232	232	232	232	232

Source: Compiled by the authors based on research results

Table 3 indicates that real estate firms in Vietnam have low profitability when ROA, ROE, ROS, and ROCE have very small means. In specific, the average ROE does not exceed 4% while ROS has a higher mean of 9% and ROCE has the smallest (2.7%.) These observations, however, varies between each firm. In some cases, the profitability can be very high with good ROA and ROCE values (as high as 20% and 39% respectively.) In contrast, most other firms have low business efficiency and negative profitability.

All real estate firms in Vietnam use financial leverage in their business structures. On average, the amount of debt in the capital structure is very similar to the shareholder equity ratio (49.56%). However, like profitability, the differences between the firms' capital structures are very large. Some firms use almost all their shareholder equity while others keep losing, leading to negative equity. As a result, the debt reaches almost 145.4% compared to the total capital.

Table 4: The correlation between independent and dependent variances

	ROA	ROE	ROS	ROCE	FL
ROA	1,000000	0,281161	0,468697	0,840221	-0,145998
ROE	0,281161	1,000000	0,090224	0,266402	0,132268
ROS	0,468697	0,090224	1,000000	0,216195	-0,115977
ROCE	0,840221	0,266402	0,216195	1,000000	0,018958
FL	-0,145998	0,132268	-0,115977	0,018958	1,000000

Source: Compiled by the authors based on research results

Table 4 shows that FL has a very low correlation with other variables in the model (less than 15%.) FL, while having a negative correlation with ROA and ROS, is positively correlated with ROE and ROCE. The respective correlation values between FL and ROA, ROE, ROS, and ROCE are -14.6%, 13.22%, -11.6% and 1.9%.

4.2. Results

4.2.1. ROA model

Model 1: $ROA = C (1) + C (2) \times FL + u$

Table 5: ROA model

Dependent Variable: ROA

Method: Least Squares

Date: 07/13/18 Time: 10:29

Sample: 1 232

Included observations: 232

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.023328	0.004132	5.645950	0.0000
FL	-0.016751	0.007484	-2.238147	0.0262
R-squared	0.211315	Mean dependent var		0.015026
Adjusted R-squared	0.171060	S.D. dependent var		0.027966
S.E. of regression	0.027726	Akaike info criterion		-4.324291
Sum squared resid	0.176811	Schwarz criterion		-4.294578
Log-likelihood	503.6178	F-statistic		5.009300
Durbin-Watson stat	0.542175	Prob(F-statistic)		0.026169

Source: Compiled by the authors based on research results

In Table 5, with a confidence level of 95%, Model 1 has statistical significance Prob(F-statistic) of 0.026169, smaller than 0.05. Moreover, because R^2 is 0.211315, the change of ROA is equal to 21.13% the change of FL.

As a result, Model 1 can be written as: $ROA = 0.023328 - 0.016751 FL + u$

4.2.2. ROE model

Model 2: $ROE = C (1) + C (2) FL + u$

Table 6: ROE Model

Dependent Variable: ROE
 Method: Least Squares
 Date: 07/13/18 Time: 10:49
 Sample: 1 232
 Included observations: 232

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001389	0.022490	-0.061751	0.9508
FL	0.082441	0.000722	-16.52441	0.0000
R-squared	0.754182	Mean dependent var		0.022263
Adjusted R-squared	0.751420	S.D. dependent var		0.140290
S.E. of regression	0.069946	Akaike info criterion		-2.460462
Sum squared resid	0.435424	Schwarz criterion		-2.405278
Log-likelihood	113.9510	F-statistic		273.0561
Durbin-Watson stat	2.127445	Prob(F-statistic)		0.000000

Source: Compiled by the authors based on research results

In Table 6, with a confidence level of 95%, Model 2 has statistical significance Prob(F-statistic) equals 0, smaller than 0.05. Moreover, because R^2 is 0.754182, the change of ROE is equal to 75.42% the change of FL.

As a result, Model 2 can be written as: $ROE = -0.001389 - 0.082441 FL + u$

4.2.3. ROS model

Model 3: $ROS = C (1) + C (2) FL + u$

Table 7: ROS model

Dependent Variable: ROS
 Method: Least Squares
 Date: 07/20/18 Time: 17:45
 Sample: 1 232
 Included observations: 232

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.390038	0.936830	2.551197	0.0114
FL	-3.004940	1.696917	-1.770823	0.0779
R-squared	0.013451	Mean dependent var		0.900747
Adjusted R-squared	0.009161	S.D. dependent var		6.315430
S.E. of regression	6.286435	Akaike info criterion		6.523249
Sum squared resid	9089.432	Schwarz criterion		6.552962
Log-likelihood	-754.6969	F-statistic		3.135813
Durbin-Watson stat	1.969923	Prob(F-statistic)		0.077915

Source: Compiled by the authors based on research results

In Table 7, with a confidence level of 95%, Model 3 has no statistical significance since Prob(F-statistic) is 0.077915, bigger than 0.05. Moreover, because R^2 is 0.009161, the change in ROS is equal to 0.9% the change of FL.

Therefore, FL has no effects on ROS.

4.2.4. ROCE model

Model 4: $ROCE = C (1) + C (2) FL + u$

Table 8: ROCE model

Dependent Variable: ROCE

Method: Least Squares

Date: 07/20/18 Time: 17:51

Sample: 1 232

Included observations: 232

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.025315	0.008941	2.831292	0.0050
FL	0.004657	0.016195	0.287562	0.7739
R-squared	0.000359	Mean dependent var		0.027623
Adjusted R-squared	-0.003987	S.D. dependent var		0.059879
S.E. of regression	0.059998	Akaike info criterion		-2.780435
Sum squared resid	0.827938	Schwarz criterion		-2.750722
Log-likelihood	324.5305	F-statistic		0.082692
Durbin-Watson stat	0.689107	Prob(F-statistic)		0.773941

Source: Compiled by the authors based on research results

In Table 8, with a confidence level of 95%, Model 3 has no statistical significance since Prob(F-statistic) is 0.773941, bigger than 0.05. Moreover, because R^2 is 0.000359, the change of ROCE is equal to 0.03% the change of FL.

Therefore, FL has no effects on ROCE.

4.3. Verify the reasonableness and reliability of the models

After the results of the models in Section 4.2 are calculated, the two remaining models, which are Model 1 and Model 2, need to be investigated. With different methods of testing, the rationality and reliability of the models will be determined.

Model 1: $ROA = 0,023328 - 0,016751 FL + u$

Model 2: $ROE = -0,001389 + 0,082441 FL + u$

Table 9: Process validation of the rationality and reliability of regression models

Statistical Test	Objective	Hypothesis	Conclusion
Wald Test	Test the reasonableness of the slope C (2) in each model.	<p>Model 1:</p> $\begin{cases} H_0: C(2) = 0 \\ H_1: C(2) < 0 \end{cases}$ <p>Model 2:</p> $\begin{cases} H_0: C(2) = 0 \\ H_1: C(2) > 0 \end{cases}$	<p>With a confidence level of 95%, P- value is smaller than 0.05. Therefore, H₀ is rejected and H₁ is accepted.</p> <p>Moreover, P-value_{Model 1} = 0.025211 P-value_{Model 2} = 0.042998</p> <p>Thus, FL has a negative effect on ROA and a positive effect on ROE.</p>
White Test	Establishes whether the variance of the errors in a regression model is constant	<p>H₀: Variance of the errors in a regression model is constant</p> <p>H₁: Variance of the errors in a regression model is not constant</p>	<p>With a confidence level of 95%, P- value is larger than 0.05. The null hypothesis cannot be rejected based on the data.</p> <p>Moreover, P-value_{Model 1} = 0.281632 P-value_{Model 2} = 0.370127</p> <p>Thus, the variance of the errors in a regression of both models is constant.</p>
Ramsey Test	Tests whether non-linear combinations of the fitted values help explain the response variable.	<p>H₀: Model has the correct function form</p> <p>H₁: Model does not have the correct function form</p>	<p>With a confidence level of 95%, P- value is larger than 0.05. The null hypothesis cannot be rejected based on the data.</p> <p>Moreover, P-value_{Model 1} = 0,214885 P-value_{Model 2} = 0.228748</p> <p>Thus, both models have the correct functional form.</p>
Jacque-Bera Test	Whether sample data have the skewness and kurtosis matching a normal distribution.	<p>H₀: u is normally distributed</p> <p>H₁: u is not normally distributed</p>	<p>With a confidence level of 95%, P- value is smaller than 0.05. Therefore, H₀ is rejected and H₁ is accepted.</p> <p>Moreover P-value_{Model 1} = 0 P-value_{Model 2} = 0,054217</p> <p>Thus, Model 1 has u not normally distributed.</p> <p>Model 2 has u normally distributed</p>

Source: Compiled by the authors based on research results

5. The conclusion and recommendations

5.1. The conclusion from the research results

The results from analysing the correlation between FL and the profitability including ROA, ROE, ROS, and ROCE illustrate that: (1) FL has no impacts on ROS and ROCE, (2) FL has a negative impact on ROA and (3) FL has a positive impact on ROE.

- FL has no impacts on ROS and ROCE:

Research results showed that: Although FL plays an important role in evaluating ROA and ROE but while ROA is influenced negatively by FL, ROE has a positive correlation in accordance with FL. These results are consistent with previous studies, both theoretical and empirical.

- FL has a negative impact on ROA:

From the results in Chapter 4, it is shown that FL has a great impact on ROA. With a confidence level of 95%, the change of FL relates to 21% the change of ROA. With 232 observations from audited financial reports and testing using EVIEW 10.0, it is assumed that if FL increases by 1%, ROA will reduce by 0.01167%.

Clearly, increasing debts causes total assets increase. But, if that increase does not create enough profit in correlation with the financial costs raising from the debts, ROA will completely decrease. This is a suitable result based on Trade-off theory and a lot of descriptive previous researches of Fama & French (1998), Simerly & Li (2000) and Nhu Le Thi (2017).

- FL has a positive impact on ROE:

The results in Chapter 4 show that the change of ROE can be explained by 75% the change of FL, with the confidence level of 95%. With 232 observations from audited financial reports and testing using EVIEW 10.0, it is assumed that if FL increases by 1%, ROA will increase by 0.08%.

This is an important conclusion that is consistent with the Dupont model analysis's results. It is also matched with the M&M theory and many other published types of research, including Abor's research (2005) and Gill's research (2011).

5.2. Limitations

Because the data that was collected and analysed is from secondary sources as well as many different websites, errors are inevitable. This is mostly because the observations in this research are not uniform (most of the observations are quarterly data; however, some are yearly data). Nevertheless, since the data used in this research is all relative, the characteristic of those observations are not affected by the scale of an enterprise. Moreover, in this research, only model 2, which shows the relationship between ROE and FLR, is optimal. This is because model 1 that shows the relationship between ROA and FLR has u is not normally distributed. This problem in model 1, however, is alleviated because the sample size used in this research is very large (232 observations). The bigger the sample size, the less significant the problem is to the accuracy of the whole model.

5.3. Recommendation

5.3.1. Recommendation to the State

First of all, the State should create a legal environment for investment in real estate. At the same time, create favourable conditions for real estate credit.

Currently, due to concerns about the appearance of "bubble" real estate, the State Bank tends to strictly control the flow of money into the real estate market, especially long waiting for loans, as well as high-interest rates, have caused many difficulties for enterprises in the process of mobilizing resources for production and business activities.

In such a situation, the State should have more timely, practical interventions to avoid cumbersome practices and loose monetary policy for investment enterprises. In addition, the State should promote the stable development of the stock market, and increase the transparency of information, thereby increasing the flow of money in the stock market and solving the problem of capital.

5.3.2. Recommendation to the Stock Exchanges.

Because Vietnam's stock market is an emerging market with no solid foundation, unstable trading and restrictions on information verification, infrastructure constraints, especially Human Resources. As a result, investors are more sceptical about investing in securities, making it difficult for businesses to access capital. Therefore, in order to promote the development of the real estate market, the Stock Exchanges need to strengthen the supervision of transactions and listed companies, ensuring openness and transparency to help businesses have an equal environment for development.

5.3.3. Recommendation to the Real estate Agents.

For listed real estate companies, the most important issue is profit, as investors will consider it before deciding whether to invest or not. Besides waiting for government support, businesses also have to look for opportunities and prevent risks.

To be able to compete with major real estate corporations around the world as well as seize market opportunities, besides consider business strategy; conducting market research; flexible in the restructuring of products; business restructuring; ..., financial systems of real estate companies need to be perfected and healthy. Financial leverage is one of the most effective financial instruments. The debt used in the business depends on the business objectives of the business in the short and long-term, but generally must ensure the profitability of the business.

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The Impact of Solvency to Bankruptcy Risk of Real Estate Companies Listed on the Vietnam's Stock Market

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Abstract

The study focused on the impact of solvency (measured by key indicators) on the bankruptcy risk of real estate companies listed on Vietnam's stock market. Particularly, indicators reflecting solvency can be determined to assess the impact of solvency to bankruptcy risks. Research data were collected from 45 real estate companies listed on Vietnam's stock market from 2008 to 2015 and quantitative method was performed using a logistic regression model on specialized software SPSS version 25. The research results showed that (with a prediction accuracy of 91.4%) in these companies, indicators of solvency influencing bankruptcy risk include: (1) Operating cash flows to average total liabilities ratio, (2) Net working capital to total assets ratio. Based on the research results, specific recommendations and solutions were proposed to improve solvency, prevent and mitigate bankruptcy risk in the real estate companies listed on Vietnam's stock market.

Keywords: *Bankruptcy, Bankruptcy risk, Solvency*

1. Introduction

Bankruptcy risk is a negative and unwelcome situation for any business. Once an enterprise goes bankrupt, it affects not only the company directly but also many other related industries. This is particularly evident in industries that play an important role in the national economy like the real estate industry in Vietnam.

In order to prevent and mitigate the risk of bankruptcy of, apart from general management measures, the financial analysis should be conducted in which solvency analysis plays a significant role in providing reliable information for users to reduce bankruptcy risk. Therefore, investigating the impact of solvency to the risk of bankruptcy of listed real estate

companies on the stock market in Vietnam is theoretically and practically imperative, which has attracted interest from a large number of managers and investors.

Thus, the study aims at investigating the relationship and extent of the impact of solvency to the bankruptcy risk of listed real estate companies. In order to achieve the research objectives, this study would propose a logit model that demonstrates the relationship between solvency and the risk of bankruptcy. Furthermore, the study will examine the impact of the operating cash flow to average total liabilities and net working capital to total assets on the bankruptcy risk of listed real estate companies on Vietnam's stock market. Consequently, the study proposed some recommendations and solutions to improve solvency in order to prevent and reduce the risk of bankruptcy in listed real estate companies in the stock market in Vietnam.

2. Literature review

The risk of bankruptcy is one of the issues that have received substantial attention from many researchers around the world such as Beaver (1966), Altman (1968), Ohlson (1980), in which Beaver and Altman were considered pioneers in using financial ratios to predict bankruptcy in empirical studies. When investigating bankruptcy, Beaver (1966) pointed out that three important indicators in determining financial crisis in a company which are a total debt to total assets ratio, return on assets, and cash flow to total debt ratio. However, Altman (1968) argued that this method is too simple to recognize the complexity of bankruptcy as it is impossible to classify companies based on a single financial ratio at a time. Thus, he used Multiple Discriminant Analysis (MDA) based on a combination of multiple ratios to propose a better prediction model. MDA produces a linear or quadratic combination of variables which helps to distinguish groups effectively. In his study, Altman combined both financial data and market data of the research sample of 66 manufacturing companies (33 bankrupt companies and 33 non-bankrupt companies) and he tested on 25 other firms with a probability of 96%. In addition, Altman et al. (2007) conducted a study on predicting the financial risk of companies in China's stock market provided a model for predicting the risk of bankruptcy of Chinese companies with a distinction of 0.5. Following the work of Beaver (1966) and Altman (1968), many researchers have applied and developed the model to predict the bankruptcy risk in different countries. Typical examples include Fulmer (1984), Gu (2002), McClure (2004), Jame Kolari (2002), Bandyopadhyay (2006), Ugurlu and Aksoy (2006), Jouzbarkand et al. (2013), Xu and Zhang (2009), 1. Alkhatib and Bzour (2011). In general, those studies identified financial variables that can distinguish bankrupt companies from strong companies when predicting bankruptcy risk of enterprises. One of the most prominent studies is the study of Ohlson's (1980). He applied the Logit model for financial ratios. The results of the study showed that four statistically significant factors affecting the probability of bankruptcy in a year are: financial scale, financial structure (measured by the leverage ratio which is total debt to total assets), performance (measured by return on assets ratio and operating cash flows to average total liabilities), current solvency (measured by net working capital to total assets ratio and current liabilities to current assets ratio). The accuracy of Ohlson's models is 96.12%, 95.55% and 92.84%,

respective to models predicting year 1, 2, and 1 or 2 years. Moreover, on his research, Ohlson proposed the O index to distinguish bankrupt companies from non-bankrupt companies. Companies with $O > 0,038$ are classified as bankrupt companies with other things held constant.

In addition, along with advances in other fields such as research and artificial intelligence, many researchers strived to figure out more appropriate and sophisticated approaches. Odom and Sharda (1990) developed an artificial intelligence model for predicting bankruptcy and comparing the results with the MDA regarding classification accuracy. Coats and Font (1993) used an artificial intelligence model to estimate the financial situation of a firm. Their results proved that artificial intelligence is more effective than MDA technique.

Recently, the issue of bankruptcy has also received great attention from many researchers in Vietnam. Most studies focused on the application of Altman's Z-score bankruptcy model. However, there have been several studies proposing new models such as studies of Nguyen Bao Khang (2012), Hoang Tung (2011), Nguyen Trong Hoa (2011), Dao Thi Thanh Binh (2013), each study had certain achievement and limitations. Therefore, the lack of a standardised theory on bankruptcy has resulted in many studies with various technical methods in different corporate structures in a certain country (Etemad et al., 2008).

3. Theoretical background on bankruptcy risk and solvency

3.1. Bankruptcy risk

The risk of bankruptcy can exist in all stages of existence and development of any enterprises. The presence of bankruptcy risk is inevitable when financial performance is weak, enterprise resources are declining or a company loses control in the certain business environment. Once a company faces the risk of bankruptcy, its value will be decreased drastically and the level of business risk will be relatively high.

According to Tatsiana N.Rybak (2006), there are three levels of bankruptcy risk: Primary risk level, estimated risk level and final (acceptable) risk level. According to Beaver (1966), the criteria to determine if companies are bankruptcy risk are companies unable to pay debts, companies having bank overdraft, and companies that neglect to pay preferential dividends. Altman (1968) claimed that companies go bankrupt when they file for bankruptcy. Zhang (2007) assumed that a company can be examined for bankruptcy when the cumulative income was negative in two consecutive years or the net asset value per share was lower than the book value. Sori and Karbh (2004) are regulated that companies are in financial crises if: either in accordance with the Malaysian Enterprise Law in 1965 or companies approved by the authorities to restructure with the purpose of recovering their financial conditions. According to Pongsat et al. (2004), bankruptcy was defined as the inability of a company to continue its current business due to high debt obligations. Gu (2002) argued that companies with high liabilities and low EBIT (Earnings Before Interest and Taxes) are less likely to survive and vice versa. Altman, Zhang and

Yen (2007) pointed out that companies in the financial crisis are those subjected to special control.

According to the authors, companies are at bankruptcy risk when:

- Being delisted by the Stock Exchange, being warned to stop trading or companies whose stocks have been warned about performance issues
- Have negative ROA and market capitalization value less than total liabilities.
- Have negative net working capital and market capitalization value less than total liabilities.

3.2. Solvency

Bankruptcy risk is the risk associated with the solvency of an enterprise which is the ability of enterprises to use their assets to meet debt obligations. High solvency is a critical requirement for the stability and development of business operations. In contrast, with low solvency in a long period of time, enterprises are very vulnerable to bankruptcy.

In order to assess solvency, we can use the following criteria: general solvency, quick solvency, ability to pay short-term debts, net working capital, net working capital to total assets, indicators of cash flows. In the study of Alman (1968), Merton (1974) it was pointed out that the ratio of net working capital to total assets was found to be the most valuable indicator of bankruptcy. However, many research results showed that not all indicators of solvency can point out a clear relationship between solvency and the probability of bankruptcy of a company.

4. Conceptual framework and methodology

4.1. Conceptual framework

Inheriting from the research of Beaver (1966) and Altman (1968), this study used four indicators to measure the solvency of real estate companies, specifically:

+ X_1 - *Operating cash flow to average total liabilities ratio*: This indicator reflects the balance between the ability of a business to generate money and the number of debts that a business has to pay. The study of Beaver (1968) also used this indicator and concluded that it is the best indicator representing solvency of enterprises.

+ X_2 - *Owner's equity to long-term debt*: this indicator measure the ability to pay long-term liabilities from owner's equity.

+ X_3 - *Current assets to current liabilities (current ratio)*: This indicator shows that for every dollar of current debt, a company has how much money in current assets to pay for the debt. If this ratio is too low, it shows that a company's solvency is not good.

+ X_4 - *Net working capital to total assets*: Net operating capital is defined as the difference between current assets and current liabilities. Generally, a company experiencing consistent operating losses is likely to have current assets shrink relative to total assets.

After variables are determined, a regression model is developed with dependent variables and independent variables as follows:

Probability (bankruptcy risk) = $f(\text{Operating cash flow to average total liabilities, Net working capital to total assets, current assets to current liabilities, owner's equity to long-term debt})$.

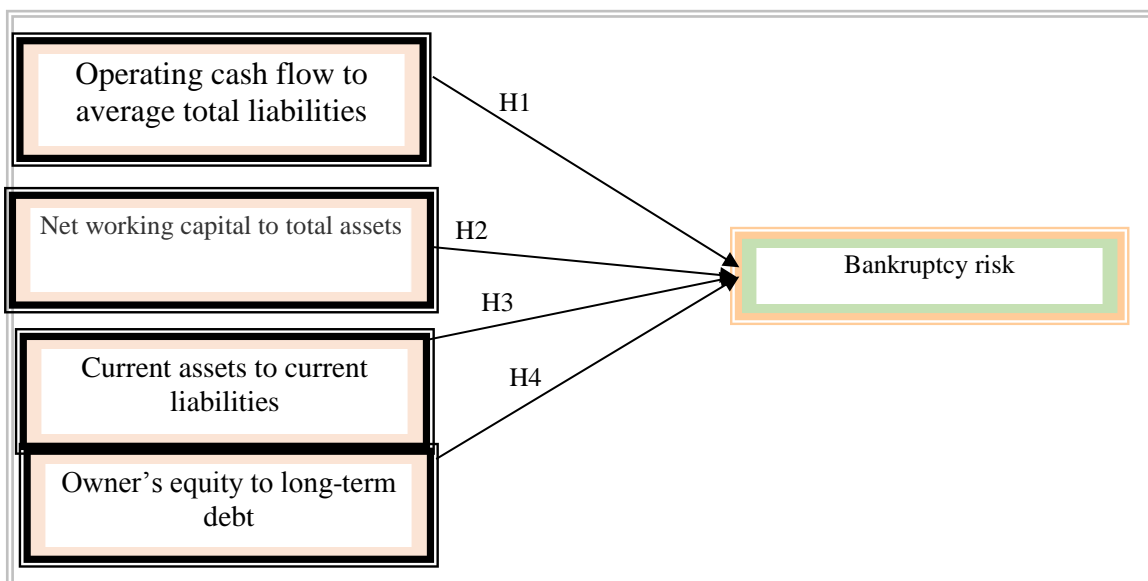
In which:

* Dependent variable: bankruptcy risk.

* Independent variables: include four variables namely operating cash flow to average total liabilities, net working capital to total assets, current assets to current liabilities, owner's equity to long-term debt.

A conceptual framework is displayed in figure 1:

Figure 1: Conceptual framework



Source: compiled by the authors based on research results

As the dependent variable in the study is bankruptcy or non-bankruptcy of companies (binary variables can only take values of either 0 or 1), the authors used the Logit model to study the relationship between bankruptcy risk (dependent variable) and indicators of solvency affecting the risk of bankruptcy (independent variable).

According to Hoang Trong and Chu Nguyen Mong Ngoc (2008), logit model has the following formula (in the simplest case, there is only one independent variable X):

$$P_i = E(Y = 1/X) = \frac{e^{(b+b_1x)}}{1+e^{(b+b_1x)}} \quad (4.1)$$

In which $P_i = E(Y=1/X) = P(Y=1)$ is probability that an event will occur ($Y=1$) when independent variable have specific value of X_i . By assuming z denotes $(b + b_1X)$, Logit model is rewritten as follows:

$$P(Y = 1) = \frac{e^z}{1+e^z} \quad (4.2)$$

Then the probability that the event will not occur is:

$$P(Y = 0) = 1 - P(Y = 1) = 1 - \frac{e^z}{1+e^z} \quad (4.3)$$

After comparing the probability that an event will occur with the probability that the event will not occur, the proportion of this difference is expressed in the following formula:

$$\frac{P(Y=1)}{P(Y=0)} = \frac{\frac{e^z}{1+e^z}}{1 - \frac{e^z}{1+e^z}} \quad (4.4)$$

Take log base e of both sides of the equation then transform the right side of the equation we have:

$$\text{Log} \left[\frac{P(Y=1)}{P(Y=0)} \right] = \log e^z \quad (4.5)$$

As $\text{Log} e^z = z$, we have:

$\log \left[\frac{P(Y=1)}{P(Y=0)} \right] = b + b_1x$. This is called the binary logit model, and we can extend the binary logit model for many independent variables X_i as follows:

$$P(Y_i = 1) = p_i = \frac{e^{X_i' \beta}}{1 + e^{X_i' \beta}} \quad (4.5)$$

In which: X_i' is a set of independent variables/ explanatory variables $X_i' = (X_1, X_2, \dots, X_n)'$,

β is estimated coefficient of the explanatory variables.

$P(Y_i = 1)$ is probability that an event will occur.

Equation (3.6) is transformed as follows:

$$\log(\text{odds}_i) = X_i' \beta \quad (3.7)$$

With $P(Y_i = 1) = p_i$, and $\text{odds}_i = \frac{p_i}{1-p_i}$.

We assume "c" is the value of the intersection, if a company has $P(Y_i = 1) > c$, that company is at risk of bankruptcy, otherwise, the company is not at risk of bankruptcy. It is noteworthy that the value of "c" may be different depending on the subjective analysis of the researcher on the issue. For the purpose of this study, companies with values of $P(Y_i = 1)$ equal or greater than 0.5 would be at risk of bankruptcy and the remaining firms with values of $P(Y_i = 1)$ less than 0.5 are classified as companies not at risk of bankruptcy (healthy companies).

In this paper, the observations are classified as: Companies at risk of bankruptcy and companies not at risk bankruptcy. Binary dependent variables receive a value of 1 for observations (firm-year) at risk of bankruptcy and receive a value of 0 for observations (firm-year) not at risk of bankruptcy. The Logit model is now used to solve the problem of binary dependent variables only taking either value of "0" or "1".

From these analyzes, the authors propose the following research hypotheses:

+ *Hypothesis H1: cash flow to average total liabilities has a negative relationship with bankruptcy risk.*

+*Hypothesis H2: owner's equity to long-term debt has a negative relationship with bankruptcy risk.*

+*Hypothesis H3: current solvency has a negative relationship with bankruptcy risk*

+*Hypothesis H4: net working capital to total assets has a negative relationship with bankruptcy risk.*

4.2. Methodology

Research data was derived from secondary data, taken from various items on the financial statements of real estate companies listed on Vietnam's stock market and was collected from the State Securities Commission of Vietnam which was highly transparent. With research time of 8 years (from 2008 to 2015), the authors selected 45 companies out of 55 listed real estate companies (after eliminating companies with insufficient data, lack of data, and companies have just started their operations). Due to these characteristics, the number of real estate companies listed on HOSE and HNX was quite modest with only 55 companies. Therefore, the authors conducted a survey on 45 companies out of a total of 55 companies accounting for 81.82% which is quite high.

45 companies were divided into two groups: Group 1 including companies at risk of bankruptcy and Group 0 including companies not at risk of bankruptcy. The total number of observations was 360, and for the purpose of achieving the best estimate, the sample selected consisted of 103 observations in group 1 and 257 observations in group 0 to conduct analysis and verification on specialized software SPSS.

Data analysis had three following steps:

Step 1: collecting and compiling data from various items in the financial statements during the period from 2008 to 2015.

Step 2: Based on the data collected, selected financial indicators including four variables representing solvency were calculated.

Step 3: From the calculated data, data cleaning was conducted then data was analyzed and verified on SPSS 25 in order to figure out variables affecting bankruptcy risk. The results derived from the model will be the basis for enterprises to come up with appropriate solutions.

5. Research results

5.1. The situation of real estate companies listed on Vietnam's stock market

The statistical results based on the sample of 45 listed real estate firms showed that the number of real estate companies classified as being at bankruptcy risk varied from year to year. During the period from 2011 to 2013, the number of companies at risk of bankruptcy was the highest.

Table 1: Statistic description

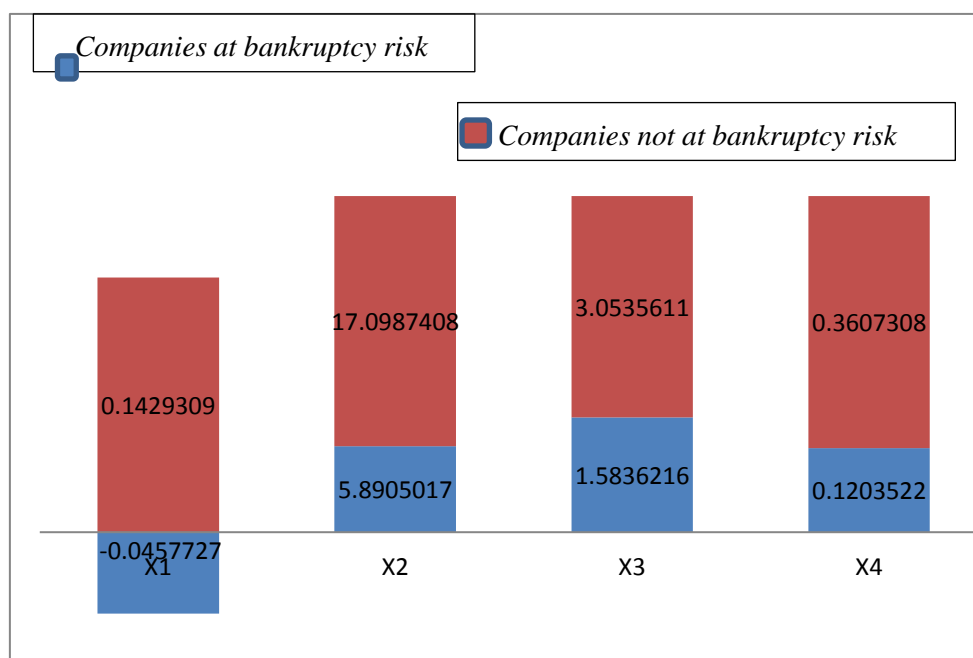
Bankruptcy risk	Year								Observations
	2008	2009	2010	2011	2012	2013	2014	2015	
If there is bankruptcy risk	31	38	43	27	24	25	37	32	257
If there is no bankruptcy risk	14	7	2	18	21	20	8	13	103
Total	45	45	45	45	45	45	45	45	360

Source: Compiled by the authors based on research results

The results in Table 1 reflect the difficult situation of the real estate market in this period when the Government issued the monetary policy in 2011 to reduce money inflow into the real estate sector. Hence, it had a strong impact on the market and made the real estate market gloomy. Especially in 2012, it was the year of fierce competition and real estate companies strived to survive, resulting in a large number of bankruptcies.

Furthermore, the statistics of solvency showed that the average value of operating cash flow to average total liabilities ratios of companies at bankruptcy risk is negative (-0.0458). This indicates that some companies in the group of being at bankruptcy risk were having difficulty in generating money from their business operations, which creates an imbalance cashflow and financial risks in the business operations of the firms. If this situation lasts for a long period of time, it is likely that the company will stop its operation, which may result in dissolution or bankruptcy.

Figure 2: Comparing the average value of solvency between companies at bankruptcy risk and companies not at bankruptcy risk



Source: Compiled by the authors based on research results

Figure 2 shows that there is not much difference between the net working capital to total assets ratios of the two groups of companies. However, there is a major difference

between the average values of owner's equity to long-term debt of two groups of companies. This difference is due to the fact that some companies had low ratios of owner's equity to long-term debt, while some companies have extremely high ratios (the reason is that they have a large amount of net working capital relative to long-term debt).

5.2. Regression analysis

As the dependent variable in the study is a binary variable which can only take values of either 0 or 1 (1= there is bankruptcy risk, 0 = there is no bankruptcy risk), the authors used the Logit model and analyzed data on SPSS 25. The results are shown in the following table.

Table 2: Regression results

Notations	Variables	coefficients	S.E.	Wald	df	Sig.	Exp(B)
X ₁	Operating cash flow to average total liabilities	-7.559	1.903	15.779	1	.000	1917.232
X ₂	Owner's equity to long-term debt	.000	.021	.000	1	.993	1.000
X ₃	Current assets to current liabilities	-.302	.381	.630	1	.427	1.353
X ₄	Net working capital to total assets	-4.078	2.059	3.923	1	.048	59.044
Constant		3.992	.722	30.590	1	.000	.018

Source: Compiled by the authors based on research results

In table 2, the Wald test used to task significance of the overall regression coefficients, shows that the significance values of variables X₁(operating cash flow to average total liabilities), X₄ (net working capital to total assets) are less than 0.05, so hypothesis H₀: β_i=0 is rejected. Thus the regression coefficients were significant and the model was used effectively.

The probability of bankruptcy risk of a firm is calculated using the following formula:

$$P(Y_i = 1) = p_i = \frac{e^z}{1 + e^z}$$

$$\text{or } Z = \ln\left(\frac{p}{1-p}\right) = X'_i \beta$$

Based on results in table 2, we have the following regression equation:

$$Z = \ln\left(\frac{p}{1-p}\right) = 3,992 - 7,559X_1 - 4,078X_4$$

or

$$P = \frac{\text{Exp}(3,992 - 7,559X_1 - 4,078 X_4)}{1 + \text{exp}(3,992 - 7,559X_1 - 4,078 X_4)}$$

From the regression equation, the following conclusions are drawn regarding influential factors:

X_1 - *Cash flow to Average Total Liabilities*: The regression results show that the cash flow to average total debt variable is negatively associated with the risk of bankruptcy. Specifically, when the value of X_1 increases, the risk of bankruptcy decreases and vice versa. This result is consistent with the initial expectations of the authors and is consistent with the results of Beaver (1966) and Eljelly et al (2001), Ohlson (1980).

X_4 - *Net working capital to total assets*: The result shows that there is a negative relationship between X_4 and the risk of bankruptcy which means the higher the value of net working capital to total assets, the lower the risk of bankruptcy and vice versa. This result is consistent with the initial expectation of authors and consistent with studies of Altman (1968), Bandyopadhyay (2006), Ohlson (1980), and the study of Nguyen Trong Hoa (2009).

5.3. Checking model fit for logistic regression

In order to assess the model fit for logistic regression, in addition to testing the multicollinearity among independent variables through the correlation matrix, the following tests were conducted to assess the degree of fit of the model.

- *Testing the overall fit of the model:*

Table 3 illustrates the results of testing overall fit of the model with the hypothesis $H_0: \beta_k = 0$ and alternative hypothesis H_1 : there is at least one coefficient which is non-zero. This test examines the ability to explain the dependent variable of the set of independent variables.

Table 3: Assessing the fit of the regression model

		Chi-square	Df	Sig.
Step 1	Step	181.104	5	.000
	Block	181.104	5	.000
	Model	181.104	5	.000

Source: Compiled by the authors based on research results

The results in this table show that overall fit has a sig. = 0.000 so H_0 is rejected. This means that the linear combination of all coefficients in the model is statistically significant in explaining the dependent variable.

- *Testing the fit of the model:*

Table 4: Testing the fit of the model

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	106.368 ^a	.523	.757

Source: Compiled by the authors based on research results

Table 4 shows the results of the test of model fit. Unlike normal linear regression that the larger the coefficient R^2 , the more appropriate the model, the logistic regression used an indicator -2LL (-2loglikelihood) to evaluate the fit of the model. The smaller the value of -

2LL, the higher the model fit. The smallest value of -2LL is 0 (which means no error), indicating the model is perfectly fit. This table shows that $-2LL = 106.368a$ which is relatively low, indicating a good fit of the overall model.

- Testing the predictive power of the model:

The test of the predictive power of the model is used to measure the accuracy of the prediction model regarding the bankruptcy risk of companies relative to actual results.

Table 5: Testing the predictive power of the model

Bankruptcy risk	Prediction (intersection point is 0.5)			
	If there is bankruptcy risk	If there is no bankruptcy risk	Total	Percentage of accurate prediction (%)
If there is bankruptcy risk	58	9	67	86.6
If there is no bankruptcy risk	12	166	178	93.3
Total	70	175	245	91.4

Source: Compiled by the authors based on research results

Table 5 presents the results of the comparison between the actual results and prediction of the model. The results show that among 178 cases predicted to be not at risk of bankruptcy, the model correctly predicted 166 cases, with the accuracy rate of 93.3%. For 67 companies at bankruptcy risk, the model has 9 cases of false predictions and accuracy rate was 86.6%. Therefore, the prediction of the number of companies not at bankruptcy risk was slightly more accurate (93.3%) compared with those companies at risk of bankruptcy (86.6%). The accuracy rate of the overall predictive model is 91.4%. This outstanding accuracy implies that the model has the potential for practical application when studying the impact of solvency to the bankruptcy risk of listed real estate companies.

6. Conclusions and recommendations

6.1. Solutions

Based on regression analysis, the following solutions are proposed:

- Improve net working capital of the business:

Cash flow is the "life-blood" maintaining all production and business activities, which is a vital element of companies. When companies fail to pay their debts on time, the creditor may file for bankruptcy against the companies.

Many real estate companies have negative cash flow of over hundreds of billions VND from operating activities in many quarters and years, despite large amounts of profits after tax in respective years. Typical examples are ITA, VPH, SJC, SGT, QCG, NBB, DTA, DIG. So the question is why profitable companies often lack money during the year and the net cash flow from business activities tends to decline sharply and even become negative continuously for many years. The negative cash flows from operating activities

in many years indicate that the company was facing many problems related to long-term and survival factors of a business. A major risk for businesses with negative cash flows is that banks may tighten their loans, and even stop lending to those businesses that fall into this situation.

For businesses in the real estate sector, a continuously negative cash flow from operating activities will put pressure on financing activities as life-blood of the company will depend entirely on external funds. If money comes from raising capital, businesses will be at lower risk. But if money comes from borrowing, once banks tighten their lending, the company's cash will immediately be exhausted and life-blood of the company will be blocked. This is very risky and can cause companies to shut down before gaining from their investment and business activities.

In order to save themselves, businesses can have many different ways of handling this situation such as: selling projects having losses to collect money, borrowing money, mobilizing more capital from shareholders, selling assets. Although it is necessary to find ways to collect money as cash flow is the life-blood of any business, easily selling assets or projects in a few months can cause the business at risk of losing everything. Therefore, the most important thing is that companies should focus on developing their current business activities, restructure products to suit the practical needs of customers, implement optimal business plans to accelerate sales. Potential solutions need to be strategic and financially fit. It is not necessary that companies need to "sell themselves" but they need more considerate choices. Some solutions that real estate companies should place attention to include:

- + Restructure products to suit the practical needs of the market.
- + Establish strategies to sell products, accelerate inventory turnover, implement policies to differentiate company with others in the same industry such as after-sales service, supporting decoration for customers, changing furniture.
- + Actively collect receivables through payment discount policies
- + Sell certain unnecessary assets
- + Take advantage of the policy of association with credit institutions to get access to stable sources of capital with a reasonable interest rate in an appropriate time period.
- + Negotiate with creditors to extend debt maturity such as banks.
- *Regulate net working capital appropriately:*

An enterprise that wants to operate uninterruptedly is required to maintain a certain amount of net working capital to meet short-term debt obligations and inventory requirements. Particularly, the greater the net working capital of a company, the higher the solvency of that company. In contrast, when net working capital declines, firms will lose their ability to pay, lose their flexibility and credibility with financial institutions, suppliers and customers. This leads to a decrease in the opportunity to potentially exploit new business opportunities.

In the context of the current real estate market, especially for those companies with short-term liabilities exceeding short-term assets resulting in negative working capital, frequent sources of funds is not enough for companies to finance their long-term assets, so the companies have to use short-term debts to offset long-term debts, the stability of sources of funds financing assets is very low so companies have to face difficulties in paying short-term debts and may be at bankruptcy risk.

Although some companies have a high amount of net operating capital (short-term assets are much larger than short-term debts), the structure of short-term assets is not reasonable. For example, inventory accounts for a major part of short-term assets and most receivables are not collected which lead to difficulty in repaying maturing debts. Many companies invested in infeasible projects, failed to provide products that suit the practical needs such as houses with small areas for people with low incomes, while they mainly supplied luxury houses. Therefore, in order to increase net working capital to total assets ratio, real estate companies need to implement multiple measures simultaneously. Especially, more emphasis should be placed on the following solutions:

- + Restructure short-term assets appropriately including: increase cash and cash equivalents, reduce inventory and receivables. This solution will be helpful to companies with high levels of inventory and receivables.

- + Effectively exploit internal and external sources of funds

- + Sell unnecessary long-term assets. This measure can be applicable in companies having negative net working capital such as company DRH mentioned above.

- + Consider extending payment period for customers to accelerate inventory turnover, however, slow payment can negatively impact their cash flow and profitability is not higher than loan interests may cause difficulties for companies when debts reach maturity dates. Therefore, companies need to accept the fact that money collected from customers may not be sufficient to implement construction work according to the rate of progress and this is the playground for affluents with substantial financial potential or great credit backing.

6.2. Recommendations about the application of solutions

- With the government:

In order for the real estate market to develop, the government should create transparency in the real estate market by developing and issuing a system of documents relating to real estate business, creating a legal business environment, clearly defining the rights and obligations of the real estate business. At the same time, the government should provide capital support to enterprises with certain criteria; develop real estate financial channels (mortgages, real estate bonds, saving and lending associations, savings banks, institutional and policy improvement for the real estate market); appropriately implement the interest rate policies, land policies, real estate transfer policies. Particularly, the bankruptcy law and relevant legal and practical guidance should be improved.

- With real estate associations and real estate companies:

Real Estate Associations should submit a petition to the management agencies to simplify administrative procedures and provide preferential policies for businesses investing in low and medium cost real estates. Furthermore, real estate companies need to review their business strategy; carry out market research, examine market segmentation; be flexible in the restructuring of products, business restructuring, place attention to issues such as capital mobilization, joint ventures, association.

- *With credit and monetary institutions:*

It is necessary to reconsider interest rate policy, prioritize lending to feasible and appropriate projects, serving poor workers, consider for real estate companies to restructure their old debts which were subjected to high interest rates.

Thus, in order to promote the market to overcome difficult periods, increasing solvency and preventing real estate companies from the financial crisis are the responsibilities of stakeholders. Solutions need to be deployed synchronously and resources must be exploited. Especially, cash should flow through the real estate market. Only when these solutions are implemented simultaneously, the real estate market has the impetus for positive changes. As prevention is always better than cure, enterprises should place emphasis on solvency indicators and take timely measures to improve these indicators to reduce the risk of bankruptcy.

7. Conclusion

The research results showed that: Among four indicators of solvency, there are two indicators that can affect the risk of bankruptcy of the real estate companies listed on the stock market of Vietnam which are: a) operating cash flow to average total liabilities and b) net working capital to total assets. These two indicators are negatively associated with the risk of bankruptcy. Furthermore, the results of the study indicated that two remaining indicators having no impact on bankruptcy risk of listed real estate companies on Vietnam's stock market are: 1) current solvency ratio and 2) owner's equity to long-term debt.

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Risk Management at Military Commercial Joint Stock Bank

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Abstract

This paper is conducted for examining the framework for risk management in the Basel II accord, the Basel II risk management model at the Military Commercial Joint Stock Bank. Data were collected from annual reports for the period from 2015 to 2017 of the Military Commercial Joint Stock Bank. The results show that the implementation of risk management under Basel II at Military Bank still faces many difficulties in the pressure of capital increase, database system, human resource quality, and cost of implementation. The study suggest some solutions for Military Bank to implement successfully Basel II, emphasizing the role of human resource quality, modernizing the data system and the specific mechanism for raising capital. The results of this research is a reference for Vietnamese commercial banks in identifying, controlling and responding various risks in banking activities in the context of Vietnam.

Keywords: *Basel II, Risk management, Military bank*

1. Introduction

Following the global economic crisis of 2007 - 2008, Vietnam implemented a comprehensive reform of the economy, including the restructuring plan of credit institutions in the period of 2011-2015 (Bernanke, 2004). The project concentrates on weak banks by M&A and simultaneously piloting Basel II in some banks. According to the State Bank's roadmap, by the end of 2015, 10 banks were selected to pilot capital and risk management

in accordance with Basel II standards including Vietinbank, BIDV, Vietcombank, Techcombank, ACB, VPBank, Military Bank (MB), Sacombank, VIB and Maritime Bank.

MB is one of the leading commercial joint stock banks in Vietnam, always pioneering the modernization of the banking system. MB has studied international standards for risk management including the Basel II. MB had applied Basel II before the State Bank officially issued Circular No. 41. In 2012, MB hired Deloitte Advisors to develop the operational risk management framework, which included strategies, policies, operational risk and process of implementation of 03 tools is LDC, RCSA and KRI. By 2014, MB has partnered with Ernst & Young Singapore to implement a gap analysis project and develop a Basel II roadmap. The roadmap to 2019 is the last time for the selected banks to complete risk management in Basel II, although MB has had a lot of success in deploying Basel II, compared to other banks, but MB's Basel II risk management poses many challenges (Nguyen, 2015).

2. Theoretical Framework

2.1. Risks in Banking Business

Credit risk

Credit activity is the main business activity of commercial banks, bringing the highest profit but also the biggest risk of commercial banks. Credit risk mentioned here is the risk in lending and credit activities of commercial banks. According to the Basel Committee (2000), "Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms."

In article 3, the State Bank of Vietnam's Circular No. 02/2013/TT-NHNN dated 21 January, 2013 states that "Credit risk in banking activities is likely to occur for debts of credit institutions, a branch of a foreign bank is not executed by the customer, or is unable to perform part or all of its obligations under the undertaking".

To assess credit risk at a commercial bank, it is often calculated bad debt ratio.

$$\text{Bad debt ratio} = \frac{\text{Outstanding loans (Group 3, 4, 5)}}{\text{Total outstanding loans}} \times 100\%$$

Interest rate risk

Interest rate risk is the type of risk that occurs when a change in interest rates results in loss of assets or a decrease in bank income. Interest rate risk usually arises when banks maintain the asymmetry between the maturity of its assets and liabilities in the balance sheet or the bank adopts different interest rates during lending and borrowing.

To measure interest rate risk, two models are usually used:

- The repricing model is used to assess the impact of interest rate changes (Δi) on the change in interest income of a bank (ΔNII):

$$\Delta \text{NII} = \text{GAP} \times \Delta i$$

With $\text{GAP} = \text{RSA (Interest-sensitive assets)} - \text{RSL (Interest-sensitive liabilities)}$

- The duration model is used to evaluate the effect of interest rate changes (Δi) on the bank's equity (ΔE)

$$\Delta E = -A \frac{\Delta i}{1+i} (D_A - k D_L)$$

A is the total asset of the bank, D_A , D_L is the duration of the total assets and total liabilities respectively, $k = \text{total liabilities/total assets}$.

Foreign exchange risk

Risks in foreign exchange trading in Vietnamese commercial banks especially the exchange rate risk occur when the bank maintains its open foreign exchange position. When the exchange rate of the foreign currency changes unfavorably will lead to damage to the bank. Thus, the measurement of risk for individual foreign currencies and for the foreign currency portfolio is the basis for banks to introduce risk prevention measures to reduce losses. Foreign exchange risk has a relationship with credit risk: when the exchange rate fluctuates sharply, it can lead to a shortage of some foreign currency and to payment of sellers, the company must buying foreign currency at unexpectedly high prices, business profits down, may affect the ability to repay the loan.

Liquidity risk

Liquidity risk: the type of risk that occurs when the bank lacks the ability to pay, fails to convert assets in cash or is unable to borrow to meet the requirements of payment contracts. Liquidity risk occurs due to several reasons:

Firstly, there is a mismatch between the maturity date of the fund's use and the maturity date of the mobilized funds (cash flow from asset investments is less than the cash outflow).

Secondly, due to the sensitivity of the deposit to the change in the interest rate of the investment: as interest rates rise, some depositors withdraw their capital from the bank to invest in higher yielding areas. The borrowers will actively access credit for lower interest rates.

Thirdly, because banks have inadequate and ineffective liquidity management strategies: the bank's securities are low liquidity, the bank's reserves are insufficient for the demand.

Operation risk

According to the Basel Committee on banking supervision, "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events". Operational risk is the type of asset loss that occurs due to inefficient

operations, such as incomplete information systems, problematic operations, violations in the internal control system, fraud or unforeseen catastrophes.

2.2. Introduction of Basel II

Basel II is the second version of the Basel Convention, which sets out the general principles of the Basel Committee on Banking Supervision. The Basel I (credit risk framework) was first introduced in 1988 by the BCBS (Basel Committee on Banking Supervision) which addresses the capital adequacy requirements of banks. Together with the development of the social economy, commercial banks are constantly improving themselves, renewing the business model, thus posing a requirement for the Basel Committee to renew the principles in Basel I. In June 2004, the Basel II accord was enacted, introducing a series of complex and risky approaches to credit risk, focusing on operational risk. Basel II uses the term "three pillars": (i) minimum capital requirements, (ii) supervisory reviews, (iii) market principles.

Pillar 1 deals with minimum capital requirements. Accordingly, the minimum capital adequacy ratio (CAR) is still required at 8% of total risk-weighted assets like Basel I. However, the risk is calculated not only on credit risk but also on operation risk and market risk.

Pillars 2 deals with banking supervision. This pillar defines the process of reviewing the organization's risk management framework and ultimately capital adequacy. It sets out specific supervisory responsibilities for the board of directors and senior management, thereby enhancing the principles of internal control and other corporate governance by regulators in different countries throughout the world.

Pillar 3 aims to strengthen market discipline by enhancing the disclosure of information by banks. It sets out requirements and recommendations for disclosure in a number of areas, including how banks calculate capital adequacy and the bank's risk assessment approach. Enhancing comparability and transparency among banks is the desired result of pillar 3. At the same time, the Basel Committee seeks to ensure that Basel II corresponds to accounting standards and it does not conflict with the broader accounting disclosure standards that banks must adhere to.

3. Research Methodology

Data collection: Data were collected mainly from annual reports of Military Bank (MB) for the financial years ended 2015, 2016 and 2017. Some management accounting reports of MB are also collected for having full data of loans, non performing loans, exchange rate; risks and others relating to the topic research.

Based on the data collected, we use analytical procedures including comparison, evaluation, judgments relating to the topic research. For more illustration, we use crosstab data and figures for showing more the issue.

4. Results and Discussions

4.1. Risk management when adopting Basel II

Credit risk management

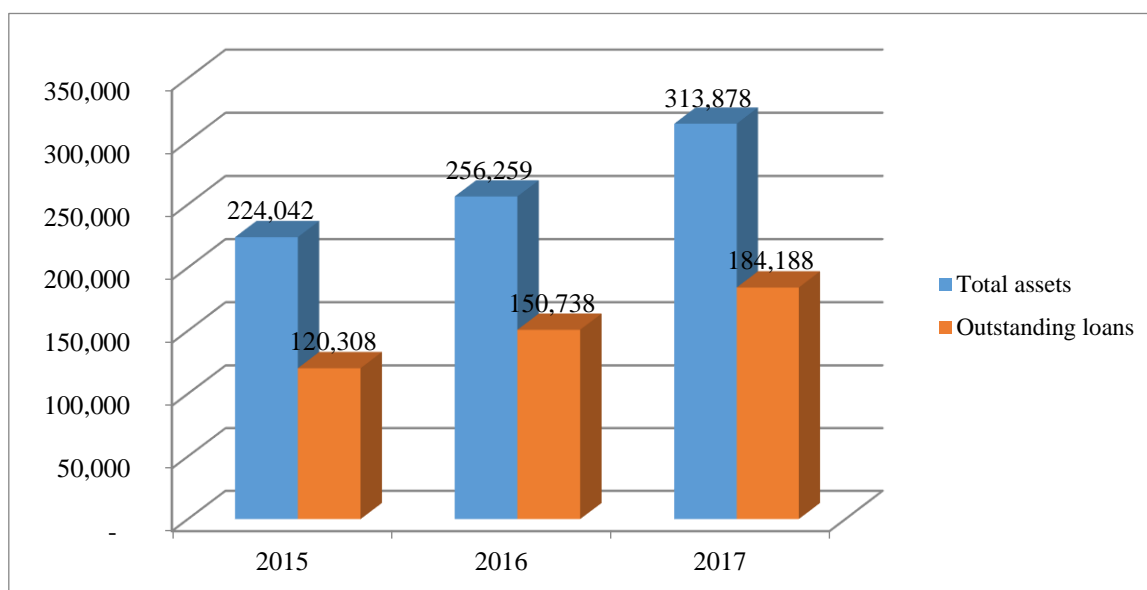
Credit risk management in this part consists of (i) Credit growth; (ii) Credit quality; (iii)

Credit risk management as presented below:

* *Credit growth*

Figure 1. Growth of outstanding loans and total assets of MB

Unit: VND billion



Source: MB annual report from 2015 to 2017

In the period of 2015 - 2017, macro economy had recovered in a sustainable way after closing global economic crisis, State Bank managed flexible monetary policy for supporting the fast growth. Despite the intensive competition from not only domestic banks but also international banks, MB has achieved the target of outstanding loan growth and the quality of credit.

* Credit quality

Table 1: Credit quality of MB from 2015 to 2017

Unit: VND billion

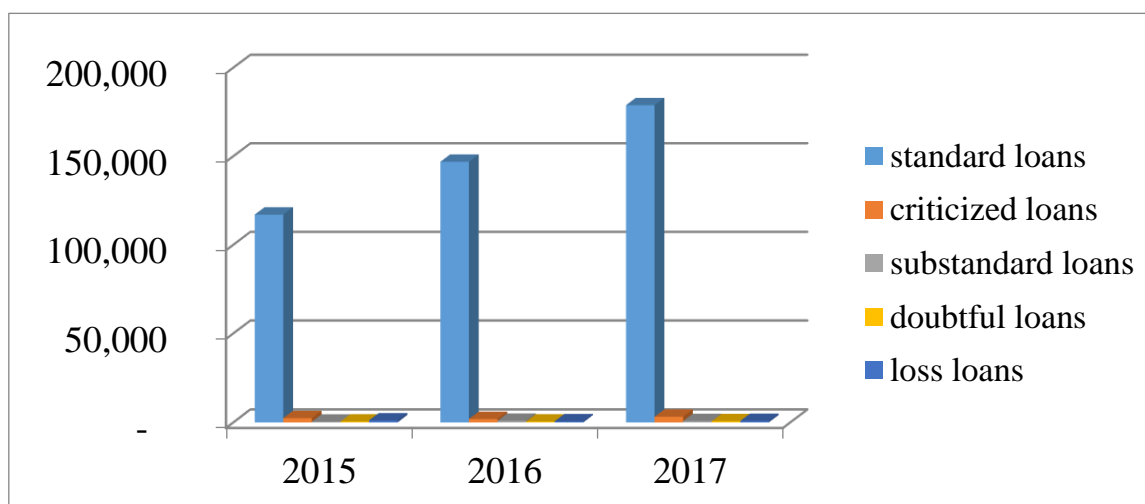
Items	2015	2016	2017
Total assets	120,308	150,738	184,188
Standard loans	117,017	146,846	178,795
Criticized loans	2,382	1,905	3,175
Substandard loans	425	896	736
Doubtful loans	442	477	668
Loss loans	1,082	614	814
Bad debt ratio	1.62%	1.32%	1.2%

Source: MB annual report 2015 – 2017

Loan of Military Bank is classified and shown in Figure 2, as below:

Figure 2: Classification of MB's loans

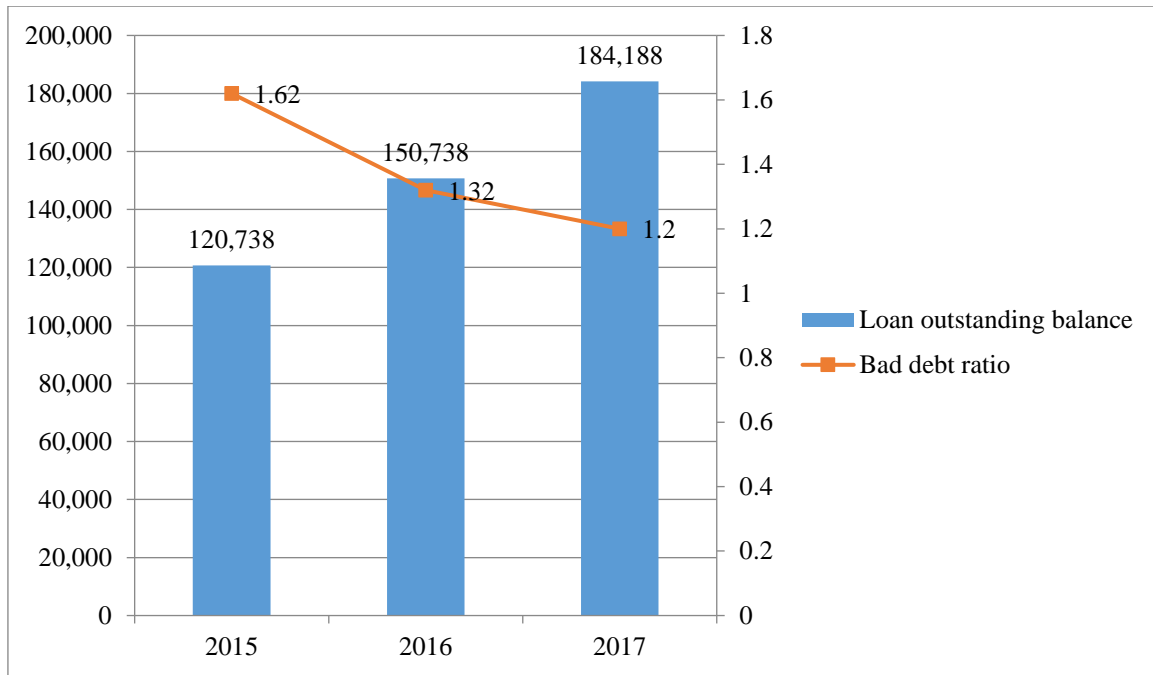
Unit: VND billion



(Source: MB annual report 2015 - 2017)

MB's credit quality is basically controlled properly in the previous years. Even though there have unfavorable conditions of business environment, MB has been active in implementing solutions for managing, processing and recovering bad debts. As details, bad debt of 31/12/2015 is 1,949 billion, accounting for 1.62% outstanding loans. The outstanding debt of 31/12/2016 is 1,987 billion, the bad debt ratio is 1.32%, down 0.3% in comparison with that in 2015. Criticized loans at 31/12/2017 is 3,175 billion, an increase of 1,270 billion compared to 2016 (+ 66,6%). Outstanding debt at 31/12/2017 is 2,218 billion VND. The NPL ratio was 1.2%, down 0.12% points from 2016, lower than the plan's target of 1.5%.

Figure 3: Loan outstanding balance and bad debt ratio of MB



Source: MB annual report 2015 - 2017

** Credit risk management*

MB has maintained a credit risk management policy to ensure basic principles:

- Establish an appropriate credit risk management environment;
- Operate a suitable credit process;
- Maintain a proper credit management, measurement and supervision process;
- Ensure to adequately control over credit risk.

MB conducts credit review through multiple levels to ensure that a loan is reviewed independently; at the same time, the approval of loans is made on the basis of credit limits assigned to each competent authority. In addition, the credit approval model of the bank has the involvement of the credit board to ensure that credit approval is centralized with the highest quality. MB is using an internal credit rating system that is approved as a management tool for credit risk management whereby each customer is rated at a risk level. This level of risk can be modified, updated regularly. Data and customer ratings across the entire system are centrally controlled and managed. This is the basis for the credit granting and provision of services to customers as well as the provision of credit risk provisions.

Exchange rate risk management

Exchange rate risk is the risk that the value of financial instruments fluctuates due to exchange rate fluctuation, MB was established and operated in Vietnam with reporting currency by VND, MB's main trading currency is VND. MB's loans are mainly denominated in VND and USD ("USD"). MB sets up a limited gap for each currency based on MB's

internal risk rating system and State Bank’s regulations. Daily managed currency position and risk hedging strategy used by MB to ensure that currency position is maintained within established limits.

Table 2: MB foreign currency status for the period 2015 - 2017

Unit: VND billion

Currencies	2015		2016		2017	
	USD	EUR	USD	EUR	USD	EUR
Asset	31,457,841	1,406,022	30,762,729	2,816,885	3,105,196	3,018
Liability	33,263,984	1,405,221	32,532,478	2,827,824	3,128,816	-
Gap	(1,806,143)	801	(1,769,749)	(10,939)	(23,620)	3,018
The rate of VND against USD, EUR	1%	1%	1%	1%	1%	1%
Expected change of income	14,407	6	14,158	87	8,130	189

(Source: MB Annual Report 2015 - 2017)

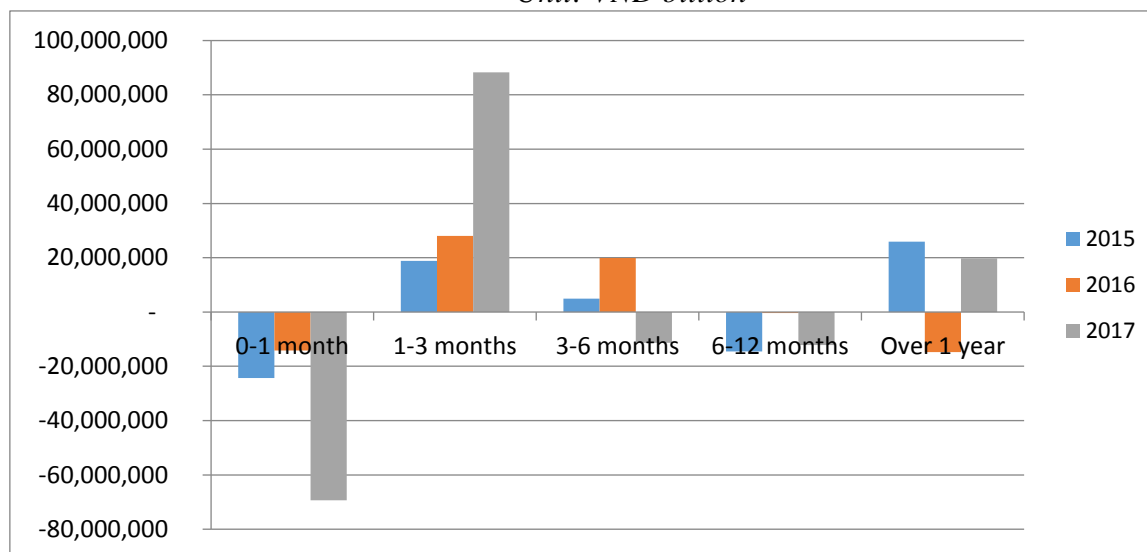
Looking at the table we can see that, MB mainly maintain the foreign currency position for two foreign currencies are USD and EUR. The bank maintains the short position of foreign currency for two currencies USD and EUR although the difference is not high. With USD, the gap between asset and debt of the bank is (-) 1,806,143 billion, by 2017 only (-) 23,620 billion. That shows the risk management of foreign currency are more interested at MB.

Interest rate risk management

The chart below presents the assets and liabilities of MB that are classified according to the contractual re-pricing term or the maturity date and actual interest rate. Figure 4 shows that all terms of less than one month. MB maintained a negative sensitive interest rate gap. This is in line with interest rate trend in recent years. MB will increase net income when interest rates decrease. For longer term periods, from 12 months or more, MB maintained a positive sensitive interest rate gap. If interest rates continue to fall as in recent years, MB will face the interest rate risk. Therefore, MB should increase long term deposits of 12 months or more, encourage short-term loans and reduce medium and long-term loans.

Figure 4: Interest rate gap of MB from 2015 to 2017

Unit: VND billion



Source: MB annual report 2015 - 2017

Liquidity risk management

Liquidity risk arises in the process of raising capital in general and in the process of managing the monetary status of MB. Liquidity risk includes the risk of the inability to mobilize the asset at maturity and appropriate interest rates as well as the risk of not being able to sell an asset at a reasonable price and right period of time,

MB uses risk measurement methods appropriate to the scale of operations and the availability of the information system, ensuring that the risk minimization requirements are met. Liquidity risk is measured by the use of indicators related to cash flow, ability to raise capital, liquidity capacity of MB. In addition, MB also has specialized departments to update domestic and foreign economic information which directly affects the trading book and business strategy of MB as well as forecast the fluctuation of market factors: exchange rate, interest rate, gold price to have the timely warning. MB also develops and implements the system of limits, decision authority levels based on risk measurement results for each category.

Table 3: The liquidity gap between the maturities of MB between 2015 and 2017

Unit: VND million

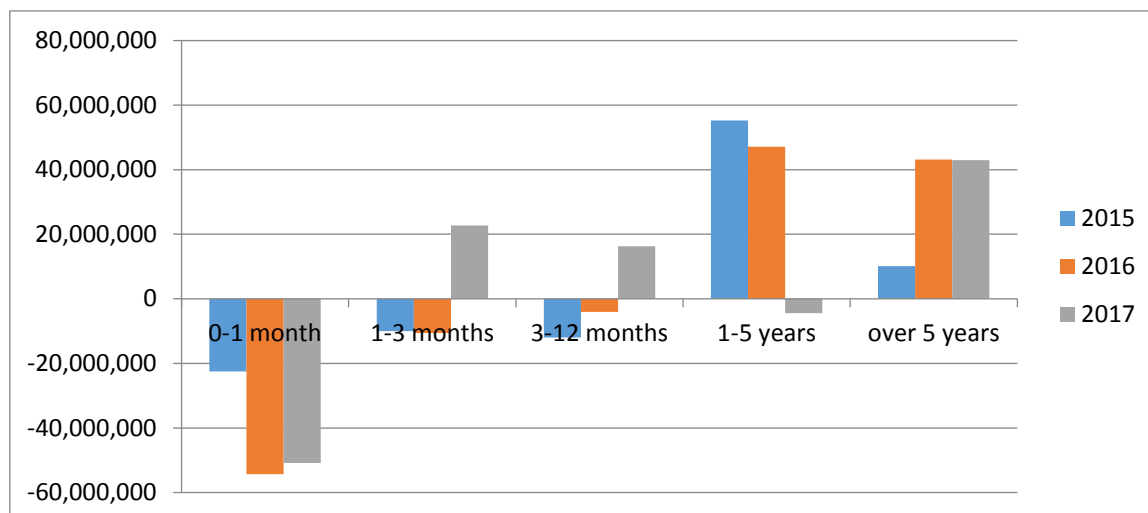
Year	Criteria	To 1 month	From 1 to 3 months	From 3 to 12 months	From 1 to 5 years	Over 5 years
2015	Asset	45,859,795	38,820,606	45,805,934	64,939,834	23,430,474
	Liability	68,314,997	48,795,748	57,782,373	9,692,341	13,273,483
	Net liquidity gap	(22,455,202)	(9,975,142)	(11,976,439)	55,247,493	10,156,991
2016	Asset	40,470,580	43,348,452	48,782,692	75,192,666	47,234,757
	Liability	94,808,204	53,914,550	52,871,342	28,071,874	4,084
	Net liquidity gap	(54,337,624)	(10,566,098)	(4,088,650)	47,120,792	43,150,757
2017	Asset	58,969,982	48,938,512	72,885,038	87,155,154	43,026,672
	Liability	109,797,623	26,244,195	56,613,678	91,563,285	57,877
	Net liquidity gap	(50,827,641)	22,694,317	16,271,360	(4,408,131)	42,968,795

Source: MB annual report 2015 - 2017

The table above presents assets and liabilities of MB by maturity group from the balance sheet date to the date of payment. In fact, the actual maturity of assets and liabilities may differ from the contractual period in accordance with the contract annexes may have.

Figure 5: The liquidity gap of MB between 2015 and 2017

Unit: VND billions



Source: MB annual report 2015 - 2017

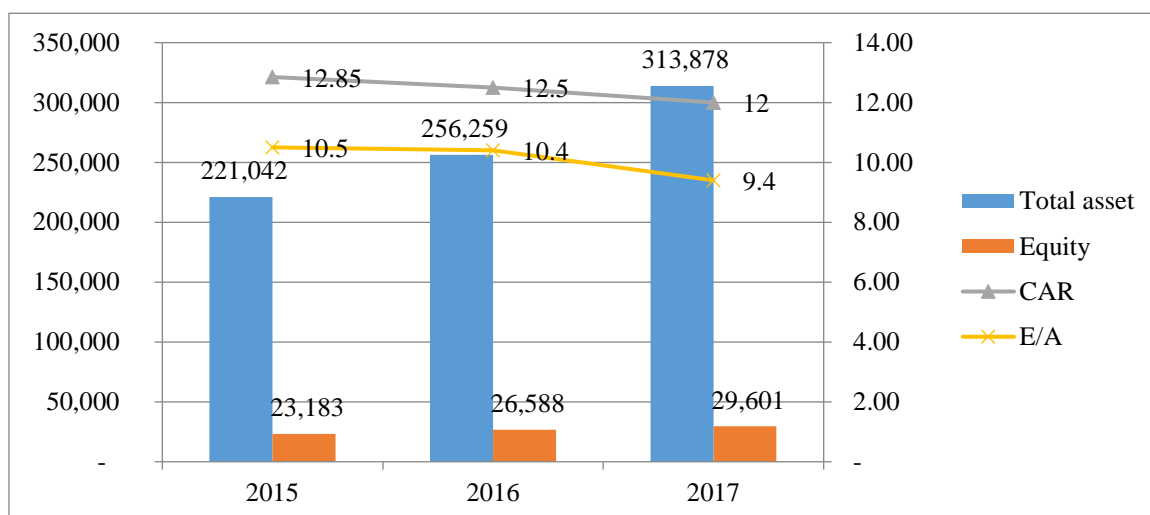
Looking at the chart, the bank is always in shortage of liquidity for short terms, especially the term of less than a month. In 2015, the difference between the short-term assets of less than one month and the debt of less than one month is (-) 2,455,202 million VND, this figure is quite high, with (-) 50,827,641 million VND in 2017. This liquidity risk in short terms is very noticeable. At longer maturities, the bank maintained its liquidity surplus.

CAR management

The size of the bank's capital is a key element in Basel II to assess the safety of banking operations. In Vietnam, the State Bank has issued many regulations relating to the level of self-financing of banks. First of all, Decision 297/1999/QĐ-NHNN requires commercial banks to maintain a minimum capital adequacy ratio of 8%. In 2005, the State Bank issued Decision 457/2005/QĐ-NHNN which stipulated minimum capital adequacy ratio of 8%, but this rate was standardized by Basel I. Then, by 2010, the State Bank of Vietnam issued Circular 13/2010/TT-NHNN and later Circular No. 36/2014/TT-NHNN raised the minimum capital adequacy ratio (CAR) to 9% on the basis of the Basel II approach. The increase of capital in accordance with the regulations of the State Bank put MB a lot of pressure and there are many problems that need to be resolved.

Looking at the chart it can be seen that MB basically meets the requirements of the State Bank of Vietnam to maintain minimum capital adequacy by continuously maintaining the CAR of over 12% in the period of 2015 - 2017, CAR numbers tend to decrease over time, Basel III, on the other hand, needs to maintain CAR above 13% so that it can withstand cyclical and cross-sector risks.

Figure 6: Capital adequacy ratio of MB from 2015 to 2017



Source: MB annual report 2015 – 2017

Likewise, although the CAR of the bank has remained stable over 12%, if the equity / asset ratio is immediately seen falling from 10.5% in 2015 to 9.4% in 2017, this shows that financial leverage of MB is increasing.

4.2. Difficulties in Implementing Basel II at Military Commercial Bank

During deploying Basel II with the case study of Military Bank, some constraints have been pointed out as below:

- Firstly, with the first pillar, to increase the CAR ratio, As mentioned above, MB's CAR is maintained at over 12%, it meets the requirements of the the State Bank ($\geq 9\%$), However, MB's CAR has only included credit risk without mentioning market risk and operation risk. When adding these two types of risk, MB's CAR will decrease. To increase CAR, MB can reduce total risky assets. However, this is difficult to implement because MB is still focusing on credit growth target, reducing total risky assets means reducing the bank's credit activity, thereby reducing the profitability and performance of MB. Therefore, the need to increase capital to ensure CAR is very urgent.

- Secondly, Basel II has provided a framework for the risks that banks face (systemic risk, strategic risk, reputation risk, etc.). The second pillar requires commercial banks to have a capital adequacy and internal capital adequacy assessment process to maintain safe capital. At the same time, the State Bank will be responsible for reviewing, re-evaluating and then intervening, requesting adjustments if the level of commercial banks' capital below the prescribed minimum level. This will cost MB to invest in IT systems, hire consultants and train human resources.

- Thirdly, MB needs to disclose information appropriately in accordance with market principles, When information is public, the commercial banks will know all the information of competitors, customers will also know the information of many commercial banks. Consequently, good quality commercial banks will be able to survive easily, and

inexperienced commercial banks will be at risk of being eliminated. In addition, because there is still a gap between Vietnam's accounting system and risk management and international practices, financial disclosure by banks is currently difficult.

Finally, perhaps the biggest obstacle for most commercial banks in Basel II is the database. The core banking system at banks has so many different systems and data that have not been focused on systematically and collectively for a long time. While, the minimum data length requirement for some analytical models is 3 years. Therefore, system building and data collection will take time, effort and money of banks when deploying.

5. Conclusion

Firstly, MB needs to develop a clear and specific strategy to increase its own capital, but it should be linked to the proper use of capital to ensure sustainable development. Theoretically speaking, in order to increase MB's internal capital there are two ways to increase it from internal sources and from external sources. MB, as well as other banks, is increasing internal capital mainly from the increase in retained earnings or dividends. This method is being implemented effectively by MB, MB has completed raising its chartered capital to over 21,600 billion VND on 15/8/2018 after issuing 345 million shares to pay bonus shares and dividend for the second phase of 2017. However, this method is still limited when the scale of capital increase is low. As such, MB, as well as other commercial banks, need to expand their own capital from outside sources such as issuing shares, M & A for banks, and even recommending the State Bank to propose a specific mechanism for open larger room for foreign investors during the Basel II deployment period. In addition, the bank should have plans to issue additional bonds with maturities of 5 to 10 years to be able to meet Basel II equity.

Secondly, MB needs to continue building and improving its information system in order to increase its modernity, updating, researching and setting up data transmission lines and linking information networks with other banks for the purpose of creating ownership for the bank. MB should try to connect, share information with the State Bank to build a comprehensive data warehouse, to provide accurate sources of information for the relevant departments.

Thirdly, MB must build a team of experienced and dedicated professionals. This is a decisive factor in the success of Basel II. By adopting more sophisticated risk management methods, MB will be lacking in high quality human resources. In addition to attracting and training human resources to meet the needs of building and deploying Basel II, MB also needs a team of experts outside the bank both at home and abroad for advice and support.

Finally, MB need to raise awareness of risk management, putting risk management into banking culture, MB should actively apply the regulations of the State Bank as well as international standards in risk management of the Basel II Committee such as 16 principles of risk management, 10 principles of management of interest rate risk, 17 principles of BIS on liquidity risk management.

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**The Conflict of Interest between the Enterprises and the Laborers for
the Social Insurance (SI), Unemployment Insurance (UI) – Policy Suggestions**

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Abstract

Working at enterprise, employee has the right entitle to full benefits from social insurance, health insurance and unemployment insurance after years of contribution. However, this desire of the employees sometimes can not be achieved. Enterprises have been taken advantage of the legal loophole to commit acts of evasion (avoidance) to fulfill these obligations to employees. Therefore, the benefits of employees are seriously damaged and the management agencies of the social insurance fund also lose. This article is about the current situation in Vietnam and point out some policy suggestions.

Key word: *SI, UI, Legal loophole, Benefit, Bamage.*

1. Introduction

Since 2018, the change and tightening of the calculation and laborers' entitlement on the Social Insurance and Unemployment Insurance have made useful conflicts between the two objects as enterprises and laborers which have more opportunities to express great distance. Employees always want to maximize their benefits whereas, businesses aim to minimize costs. Consequently, this conflict, which has never been resolved thoroughly, has become increasingly acute. Especially to achieve their purposes, businesses always use many ways to evade the Social Insurance and Unemployment Insurance for employees with high amounts. However, with many information channels at present, the employees are able to understand and be skeptical of what they have received from Social Insurance and Unemployment Insurance that enterprises pay for them. Based on the gap on legal and

accounting documents on Social Insurance and Unemployment Insurance, this paper aims to analyze the challenges that the State and employees are facing with the fact that enterprises lack of honesty in carrying out the Social Insurance and Unemployment Insurance.

Based on the study of survey from different working groups in different sectors, different ages and components, the paper has some basic conclusions about the inadequacies of the implementing the State regulations on the deduction and payment of social insurance, unemployment insurance of enterprises. Therefore, the policy suggestions are made to overcome to eliminate this issue completely to ensure the international integration roadmap and integrate with the accounting of countries in the region and the world.

2. Analyze current legal regulations on the current loophole on the payment of social insurance, unemployment insurance

2.1 Legal documents

Law on Social Insurance No. 58/2014 / QH13 issued by the National Assembly on 20 November 2014, effective from 01 January 2016.

Decision No. 595 / QD-BHXH, promulgating the process of collection of social insurance, health insurance, unemployment insurance, insurance for labor accidents, occupational diseases, management of social insurance books, health insurance cards, April 14 2017.

Circular No. 47/2015 / TT-BLDTBXH, Guiding the implementation of a number of articles on labor contracts, labor discipline and material liability of Decree No. 05/2015 / ND-CP dated 12 January 2015 of the Government detailing and guiding the implementation of a number of contents of the Labor Code, November 16, 2015.

Law No. 38/2013 / QH13, issued by the National Assembly on November 16, 2013, takes effect from January 1, 2015.

2.1.1. Social Insurance

According to the Law on Social Insurance No. 58, social insurance is a guarantee to replace or partially offset the employee's income when they are reduced or lose their income due to sickness, maternity, labor accidents or occupational diseases, working age or death, based on contribution to social insurance fund. Social insurance schemes include compulsory social insurance (sickness, pregnancy, occupational diseases, retirement, death); Voluntary social insurance (Retirement, Death) and supplementary pension insurance stipulated by the Government. In this article, the author only refers to compulsory social insurance.

The principle of social insurance: According to Article 5 of the Law on Social Insurance, the principle of social insurance is regulated as follows:

- The rate of social insurance is calculated on the basis of the premium, the period of social insurance contribution and sharing between the participants of social insurance.

- Compulsory social insurance premiums shall be calculated on the basis of the monthly wage of the laborers.

- The social insurance fund is managed centrally, uniformly, publicly and transparently; they are used for the right purpose and are accounted independently by the component funds, groups of subjects implementing the wage regime prescribed by the State and the wage regime decided by the employers.

- The implementation of social insurance should be simple, easy, convenient, ensuring timely and full benefits of participants in social insurance.

Subjects participate in compulsory social insurance:

- Employees are Vietnamese citizens working under indefinite-term labor contracts, labor contracts with definite terms, labor contracts on a seasonal basis or for a specific job with the term of full 3 months to less than 12 months.

- From January 1, 2015, persons working under labor contracts with a term of between a full month and under 3 months must also participate in compulsory social insurance;

- Foreign citizens who work in Vietnam have a work permit or a practicing certificate or a practicing certificate granted by competent Vietnamese agencies to participate in compulsory social insurance according to the Government's regulations.

- Employers participating in compulsory social insurance include state bodies, state units, security service; political organizations, socio-political organizations, socio-political - professional organizations, socio-professional organizations, other social organizations; foreign agencies, organizations and international organizations operating in the Vietnamese land; entrepreneurs, cooperatives, individual business, cooperative groups, other organizations and individuals hiring, employing and paying wages to employees.

Social insurance premiums: According to Articles 5, 14, 18 and 22 of Decision No. 595 / QĐ-BHXH, applicable from 01 June 2017, the rate of social insurance premium is regulated in the following rates:

- The deduction for enterprise expenses: 17.5% of the monthly salary paid for social insurance, of which 3% is paid to the maternity sickness fund, 14% to the super fund and death allowance, 0.5% to the accident insurance fund, labor accident, occupational disease.

- The deduction from the salary of the employee: 8% of monthly salaries paid social insurance to retirement and survivors.

Monthly salary for social insurance contribution: As of 01/01/2018, the earnings of employees computed compulsory social insurance include: Salary; allowances (allowances for positions, titles, responsibility allowances, heavy, hazardous and dangerous allowances, seniority allowances, regional allowances, mobile allowances, attractive allowances and the additional amounts that determine the specific amount of money along with the salary agreed upon in the contract of employment and paid regularly in each pay period.

The amount does not include social insurance: Other regimes and benefits such as bonuses as provided for in Article 103 of the Labor Code; bonus for initiative, Mid-shift meal; petrol, telephone, travel, housing, child care, childcare; allowances for bereavement

of employees, marriage of laborers relatives, birthdays of employees, allowances for employees facing difficult circumstances in case of labor accidents, occupational diseases and supports, other allowances shall be recorded separately in the labor contract under Clause 11, Article 4 of Decree No. 05/2015 / ND-CP.

2.1.2. Unemployment Insurance

According to the Law on Employment, effective from 01/01/2015: UI is the regime to compensate part of the employee's income when he / she loses his / her job, supports the apprentice worker, maintains his / her job, finds job on the basis of contribution to the Unemployment Insurance.

Principles of Unemployment Insurance: Ensure the risk sharing between the Unemployment Insurance participants; The rate of Unemployment Insurance contribution shall be calculated on the basis of the wage of the employee; The rate of unemployment insurance is calculated on the basis of the rate of contribution, the time of paying the Unemployment Insurance; The implementation of Unemployment Insurance must be simple, easy, convenient, ensuring timely and full benefits of participants; The unemployment insurance fund is centrally managed, uniform, public, transparent, safe and protected by the State.

Subjects required to participate in Unemployment Insurance:

- The employee must participate in the Unemployment Insurance when working under a labor contract or an indefinite-term contract or working contract; Employment contracts for seasonal work or for a specific job with a term of from 3 months to less than 12 months.

- Employers participating in Unemployment Insurance include state agencies, public non-business units, people's armed forces units; political organizations, socio-political organizations, socio-political organizations - professional organizations, social organizations, socio-professional organizations; foreign agencies, organizations and international organizations operating in the Vietnamese territory; enterprises, cooperatives, households, business households, cooperative groups, other organizations and individuals employing or employing laborers under labor contracts or labor contracts.

Rate of unemployment insurance: According to the provisions of Article 57 of the Law on Employment and guiding documents, specifically as follows:

- Laborers pay 1% of their monthly wage;

- Employers shall pay 1% of the monthly salary fund of the employees who are participating in the Unemployment Insurance.

Monthly salary of Unemployment Insurance contribution: According to the provisions of Article 58 of the Employment Law and guiding documents, the detail is as following:

- Employees subject to the wage regime prescribed by the State, the monthly salary for Unemployment Insurance contribution shall be the wage which shall serve as basis for compulsory social insurance payment.

- Employees pay Unemployment Insurance under the wage regime decided by the unit, the monthly salary for UI contribution is the salary which is the basis for compulsory social insurance is the salary stated in the labor contract.

- From 01/01/2016, the monthly salary for social insurance contribution is the salary and salary allowances as stipulated by the labor law.

- From January 1, 1818 onwards, the monthly salary for social insurance contribution shall be the salary, salary allowances and other supplements prescribed by the labor legislation.

- When the monthly salary of a laborer is more than twenty months' minimum wage of the region, the monthly salary of the Unemployment Insurance contribution shall be equal to twenty months' minimum wage of the region (implemented from 1/1/2015).

2.2. Analysis of advantages and disadvantages of legal documents on social insurance and unemployment insurance policy

In general, the policy on social insurance, the Unemployment Insurance has constantly been supplemented, improved and more suitable with the market economy, contribute significantly to the task of ensuring social security, promoted the social justice and equalized for the sustainable development of the country in the process of reform, development and international integration.

From 01/01/2018, the subjects participating in social insurance, unemployment insurance is extended, people working under labor contracts with a term from a full month to less than 03 months must participate compulsory social insurance. The monthly salary for social insurance contribution is also increased, which is salary, allowances and other supplements as stipulated by the labor law.

In addition, as of January 1, 2015, the revised Criminal Code effective. One of the notable issues is criminal handling of fraudulent behavior, evading social insurance, unemployment insurance and health insurance with sanctions up to 3 billion or 10 years imprisonment. Therefore, employers and workers need to understand their rights and obligations to avoid breaking the law.

Besides the advantages and innovations as above, social insurance and Unemployment Insurance policy of our country also revealed the following limitations:

- The capacity of designing the system is still limited, the development of policies, laws, design organizational structure of implementing social insurance is confusing, inconsistent, not synchronized. Cause of social policy of Vietnam newly formed and developed along with the transformation of economic model from central planning to market

economy, while thinking and awareness of social insurance should have. Process step by step complete. The formulation, completion of social insurance policy requires a long time while we have been doing more than 20 years.

- Characteristics of labor structure in our country are mostly working in areas without labor relations. The income of the majority of people is low and unstable, with high expenditure pressure. The informal social security network based on the traditional family model is also widespread. Therefore, many people are not interested in participating in social insurance.

- The capacity for building and organizing the implementation of the Party's policies and laws of the social insurance in many aspects is still limited. The perception is insufficient and superficial, not considered this work as a pillar of sustainable socio-economic development. The ability to analyze, forecast are still inadequate. It has not done a good job of summing up, summing up practices and inspecting, supervising and handling violations.

- Information and communication work has not been paid much attention. The awareness of social insurance, Unemployment Insurance of the subjects are still limited, especially the sense of rights and responsibilities of social insurance contribution of employers and workers.

3. The situation of avoiding paying social insurance, current unemployment insurance in enterprises

According to the Decision No. 595 / QĐ - BHXH of social insurance of Viet Nam regulations on participants, rate of pay, salary level, way of paying social insurance, health insurance, unemployment insurance ... as follows:

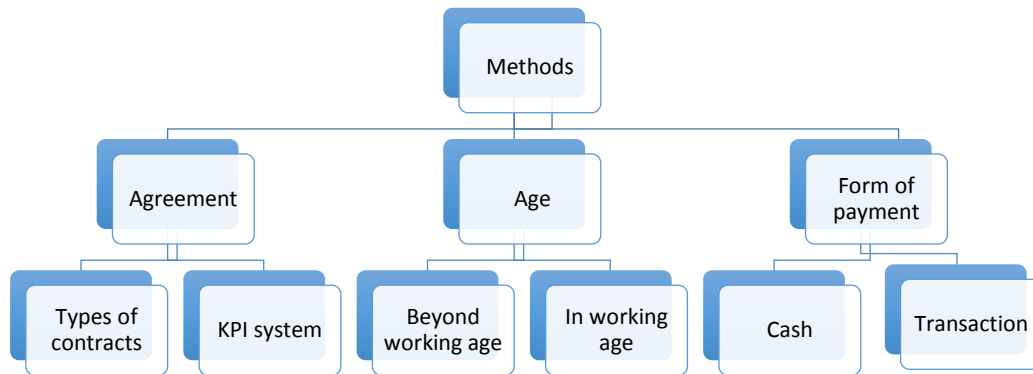
- Persons working under labor contracts or working contracts with indefinite terms, definite term labor contracts or labor state contracts for a definite term of between 3 months and under 12 months.

- Persons working under labor contracts with term ranging from 1 month to less than 3 months (to be implemented from 1/1/2018).

- The manager of the enterprise, the executive manager of the cooperative with salary.

Although the provisions on deduction of social insurance, health insurance, unemployment insurance has been much tighter than before. However, Vietnamese businesses still use a number of ways to avoid paying these amounts to employees to reduce their costs. Specifically, there are some typical examples:

Figure 1. Classification of the avoidance of remittance of salaries to employees of the enterprise



Source: Authors

3.1. By method (To rationalize through contracts or basis of calculation of salary and bonus)

3.1.1. Form of contracts

In practice, businesses are using such contract types to avoid paying employees for social insurance, unemployment insurance: piecework, probation, intern ... or using transfer workforce form between companies of the same owner, cost returned, business fee...

Probation contracts: Normally, businesses will sign a probation contract with a worker for a period of three months. In this three-month period, the employee will not be entitled to be paid remittance of salary from the enterprise. At the end of the three-month period, the enterprise will consider signing the contract to continue or terminating the contract with the employee. There are also a number of businesses signing co-worker contract before signing probation contract. The purpose of signing these types of contracts is to delay to pay remittance of salaries to employees.

Piecework contracts: Because of specific character of some enterprises, the work can be seasonal. Therefore, they use this advantage to sign contracts with employees in the form of piecework. Of course, this type of contract does not entitle employees to participate in social insurance, health insurance and unemployment insurance.

Internship contract: This type of contract is usually performed in large units, in the form of a corporation or corporations. They regularly recruit interns for work positions, conducting several consecutive batches. Interns are usually under-graduated students so the opportunity getting in touch with them makes them feel exciting. The contract still be made but interns will not be paid the same as in the contract.

Due to the illegal unilateral termination of the labor contract to the employees, the employer will have to compensate a large sum of money compare to the base salary of the employee. Therefore, employers also have the means to reduce these risks for them, such as putting employees in disadvantages to make the employee to write resignation letter on their own. As a result, it is said that the employee write resignation themselves and based on resignation letter to make resignation decision.

There are some other ways that businesses are applying to avoid paying social insurance, health insurance, unemployment insurance for employees: a business owner has 2 or 3 companies, they employ a certain number of employees, but each employee will work at one unit for an amount of time but on the payroll of another. Be in that way so that the employees are always in the form of probation, they are not the subject to pay insurance.

In addition, to increase the income of employees in the business without showing the amount of money on the contract, they replaced with absolutely valid documents: business expenses, travel expenses, telephone, internet, diplomatic expenses ...

3.1.2. Through Key Performance Indicator (KPI)

Large enterprises or corporations often set up a system for assessing the quality of work and to pay employees on the basis of that system. They will have a labor contract, specifying the basic salary - which is used to deduct and to pay social insurance. Their actual income, however, will include the salary and the portion paid on the basis of the KPI, and they also balance the KPI based income just enough so that individual employees do not pay personal income tax.

3.2. By age

3.2.1. In working age

Employees in the working age are mainly employed, but employers still make tactic agreements with these workers to avoid paying social insurance for them: for local workers, they will use probationary contracts and the regular in and out of the amount of employees at these enterprises. . Other businesses negotiate with employee to agree with signing 2 labor contracts per person, but the income level does not reach the level to pay social insurance. Many enterprises even use the method that the base salary is written in the labor contract but the employees have to pay insurance on their own.

3.2.2. Beyond working age

Nowadays, this labor force accounts for a small proportion of enterprises. They are people who have fulfilled their labor obligations and already have a pension. However, on the payroll, the list of people beyond of working age is a lot, but they do not actually work, they are acting as collaborators, sales staff, business advisors and their base salary on the payroll is very high to help businesses increase costs but they are not subject to pay social insurance.

3.3. Form of salary payment

3.3.1. Transaction

Nowadays, this is a common form that is applied in enterprises because the payment of salaries to employees through the bank helps information about wages and salaries of enterprises be controlled by the authorities. In practice, however, not all employees' income is received through the bank.

3.3.2. Cash

One of the forms of avoidance of paying social insurance for employees is that enterprises choose to pay or to pay part of their income and monthly allowances to employees in cash. However, this cash payment does not appear on the payroll, and will not even increase the cost of the businesses so the authorities have no grounds for punishment.

3.4. Other ways

Recently, many enterprises use the "many levels" construction of salary scale and payroll, split such salaries into many expense like base salary, salary allowance, allowances and other additions to evade social insurance. Many enterprises stipulate the standards of salary increase, conditions for allowances, bonuses and monthly, quarterly and annual awards very complicated and difficult, it is hard for employees to monitor and supervise the implementation. Many enterprises currently have three types of salary, including: salary for social insurance participation, salary for tax finalization, actual salary. This causes difficulties for state management agencies in managing and examining salary policies for enterprises. In addition, the implementation of regulations on salary scales in enterprises is not high. It has been constructed but not applied or applied incorrectly.

Employees are less interested in paying social insurance, but only pay attention to the income, the result is only when the regime affected by their interest do they know this is too late. Therefore, in order to avoid the damages of benefits, the employee must fully understand the provisions of the law to protect their own interests, especially when signing labor contracts to avoid future damage.

4. Analysis of survey results

In order to accurately identify the current situation of avoiding paying wages to employees in enterprises, the study group has conducted intensive interviews with experts and distributed questionnaires to laborers in enterprises. With the scale of 528 issued, 426 received. After removing the invalid questionnaire, there were 405 ones. The number of experts interviewed: 18 people are chief accountants and financial officers for companies, including 06 chief accountants for joint stock companies, 02 chief accountants of large corporations, 01 Chief Accountant of a Joint Private School and 09 Chief Accountant of Limited Liability Companies.

In addition, we interviewed by issuing questionnaires with the following results:

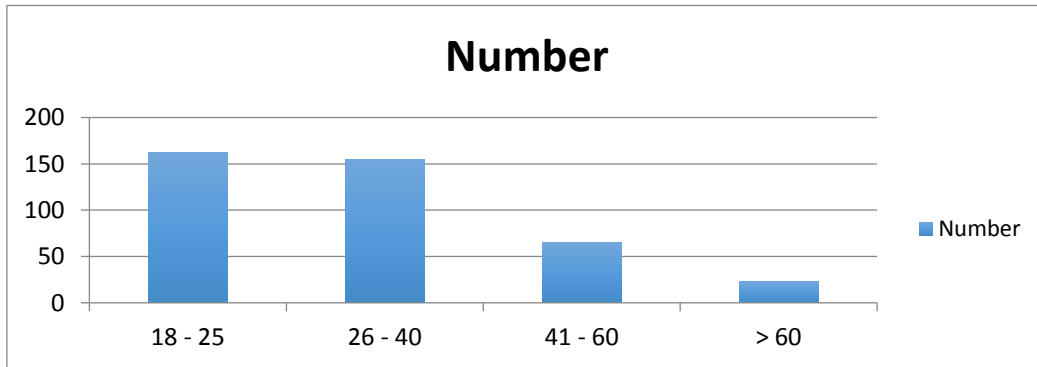
Classified by sex:

Criteria	Male	Female
Number	146	259

Source: Authors

Classified by age:

Figure 2. Survey results by age

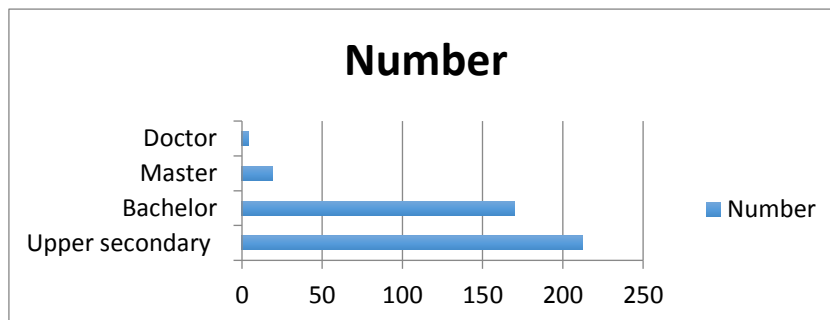


Source: Authors

It can be seen that the respondents with moderate ages make up the majority, from the age of 18-25 years: 162 (40%), 26-40 years: 155 (38.3%). Survey results with the age distribution structure certainly affect the level of knowledge and information received by employees about their own interests.

Divided by Level:

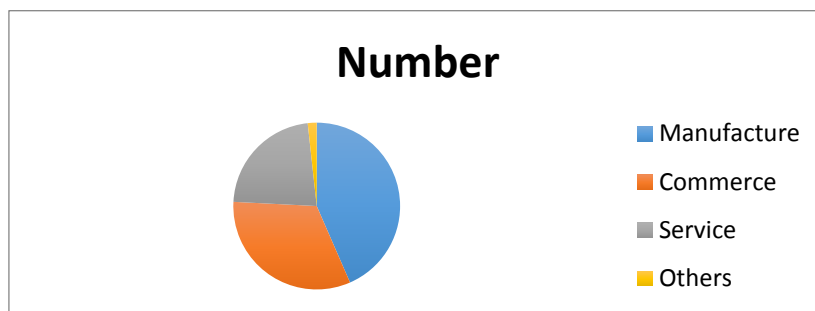
Figure 3. Survey results by level



Source: Authors

Classified by types of business:

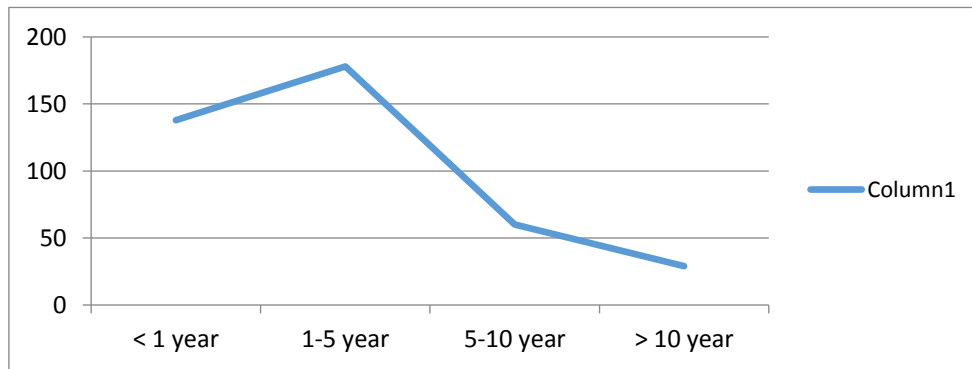
Figure 4. Survey results by type of enterprise



Source: Authors

Classified by the amount of time employees works:

Figure 5. The results of the survey of the number of years employed at the enterprise



Source: Authors

For the survey participants, the study group surveyed the level of understanding of employees with two policies on social insurance, unemployment using Likert scale 5 levels to measure:

Level	1	2	3	4	5
Meaning	Not aware at all	Somewhat aware	Aware	Very aware	Absolutely aware

In general, the results of the survey showed that most of the employees were unaware of the information on social insurance, unemployment insurance policy. The fact is that survey data focus mainly on moderate working age groups and working time is not much so they do not know or have not learned about the benefits of these policies. From those cause, the enterprises deliberately use tricks to avoid obligations to employees. Specific results are as follows:

Table 1. Summary of the results of the survey on the level of knowledge of the employees towards the policy on SI, UI.

Content	Level 1		Level 2		Level 3		Level 4		Level 5		Average
	quantum	%	quantum	%	quantum	%	quantum	%	quantum	%	
Related to social insurance policy											2.5
(1) Those who have to pay compulsory social insurance from 01/01/2018 are extended to those who work under labor contracts with a term ranging from one month to less than three months.	151	37.3	95	23.5	54	13.3	88	21.7	17	4.2	2.3
(2) From 01/01/2018: Compulsory social insurance contribution = Salary + Salary allowance + Additional allowances	139	34.3	88	21.7	67	16.5	99	24.4	12	3.0	2.4
(3) The Criminal Code 2015 has supplemented the criminal law provisions related to the act of evading social insurance, health insurance, UI for workers (fines up to 07 years with the obligor but not social insurance for employees)	152	37.5	83	20.5	73	18.0	88	21.7	9	2.2	2.3
(4) The regime of social insurance	120	29.6	81	20.0	67	16.5	116	28.6	21	5.2	2.6
(5) Conditions for enjoying the maternity regime	121	29.9	55	13.6	100	24.7	105	25.9	24	5.9	2.6
(6) Eligibility for one-time childbirth allowance	118	29.1	77	19.0	111	27.4	75	18.5	24	5.9	2.5
(7) The level of lump-sum benefit at the time of childbirth and the level of maternity benefit	125	30.9	69	17.0	108	26.7	83	20.5	20	4.9	2.5
(8) Duration of entitlement to childbirth	112	27.7	70	17.3	93	23.0	91	22.5	39	9.6	2.7
Related to Unemployment Insurance policies											2.4

Content	Level 1		Level 2		Level 3		Level 4		Level 5		Average
	quantum	%	quantum	%	quantum	%	quantum	%	quantum	%	
(1) Objects of compulsory participation in Unemployment Insurance	112	27.7	100	24.7	91	22.5	81	20.0	21	5.2	2.5
(2) Conditions for Unemployment Insurance employees to receive unemployment benefits	121	29.9	111	27.4	78	19.3	78	19.3	17	4.2	2.4
(3) Dossiers of application for unemployment benefits; duration, time of unemployment benefits	113	27.9	105	25.9	96	23.7	81	20.0	10	2.5	2.4
(4) The monthly allowance for unemployment benefits is 60% of the average monthly salary paid for unemployment insurance premiums paid for the six consecutive months before unemployment.	142	35.1	105	25.9	72	17.8	65	16.0	21	5.2	2.3
(5) Regulatory about notice of finding jobs; to stop enjoying unemployment benefits; to reserve the time for unemployment contribution; transfer to unemployment benefit	145	35.8	114	28.1	92	22.7	46	11.4	8	2.0	2.2
(6) Conditions, time and level are supported by vocational training	135	33.3	108	26.7	92	22.7	58	14.3	12	3.0	2.3
(7) Consultancy, job introduction	126	31.1	113	27.9	82	20.2	65	16.0	19	4.7	2.4
(8) Rights and obligations of employees on unemployment insurance	121	29.9	102	25.2	101	24.9	61	15.1	20	4.9	2.4
(9) Rights and responsibilities of employers about Unemployment Insurance	117	28.9	103	25.4	95	23.5	71	17.5	19	4.7	2.4
(10) Issues for workers to take care of unemployment benefits should be noted	126	31.1	122	30.1	100	24.7	46	11.4	11	2.7	2.2

The survey showed that the average knowledge level of the employees for the social insurance policy was only 2.5 (medium) and the average knowledge level of the employee for the unemployment policy was only 2.4 (below average). Therefore, the activity of business owner trying to shirk is well founded, because they know their employees are not well aware of these policies so they deliberately ignore or use terms to cover this behavior in Labor contracts.

5. Conclusions and Recommendations

5.1. Conclusions

From the employer perspective:

- The level of understanding of workers on issues related to social insurance, unemployment insurance is low so businesses take advantage of that situation to manipulate the non-compliance with regulations on deduction of contributions to employees.

- The legal documents are somewhat lax to create the loophole that the owner of the company to take advantage of the behavior in his favor without benefit to workers.

- Companies still believe that the information of the Company is not connected closely between the tax and agencies: Insurance, Banking.

- Penalties being detected are not large enough for businesses to comply strictly with regulations.

From the employee perspective:

- The number of questionnaires is mostly from workers who are low level and moderate age so they do not know or learn about social insurance and unemployment insurance policies of the government. Many workers are not fully aware of the meaning and importance of social insurance, want to have short-term income, do not aware of the need and urgency of social insurance when they are old or sick in the future.

- Some workers under 60 but over 40 do not want to participate in social insurance because the time to pay for social insurance will extend their working time.

- Some workers over the age of 60 have fulfilled their labor obligations and have a pension, when they are working to have more income, they do not need to pay social insurance to care about this issue anymore. Employees who are hired for personal information even find it "fun" as it is good for them.

5.2. Recommendations:

The Ministry of Finance and functional agencies should soon promulgate specific regulations on the sanctioning of violations of regulations on deduction of wage amounts paid by enterprises: including financial penalties and prosecution Criminal duty.

It is necessary to have a perfect information connection system from tax authorities, social insurance agencies, customs and banks on the implementation of the regime of deduction of these amounts so as to minimize the maximum number of enterprises available.

Violators are aware that the Tax and Insurance Agency, the Bank may be separated from each other on the information search of businesses.

Perform combine multiple solutions from mobilization, audit and inspection to the lawsuit to the court of enterprise evading payment of social insurance as a benefit of employees as well as users in enterprises and units. In cases where enterprises violate the social insurance law many times, may be prosecuted criminal liability under Article 216 of the Criminal Code. At the same time, it is recommended to set up a labor court and have a labor law, and social insurance should be concentrated in big cities, labor-intensive provinces where labor conflicts and labor relations occur. Complex forms of implementation of social insurance law.

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Selection of Modeling for Quality Assurance of Commercial Banking Services in Vietnam

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Abstract

This study synthesizes models of assessing the quality of banking services. The study also identifies the advantages of using assessment models while also limiting the use of these models in Vietnam. Based on that assessment, this study uses the BANKSERV model (Avkiran, 1994) and presents five groups of factors that influence the quality of banking services and using this model in the case of Bank of Investment and Development of Vietnam. These include: staff, utility, reliability, information, counter services. After applying the analytical model, the research results showed that the "staff" component had the greatest impact on the quality of BIDV's e-banking services, followed by "utility", "information", "trust in the end is the" service counters "component.

Keywords: *Banking services, Bankserv, Quality, Modeling for quality assurance.*

1. Introduction

Nowdays business context has changed dramatically. The exchange and sharing of information is quicker and more convenient than before, enabling positive support for maintaining a broader relationship with trading partners and customer networks. The process of international integration has opened up many opportunities, but also posed many challenges for Vietnamese commercial banks when they have to compete with foreign credit institutions with real experience. As well as financial strength with strong technology with many times more modern than commercial banks in the country. This has prompted local managers and researchers to continually strive to find solutions that enhance the competitive

edge of the business and one of the issues that attract the attention of researchers. In the country is the quality of banking services. There are quite a number of studies in the world that deal with quality assessment models. In this article, we will focus on research and selection of appropriate models to assess the quality of applied services for the banking industry in Vietnam..

2. Liturature Review

Service quality is a important suffix for the current and development of any commercial Bank. Research for the commodity services of quality services made from the multiple years bring the development of the information and execut the bountt specific is a development and check the quality of quality services in the top bank different on the world.

Before 80s, there were some studys as Cardozo (1965), Howard & Seth (1969), Oliver (1977), ... had been next problem of the quality service, mainly derived from commodity quality and quality metrics in favor of technical indicators, but not yet proven in practice so far is still less widely available (Brady & Cronin, 2001). However, since the 1980s, research on service quality has been shown in a different approach than before, in which have the Gronroos's research (1984), Parasuraman (1985, 1988, 1992), Cronin & Taylor (1992), ... It has contributed to many other researches related to quality of service. The following are some of the service quality assessment models that the author refers to.

Model of technical quality - function of Gronross.

Businesses need to understand how customers perceive the quality of service they provide, and to understand and analyze the factors that affect service quality. In order to achieve customer satisfaction, in the quality management of services, enterprises need to combine the quality of expectations and perceived quality. Gronroos (1984) argues that the quality of a business's service is determined by three components: Technical quality, functional quality, and image. Specifically:

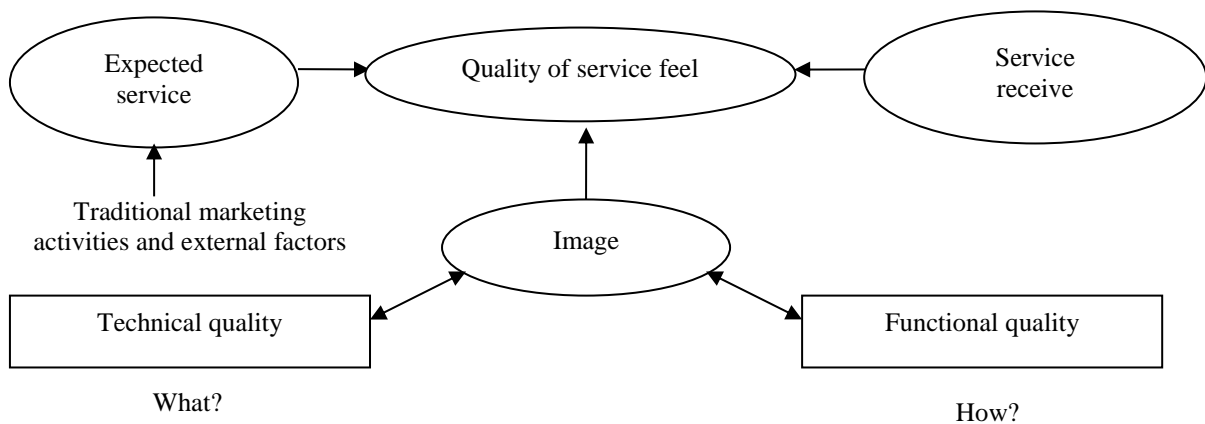
- Technical quality: Is the value that the customer actually receives from the service provider (what is the customer receiving?)

- Functional quality: Shows how the service is delivered to consumers by the service provider (how does the customer receive the service?)

Image is important to the service provider and this factor is built primarily on two components of technical quality and functional quality. Gronroos (1984) argues that customer expectations are influenced by factors such as traditional marketing (advertising, public relations, pricing), and external factors (practice, conscience, word of mouth), in which word of mouth has a significant impact on potential customers than traditional

marketing and emphasizes that service quality research must be based on from a consumer point of view.

Figure 1: Technical / Functional Model of Gronroos (1984)



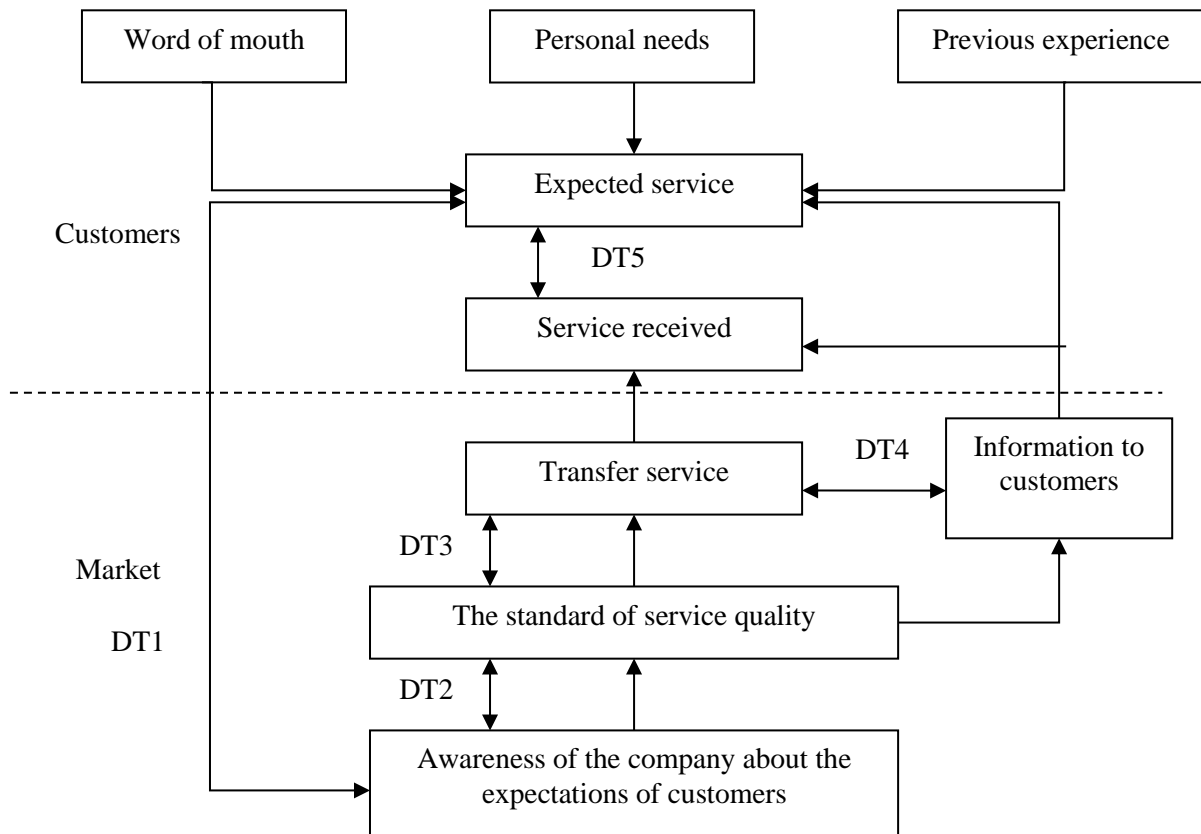
Source: Gronroos (1984)

This model helps us to discover that the quality of service depends on the quality of the technique, the quality of the function and the image of the company. Functional quality is more important than technical quality. Data for analysis in this model were collected from 219 banks, insurance, restaurants, airlines / transport, repair / maintenance, tourism, public services. This proves that the model is not yet in depth in evaluating the quality of the bank, which is an assessment of the quality of services of enterprises in general. In addition, the limited model has yet to provide an explanation of how quality and technical quality is measured.

Distance model of service quality of Parasuraman

Parasuraman et al. (1985) found that service quality was the distance between the expectations of customers and their perceptions when used through the service. The problem is how to measure distances between different levels by using a standard measurement tool, which factors affect those distances and how distances differ. between the industry? The quality of services model based on the analysis of service quality parameters of Parasuraman et al. (1985) is shown in Figure 2.

Figure 2: Distance model of service quality by Parasuraman et al. (1985)



Source: Parasuraman et al. (1985)

Specifically:

- Distance 1 (DT1): Distance between the perception of the company on the expectations of customers with the expectations of customers.
- Distance 2 (DT2): Distance between the company's perception of customer expectations and service quality standards.
- Distance 3 (DT3): The distance between the service standard and the actual service provided to the customer.
- Distance 4 (DT4): The distance between the quality of service provided and the quality of service communicated to the customer.
- Distance 5 (DT5): The distance between customer service received and customer expectations for service.

By 1988, this model was named the SERVQUAL model, used to assess customer satisfaction for service quality and to reduce the 10 quality of service (reliability, responsiveness, capacity service, access, courteousness, information, credibility, safety, knowledge of customers, tangible means), the five characteristics are: reliability, ability to meet, capacity to serve, empathy and tangible means.

The advantage model is an analytical tool that allows managers to systematically determine service quality gaps between a series of variables that affect quality of supply. Ability to assist managers in identifying relevant quality of service elements from a customer perspective. However, the model also has limitations that do not explain the clear measurement sequences for measuring distances at different levels. In addition, this model was built based on the Gronross Nordic quality model, data collected for analysis are also from enterprises, companies, banks, etc. Therefore, when applying this model In assessing the quality of banking services in Vietnam, accuracy is not high.

Model BANKSERV of Avkiran

The BANKSERV model was developed by Avkiran (1999), adapted from SERQUAL to suit the banking industry in Australia. It is a tool designed to allow customers to reflect their expectations and perceptions in a single report. It can avoid the psychological difficulties that occur in SERQUAL. With 17 content of service quality, the BANKSERV model is classified into four categories:

- Staff conduct: The transaction staff represents the service of the bank and directly affects the customer, creating a good or bad image of the bank. The impact aspects of the transaction staff include: willingness to help, service timelines, greetings, customer attention, courtesy, employee uniforms, and apologies for errors.

- Credibility: Trust represents trust in the relationship between banker and customer. Trust consists of employees who report changes in customer issues of concern, correct errors of employees and customers feel safe in transactions.

- Communication: Expressed in oral and written communication between bank staff and customers. The attributes of communication include employee knowledge of the bank's products and services, helping clients learn how to reduce costs, and assess clients for staff advice. , types of accounts, available investments and execution time.

- Access to teller services: There are enough staff available during banking hours. Aspects include the number of transactors and staff during peak hours.

It can be seen that the BANKSERV model is a model for evaluating the quality of banking services, so that it can be based on this model to apply the assessment of the quality of banking services in Vietnam. However, Avkiran's research model has stopped specifying the components that affect the quality of banking services, but not the importance of each factor..

Quality service model of Sureshchander

Derived from the authors' critique of Parasuraman (1985), SERVQUAL's measurement of service quality measures, Sureshchander (2001) cautiously conducted a review of 22 observational variables SERVQUAL shows that most of the observation variables show the interaction between employees and customers during the service delivery process and the remainder express the tangible aspects (equipment, facilities, etc...). This measurement tool seems to have overlooked other important elements of service quality, namely: product or service type, core / service delivery system (the non-human factors) and social responsibility of the service provider organization. Therefore, to generalize the

measurement of service quality, Sureshchander (2000) proposed a service quality measurement model in the customer service process consisting of 41 observation variables with 5 components as follows

Core service / service product: Core banking services include deposit services, ATMs, telephone banking, auto loans, (2) Human element of service delivery: Representing the delivery of banking services as promised by bank employees, the effectiveness of the use of skills and ability of the bank staff when a serious incident occurs. Bank staff are always willing to help and meet the needs of customers, make customers feel safe and ensure the transactions of customers, caring customer care by always beneficial. (3) Systematization of service delivery: Representing the standardization and simplification of service delivery to banking services. Coming to customers in the quickest time without any problems. Enhance technological capabilities (eg, telephone banking, Internet banking, wireless banking, etc.). (4) Tangibles of service: Expressing ambient environmental conditions such as temperature, ventilation, noise, equipment density furniture at the bank's transaction points must create comfort for customers when dealing with banks; Other visual cues such as logos, billboards, leaflets, documents and other artifacts in the bank, costumes - the appearance of the bank staff must show attractive, neat and professional. (5) Social responsibility: Customers are treated equally when coming to the bank. Distribution network of the bank should be located in convenient locations for customers to trade; Responsibility must be disclosed to the public between bank employees such as: on time, regular, honest and no strike, ... These five components play the most important role in the rules. Serving even if this process has other components involved and has a large correlation with customer satisfaction.

Although this measurement tool is generic to all types of services, it is designed to address specific banking issues. Moreover, the expectations of customers in developing economies (eg India) may differ from the expectations of customers in developed countries so it is possible to favor the culture that plays a role in the research results.

The findings and limitations of these models are summarized in Table 1 below:

Table 1: Advantages and limitations of service quality assessment models

No	Model	Detection / Application	Confined
1	Model of technical quality - function of Gronross.	Model helps us to discover that quality of service depends on technical quality, functional quality and company image. Functional quality is more important than technical quality.	<ul style="list-style-type: none"> - Data for analysis in this model were collected from 219 clients of banks, insurance, restaurants, airlines / transport, repair / maintenance, tourism, public service. This proves that the model is not yet in depth in evaluating the quality of the bank, which is an assessment of the quality of services of enterprises in general. - The limited model has not yet provided an explanation of how quality and technical quality is measured.

No	Model	Detection / Application	Confined
2	Distance model of service quality of Parasuraman	<ul style="list-style-type: none"> - This is an analytical tool that allows managers to systematically determine service quality gaps between a series of variables that affect quality of supply. - Ability to assist managers in identifying relevant quality of service elements from a customer perspective. 	<ul style="list-style-type: none"> - No clear sequencing of measurements to measure distances at different levels. - Based on Gronross's Nordic quality model, data collected for analysis are also from companies, companies, banks, etc. Therefore, when applying this model to quality assessment services in banks in Vietnam, the accuracy is not high.
3	Model BANKSERV of Avkiran	<ul style="list-style-type: none"> - Is a model to assess the quality of services at banks. - The service quality measurement model depends on four components: service personnel; trust; information; access to services. 	The Avkiran research model has stopped specifying the components that affect the quality of banking services, but not the importance of each factor.
4	Quality service model of Sureshchander	Research results show that the quality of service and satisfaction variable for all five components.	Although this measurement tool is generic to all types of services, it is designed to address specific banking issues. Moreover, the expectations of customers in developing economies (eg India) may differ from the expectations of customers in developed countries so it is possible to favor the culture that plays a role in the research results.

The research on the quality of banking services in Vietnamese commercial banks in the past years has tended to progress but in general the authors' researches are mainly presented in two forms research methods of servqual service quality of parasuaman (1988) and comparative study of servqual measurement model with Gronroos Nordic Model (1984), by supplementing some of the criteria / evaluate the service quality against the criteria / scale of the original models to suit the cultural context in Vietnam market such as the works of Nguyen Duc Tuan (2008), Le Van Huy (2008), Nguyen Van Thong (2010), Van Dinh (2012). Research based on two models of Parasuraman (1988) and the Nordic model of Gronroos (1984) have been studied by many authors, and these two models are obsolete and sometimes out of date. in fact nowadays. So the author does not favor these two models, but the other two models are Avkiran's "Bankserv model" (1994), and "Model of relationship between service quality and satisfaction". Sureshchandar (2001).

The Bankserv model is a rather new model, moreover it is highly usable in other countries. For any bank, employee factors, information transfer from bank to customer, trust in trees and access to counter services are all factors that customers are very interested in using. any service of any bank. Moreover, the Bankserv model has the advantage of being easy to understand, accessible and quite simple. The Bankserv scale is fairly clear and short, not as long and complex as the Servqual scale, saving time and making it easier for respondents.

For all of these reasons, the team decided to use the Aviran Bankserv model to measure service quality at commercial banks in Vietnam. At the same time, the research team also focused on scaling up the service quality measurement model of Avkiran (1994) by adjusting some of the service quality criteria / scales to the criteria The scale of the original models to match the cultural context in Vietnam market.

Applying Bankserv model at Bank for Investment and Development of Vietnam (BIDV)

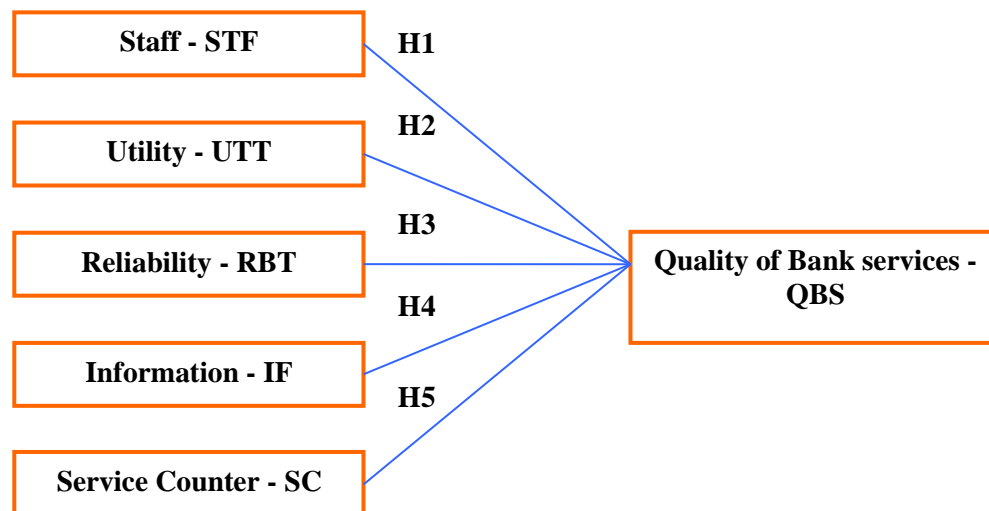
The model is based on the BANKSERV model (Avkiran, 1994) and combined with some papers by local authors such as Do Tien Hoa (2007). The model is as follows:

The application of Bankserv model at the Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV)

The model is built based on the BANKSERV Model (Avkiran, 1994) (combined with several researches of authors such as Do Tien Hoa 2007...)

The proposal of the model is as follow:

Figure 3: The proposal model for the research



Source: Author

The impact of each factors on the quality of service:

- The impact of the ‘‘Staff’’ factor on the quality of service: the employee factor includes attitude, outfits that has positive impact on customers’ perception, which affects the quality of the service, therefore this factor is brought into the research model. The

assumption is stated as follow: H1: Employee factor has a positive impact on the quality of the BIDV Bank service.

- The impact of the ‘‘Utility’’ factor on the quality of service: includes the relations to the transaction network, location of transaction, time of transaction, equipment and transacting procedure. These characteristics have an impact on the quality of the service. Therefore, the ‘‘utility’’ factor is brought into the model to measure the influence of the impact on the quality of the BIDV Bank service. The assumption is stated as follow: H2: Utility factor has a positive impact on the quality of the BIDV Bank service.

- The impact of the ‘‘Reliability’’ factor on the quality of service: this factor is brought into the model to measure the influence of reliability on the BIDV Bank service. The assumption is stated as follow: H3: Reliability factor has a positive impact on the quality of the BIDV Bank service.

- The impact of the ‘‘Information’’ factor on the quality of service: this factor is brought into the model to measure the influence of information on the BIDV Bank service. The assumption is stated as follow: H4: Information factor has a positive impact on the quality of the BIDV Bank service.

- The impact of the ‘‘Service counter’’ factor on the quality of service: this factor is brought into the model to measure the influence of information on the BIDV Bank service. The assumption is stated as follow: H5: Service counter factor has a positive impact on the quality of the BIDV Bank service.

3. Results and Discussion:

In terms of gender, there are 53.5% female and 46.5% male customers

In terms of age, the age of customers using the BIDV’s e-bank service varies, but mostly at around 18 to 29 (48.4%). At the age of 30-39, the number of customers using the service takes up 30.8%. Customers aged 40-49 take up 15.4% and that of over 50-year-old customers take up only 5.4%.

In terms of income, each income has quite similar percentage.

In terms of educational level, customers with university degrees take up the highest proportion 50.3%, followed by college degrees at 26.6% of the total, other levels of education have lower percentage.

Table 2: Basic characteristic of customers participate in the survey

Categories	Criteria	Frequency	Percentage (%)
Gender	Male	145	46.5
	Female	167	53.5
total		312	100
Age	18-29	151	48.4
	30-39	96	30.8
	40-49	42	15.4
	50 and above	17	5.4
Total		312	100
Educational level	High school graduate	12	3.8
	Intermediate	43	13.8
	College	83	26.6
	University	157	50.3
	Post graduate	9	2.9
	Other	8	2.6
Total		312	100
Monthly income	Under 3 million	77	24.7
	3-5 million	72	23.1
	5-8 million	73	23.4
	Over 8 million	90	28.8
Total		312	100
Level of transaction	Very frequently	74	23.7
	Frequently	74	23.7
	Occasionally	79	25.3
	Rarely	85	27.2
Total		312	100

Source: Author's research data

Table 3. Cronbach's Alpha testing results with other factors in the model

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
STF1	87.27	208.475	.488	.887
STF2	87.17	208.148	.652	.884
STF3	87.36	209.690	.455	.888
STF4	87.18	211.007	.389	.889
STF5	87.51	214.315	.210	.895
STF6	87.30	211.452	.394	.889
STF7	87.25	209.005	.453	.888
UTT1	87.31	208.287	.458	.887
UTT2	87.31	207.843	.482	.887
UTT3	87.20	206.007	.683	.883
UTT4	87.31	208.819	.434	.888
UTT5	87.34	208.708	.443	.888
UTT6	87.44	210.909	.382	.889
RBT1	87.30	210.418	.397	.889
RBT2	87.40	209.971	.429	.888
RBT3	87.28	208.285	.497	.887
RBT4	87.37	208.884	.483	.887
IF1	87.22	207.808	.477	.887
IF2	87.37	208.627	.470	.887
IF3	87.22	208.647	.450	.888
IF4	87.21	210.114	.428	.888
IF5	87.22	210.740	.404	.889
IF6	87.26	217.240	.155	.895
SC1	87.28	212.131	.352	.890
SC2	87.29	211.077	.410	.888
QBS1	87.51	208.444	.802	.883
QBS2	87.48	207.106	.772	.883
QBS3	87.50	208.392	.794	.883

Source: Author's research data

As seen from the table, the total variable correlation of STF5 and TT6 is less than 0.3. Therefore, we need to remove these 2 variables from the model to increase the reliability of the scale, continue to revise 1 more time after removing the 2 variables STF5 and TT6, we have table 3

Table 4. Cronbach's Alpha testing results with other factors in the model after removing 2 variables

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
STF1	80.93	191.594	.488	.895
STF2	80.83	191.145	.658	.892
STF3	81.02	192.923	.449	.896
STF4	80.84	193.745	.398	.897
STF6	80.96	194.500	.392	.897
STF7	80.91	192.436	.442	.896
UTT1	80.97	191.125	.467	.895
UTT2	80.97	190.900	.485	.895
UTT3	80.86	189.290	.681	.891
UTT4	80.97	192.112	.428	.896
UTT5	81.00	191.431	.455	.896
UTT6	81.10	193.498	.396	.897
RBT1	80.96	193.359	.400	.897
RBT2	81.06	192.610	.443	.896
RBT3	80.94	191.247	.503	.895
RBT4	81.03	191.903	.486	.895
IF1	80.88	191.106	.472	.895
IF2	81.03	191.928	.463	.895
IF3	80.88	191.721	.451	.896
IF4	80.87	193.401	.419	.896
IF5	80.88	193.684	.407	.897
SC1	80.94	195.035	.354	.898
SC2	80.96	194.030	.412	.897
QBS1	81.17	191.537	.805	.891
QBS2	81.14	190.169	.779	.891
QBS3	81.16	191.468	.797	.891

Source: Author's research data

Hence, after removing STF5 and TT6 variable form the model, we can see the total variable correlations are over 0.3. At the same time, all Cronbach's Alpha coefficients are larger than 0.6. Hence, the scale after removing the variables is reliable and is continued to be used on the next steps.

After running the model to analyse the EFA factor with individual variables, we remove 2 variables TI3 and NV2, because these variables are uploaded to both factor.

Table 5: Structural matrix before removing the TI3 and NV2 variable
Rotated Component Matrix^a

	Component				
	1	2	3	4	5
UTT2	.786				
UTT4	.779				
UTT6	.712				
UTT3	.678		.570		
UTT5	.657				
UTT1	.647				
STF7		.787			
STF4		.732			
STF1		.726			
STF6		.722			
STF3		.721			
IF5			.770		
IF4			.733		
IF3			.714		
IF2			.697		
IF1			.598		
RBT4				.742	
RBT1				.728	
RBT3				.721	
STF2		.579		.673	
RBT2				.662	
SC1					.845
SC2					.827

Source: Author's research data

Continue to run the analysis discovering EFA factor, second time, we have:

Table 6. Structural matrix after removing the TI3 and NV2 variable
Rotated Component Matrix^a

	Component				
	1	2	3	4	5
STF7	.793				
STF1	.737				
STF6	.732				
STF4	.724				
STF3	.717				
UTT2		.767			
UTT4		.758			
UTT6		.737			
UTT1		.677			
UTT5		.665			
IF5			.794		
IF4			.715		
IF3			.706		
IF2			.690		
IF1			.625		
RBT4				.766	
RBT1				.745	
RBT3				.711	
RBT2				.652	
SC1					.844
SC2					.830

Source: Author's research data

The factor loading of 5 factors are formed based on the minimum value of over 0.3, satisfying the conditions for the research to achieve practical implications (Hair, 1998). At the same time, the difference between factors reach a minimum of 0.3, satisfying the conditions so that each observed variable exists in the model focusing on explaining one single factor. With said indicators, it can be concluded that the factor analysis model can have practical implication, high ability to explain facts and forming 5 factors with meaning:

- Factor F1 – Employee with 5 observed variables: STF1, STF3, STF4, STF6, STF7.
- Factor F2 – Information with 5 observed variables: IF1, IF2, IF3, IF4, IF5.
- Factor F3 – Utility with 4 observed variables: RBT1, RBT2, RBT4, RBT5.
- Factor F4 – Reliability with 4 observed variables: UTT1, UTT2, UTT3, UTT4.
- Factor F5 – Service counter with 2 observed variables: SC1, SC2.

The result of the factor discovering research includes 5 individual parts: Staff, Utility, Reliability, Information and Service counter after removing variables is as follow: Total variances explained satisfies the conditions according to Gerbing & Anderson (1998); the total variance likely to be explained reaches 60.873% of the total variation of the survey. In other words, the ability to explain while applied to practical model reaches 60.873% of the real value. All 5 factors satisfy the condition of the Eigenvalue indicator reaching over 1 (Gerbing & Anderson, 1998) in order to form factor with statistical significance.

The Barlett’s test on the suitability of factor analysis research of the 5 factors. The results show the KMO and Barlett’s tests show the KMO indicator is 0.822 and the value of Sig test is 0. These indicators satisfy the conditions for the analysis model to reach high suitability in researching.

Results of EFA’s factor discovering analysis to the service quality variable

The results of the analysis show that the Eigenvalue indicator is formed so that the Service quality factor reaches 2,645, the Total variance explained reaches 82.157% (over 50%), the KMO and Barlett test reaches 0.747 with the implication level reaches sig = 0. The factor loading reaches a minimum of 0.906. All mentioned indicators satisfy the conditions so that the factor discovering analysis meets the statistical meaning and high practical applicability during the analysing process.

Table 7. EFA analysis results for the variable Quality of service

Total Variance Explained						
Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.465	82.157	82.157	2.465	82.157	82.157
2	.294	9.810	91.967			
3	.241	8.033	100.000			

Source: Author’s research results

Pearson correlation results

Pearson correlation analysis is one of the steps to analyse quantitative SPSS. Usually, this step will be carried out before the regression analysis. While conducting the Pearson correlation analysis, we have table:

Table 8. Pearson correlation results**Correlations**

		STF	IF	SC	UTT	RBT	QBS
STF	Pearson Correlation	1	.232**	.245**	.174**	.392**	.592**
	Sig. (2-tailed)		.000	.000	.002	.000	.000
	N	312	312	312	312	312	312
IF	Pearson Correlation	.232**	1	.261**	.290**	.329**	.597**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	312	312	312	312	312	312
SC	Pearson Correlation	.245**	.261**	1	.325**	.231**	.408**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	312	312	312	312	312	312
UTT	Pearson Correlation	.174**	.290**	.325**	1	.317**	.603**
	Sig. (2-tailed)	.002	.000	.000		.000	.000
	N	312	312	312	312	312	312
RBT	Pearson Correlation	.392**	.329**	.231**	.317**	1	.496**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	312	312	312	312	312	312
QBS	Pearson Correlation	.592**	.597**	.408**	.603**	.496**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	312	312	312	312	312	312

Source: Author's research results

As seen from the table, the sig between independent variable and assisting variable is smaller the 0.05, therefore no variables are removed from the model.

Multivariate regression results

- R square is 0.74 = 74%. Hence the variables Employee, Utility, Reliability, Information and Service counter are put into running the regression affecting 74% of the change of BIDV Bank service quality

- Testing sig F = 0.00 < 0.05, therefore the regression model has a wider meaning
 - Regression without any factors removed because the testing sig t of each independent variable is smaller than 0.05.

- VIF coefficient of independent variables is smaller than 10, therefore no multicollinearity occurs.

- Constant in the regression equation represents the slope, it does not go with the variable so it doesn't affect to equation. Especially the models using Likert scale, this constant does not have the comment meaning, so the sig of the Constant, bigger or smaller than 0.05, positive or negative, all unimportant.

- Non-standardized regression equation:

$$QBS = -0.149 + 0.308STF + 0.273IF + 0.052SC + 0.288UTT + 0.069RBT$$

- Standardized regression equation:

$$CLDV = 0.391STF + 0.345IF + 0.078SC + 0.381UTT + 0.09RBT$$

Looking at the standardized regression equation, we can see that the Employee factor has the most significant impact on the BIDV Bank service quality. The second most influential factor is the Utility factor, followed by Information factor, Reliability factor and lastly, Service counter factor.

In recent years, BIDV is developing its retail system, retail customers and small and medium business which is the main target of BIDV in recent years as well as in the future. Therefore, the improvement of the banking service quality to satisfy these retail customers is crucial. From 2015 to 2017, there have been positive changes in the BIDV's results of operation.

Table 9. Operational results of BIDV 2015-2017

Unit: millions VND

Year	2015	2016	2017	2016 compared to 2015	2017 compared to 2016
Net income	19.314.969	23.434.595	30.955.331	21,33%	32,09%
Net profit from business activities	13.624.988	16.907.435	23.512.483	24,09%	39,07%
Profit after corporate income tax	6.376.756	6.228.856	6.945.586	11,51%	-2,32%

Source: author's analysis

The revenue increase significantly through the years, 2016 net income increased to 21,33% compared to 2015, 2017 was also a huge leap for BIDV when the net income reached 30.995.331 million VND, increased by 32,09% compared to 201. Thanks to that, the profit of BIDV also increased.

As for the accounting balance of BIDV 2015-2017, the author has analyzed and generalized as follow:

Table 10. Accounting balance of BIDV 2015-2017

Unit: millions VND

Year	2015	2016	2017	2016 compared to 2015 (%)	2017 compared to 2016 (%)
Short term assets	695.491.203	829.401.979	1.021.414.355	19,25%	23,15%
Long term assets	155.178.446	177.002.171	180.869.488	14,06%	2,18%
Total assets	850.669.649	1.006.404.150	1.202.283.843	18,31%	19,46%
Total debt	808.334.189	962.259.901	1.153.449.833	19,04%	19,87%
Equity	40.949.722	42.540.497	45.961.294	3,88%	8,04%
Interests of minority shareholders	1.385.738	1.603.752	2.872.716	15,73%	79,12%
Total resources	850.669.649	1.006.404.150	1.202.283.843	18,31%	19,46%

Source: author's analysis

Overall, the assets and liabilities of BIDV increased in 2015-2017. Total assets in 2017 reaches around 1.202.284 billion VND, increased by 19,25% compared to 2016, continues to remain the largest bank on the market. The increase in the scale shows that BIDV is developing. Additionally, based on the press information no. 11/2018, business cards also gain achievements: net income in card activities increased by 37%, credit card sale hitting 47%, total sale growth increased by 25%. Notably, the increase in net domestic card is 1,37 times higher than 2016. Total outstanding credit and investment reaches 1.154.154 billion VND, including the TCKT credit debt, individuals reach 862,604 billion VND, increased by 17% compared to 2016, accounting for 13.7% market share of the whole industry. The total of capital reached 1,124,961 billion VND, in which the organization resource and the population reached 933.834 billion VND, increased by 17.4% compared to 2016, accounting for 12,8% of the entire banking industry. The retail activities with retail debt raised by 35%, accounting for 30% of the total debt, retail capital increased by 19%, accounting for 55% of the total, the total retail net income accounted for 31% of total net income.

With this tremendous growth, the expansion must go with quality assurance, improve financial capability, diversify ownership, focusing on strategic sale and complete capital increase from released share for foreign investors. BIDV's strategic goal in 2018

is to strive to reconstruct income, continue to diversify clients background, continue to implement organizational conversion that goes along with improving quality of staff, reduce branch model and focus the resource for business activities. In order to accomplish these goals, BIDV needs to take measures to improve the quality of service, to meet the needs and satisfaction of customers when using BIDV's services. Not only will that help the bank keep its customers but can also expand the customer network as one of the strategies of BIDV in 2018.

4. Conclusion

The study has shown how the Bankserv model is used to evaluate the quality of service of BIDV with 5 factors that has massive impact on the quality of e-bank service, which are: Staff, Utility, Reliability, Information, Service counter. Results show that the 'Staff' factor has the strongest impact on the quality of BIDV's e-bank service, followed by 'Utility', 'Information', 'Reliability' and finally 'Service counter'. After identifying the level of impact of each factors, the author has recommended some measures to improve the quality of bank service. At the same time, it is hoped that the results can be a useful reference for other banks to improve their service quality, thereby promoting no-cash payment, bringing benefits to the company.

The study is based on the application of factor analysis techniques (EFA), which is a technique used widely to evaluate the quality of service in general and more specifically, the quality of e-bank service, in order to identify factors that customers really care about when they evaluate the quality of service. Our study group hopes to bring clear evaluation on the quality of BIDV's e-bank service.

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**Study on Corporate Governance and Involuntary Delisting from
Stock Exchange in Vietnam**

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Abstract

The purpose of this research is to find out the current status, and reason of delisting. As well, this study analyzes the characteristics of firm involuntary delisting from Hanoi Security Exchange (HNX) and Hochiminh Security Exchange (HOSX) in Vietnam over the period 2013 to 2017. To achieve the research purposes, we gather all the date of delisting firm from 2013 to 2017, analyze the collected data to find out the current status, distribution of industry and reason of delisting. Furthermore, to understand the characteristics of delisting firm, we empirically compare the board characteristics of 88 involuntary listed cancelation firms to a set of industry and size-matched control firms. The result of this study indicates that from 2013 to 2017, there are 126 delisted firms in which 88 firms involuntary canceled their list from HNX and HOSE. The main reasons of delisting are due to the failure to meet the criteria of security exchange such as loss for 3 consecutive years or total losses exceeding the chartered capital, or violation of information disclosure obligations. This study also analyses the characteristics of delisting firms and find out that delisted firm is less independent, larger board, and more frequent of board meeting. Delisting whether compulsory or voluntary is no longer a new phenomenon in Vietnamese securities market, however there are not many studies related to this field. This study contributes to narrows this gaps and also provide investors some 'red flat' of delisting.

Keywords: *Delisting, Security exchange, HNX, HOSE, Involuntary*

1. Introduction

Involuntary delisting from major stock exchanges is no longer a new phenomenon, but it has received growing attention from investors, regulators, and academic researchers in

recent years. Each of group has a difference interest on delisting. While investors' interest largely springs from the realization that delisting imposes significant costs on shareholders, the academic researcher is concerned about the determinants on delisting from the major stock exchange.

Delisting is the process by which a stock is removed from the trading platform in which it is active. There are two types of delisting. Firstly, businesses are forced out of major stock market if they do not meet the requirements of the stock market, this is called involuntary delisting. In addition, the second type of cancellation is the voluntary delisting. In the case, the company can only cancel the listing upon receiving the consent of the General Assembly of Shareholders. According to the Decision No. 11 of 2014 by the Vietnam Securities Commission, if the General Assembly of Shareholders casts the ballot and acquires at least 51% of the votes of the shareholders, then delisting decision can be approved (Vietnam Securities Commission, 2014)

The exit of stock exchanges comes from many reasons, including the problems of global economic crisis that caused the stock market to fall into prolonged recession, the tightening of government spending policy during the crisis, or the imposition of stringent credit policies, all of those had limited the flow of money into the market (Boot, Gopalan, & Thakor, 2008). In addition, according to some experts in Vietnam, the information disclosure requirement has also created pressures on enterprise and this directly affects the compliance process of listed companies. It can be seen that delisting, whether voluntary or involuntary, is considered to have a great impact on the economy in general and investors in particular (Achleitner, Betzer, Goergen, & Hinterramskogler, 2010). However, the responsibility for forecasting, warning, and providing information on delisting in the Vietnamese stock market is very vague, and there are no specific mechanism and regulations promulgated and implemented for this function. In addition, the economic decisions have been significantly affected by delaying and dishonesty in the disclosure of information by the board of directors on the financial status, as well as complying with mandatory regulatory requirements; or the lack of accountability of independent auditors in providing audit opinions.

This study tents to investigate on the current status of delisting, the reasons of involuntary delisting, and also analyze the characteristics of corporate governance of delisting firms. The remain of this research is organized as follows: Section 2 reviews the literature review, Section 3 is the methodology. Section 4 provides details on the result and discussion. And finally, section provides concluding remarks and recommendations.

2. Literature review

Prior researches have indicated that due to the financial crisis 2008, the world had witnessed numbers of firms going private, this created a new ware of attention in finance literature. Delisting is no longer a new phenomenon for academic research in developed countries, however this issue has not been empirically studied in Vietnam. There are two types of delisting. Firstly, when a firm has experienced a financial difficulty, violated the regulation of the exchange, or merged by another firms, hence they are forced to cancel their

listing. This is called involuntary delisting. Besides that, voluntary delisting is known as a firm revokes his listed status.

One of the reasons leads the firm going private is that the benefit of being listed is deteriorating. The research of Beasley (1996) suggested that in the case of increasing delisting cost, larger firms are better at handling this cost, therefore they remain listing on major stock market. However, smaller firm would decide to leave the public market as the benefit of listing is no longer attractive. Likewise, Hermalin & Weisbach (2003) also found that firms were likely to go private if they received negative comments from the analysts, or the decreasing in institution ownership and turnover. They perceived those adversely affects firms' value. In another word, the degree of financial visibility has a negative association with the decision of delisting. Furthermore, number of studies shows that the liquidity of share trading is one of the most important factors that affect the delisting decision (Achleitner, Betzer, Goergen, & Hinterramskogler, 2010; Hermalin, Weibach, 2003; Michelsen, & Klein, 2011).

In addition, concentration of ownership plays an important role on delisting. As reported by Klein (2012), in the case of concentrated shareholder structure, depending on the quality of monitoring, highly monitored firm will have less incentive to delisting as it does not affect value creation. It is explained that the agency cost will be minimized as stronger concentration of ownership leads to closer monitoring and therefore reduces the conflict interests between shareholder and managers (Himmelberg, Hubbard, & Palia, 1999).

From the period studies, it can be seen that numerous of researchers have focused on the reasons of being voluntary delisted. However, according to the authors' knowledge, there are not much studies in this field which consider the factors affect the involuntary delisting decision, especially in Vietnam academic study. In contrast with the voluntary delisting in which organization has the choice to decide staying or leaving the public market, involuntary delisting occurs when a firm being forced to cancel their list. According to Vietnam Securities Commission (2014) to remain listed in the HNX and HOSE, firm must satisfy a numerical of market capitalization criteria. For example, listed company must be a shareholding company with paid-up capital of at least VND80 billion at the time of registration for listing; must have made a profit in the two years prior to year of listing and must not have accumulated losses as at the year of registration for listing. Besides that, the firms will be forced to cancel their listing if they do not meet several numerical market capitalization criteria such as fail to disclose information, fail to observe good accounting practices and unsatisfactory operating result.

The purpose of this study is to determine the current status, reason, and distribution of involuntary delisting firms. Besides that, this research also aims to analyze the characteristics of the corporate governance of delisting firms.

3. Methodology

To achieve the research purposes, we collect data of all delisting companies between 2013 to 2017 from HNX and HOSX to analyze the current status of delisting firms, the

reasons behind the involuntary delisting of those firms. Also, the collected data is used to examine whether the effectiveness of a firm's corporate governance mechanisms is a primary determinant of its survival in Vietnamese Security Exchange.

In details, to have a better understand the status of listing cancellations, from the information collected, the research team classified the delisting firms into two categories which are voluntary cancellation firm and mandatory delisting firm. From this, we determine the current status of each group over the period from 2013 to 2017. In addition, the research team also studied on the related information of each listing firm to find out the reasons that lead each delisting firms to be forced out of two major stock market.

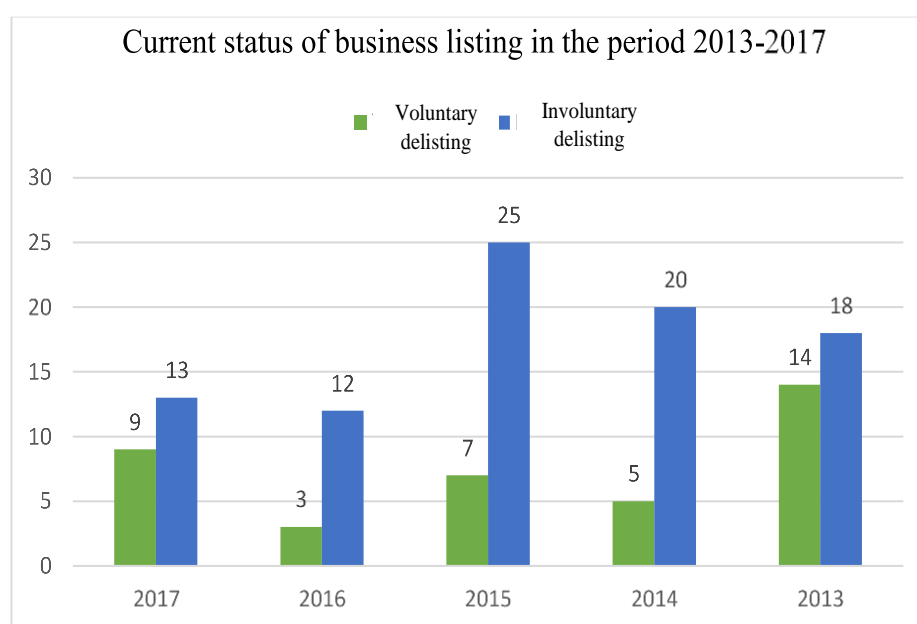
Also, to examine the role of corporate governance to the delisting decision, we empirically compare the board characteristics of involuntary listing cancelation firms to a set of industry and size-matched control firms. Each of delisted firm is match with a control firm that also trades on HNX and HOSE within the defined period. To investigate the characteristics of delisting, we compare 3 characteristics of corporate governance, include outsider directors, board size and board meeting, with a matched-control firm.

4. Result and Discussion

Current status and reason for delisting in Vietnamese Public Market

To investigate on the current status of business delisting, and the main reasons for involuntary delisting, this study collects data of all delisting companies in the period from 2013 to 2017. At a result, the study finds out 126 delisting firm between 2013-2017. Detail current status of delisting firm is shown in graph 1 below.

Figure 1: Current status of business listing in the period 2013-2017.



Source: according to the author's statistics

Figure 1 presents a breakdown of delisted firms by current status of voluntary and involuntary delisting. During the studied period, there are 126 delisting firms. Of which, 38 firms were delisted on voluntary basis, accounting for about 31% of the total number of listed firms, and 88 companies were forced to cancel their listing (account for 69%). It can be seen that the highest number of delisting is in 2015, which comprises of 32 listed cancelation firms (account for 25% of total delisting firms in 5 years).

In order to identify which industry has the largest proportion of delisting, and the main reason behind the delisting, this study continuously in-deep analyses the collected data. Table 1 provides detailed information on delisting of HNX and HOSE.

Table 1: Information on the distribution of industry of 88 delisting firms in HNX and HOSE between 2013-2017

Information on Distribution of industry of 88 firms becoming delisted from HNX, and HOSX between 2013-2017		
<i>Panel B: Distribution of delisting industry</i>		
<i>Industry</i>	<i>Total</i>	<i>Percentages (%)</i>
Real estate	3	3.41%
Stock	4	4.55%
Mechanical Engineering	1	1.14%
Oil and Gas	2	2.27%
Service	3	3.41%
Electronic	2	2.27%
Education	1	1.14%
Maritime	3	3.41%
Extractive	5	5.68%
Business	4	4.55%
Manufacturing	28	31.82%
Transportation	7	7.95%
Construction	21	23.86%
XD-real estate	4	4.55%
<i>Total</i>	<i>88</i>	<i>100.00%</i>

Source: according to the author's statistics

To determine industry which has the highest number of delisting, the research team collected, analyzed the data of all mandatory delisting firms. The results showed that 88 involuntary delisting companies come from 14 industries and the top two sectors which have the highest number of delisting firms were manufacturing (31%) and construction (24%), Figure 1 shows detail information on delisting industry for the period from 2013 to 2017. In-depth analysis of the distribution of delisting industry over the years, the group received the same results, the largest number of canceled listing industries are still the two sectors:

manufacturing and construction, and those sectors comprise of 60% of total number of listing cancelation firms, excepting 2017 these sectors accounted for 40%.

To understand the reasons why firms are forced to cancel their listing, the authors analyze the collected data, and finds out the causes of 88 involuntary delisting firm. The results are summarized in table 2.

Table 2: Information on the reason of delisting of 88 firms

Information on reason of delisting of 88 firms between 2013-2017		
<i>Panel C: Distribution of delisting reasons</i>		
<i>Reasons</i>	<i>Total</i>	<i>Percentages (%)</i>
Violation of information disclosure obligations	10	11.36%
The auditor refuses to issue an audit opinion	8	9.09%
Loss for 3 consecutive years or total losses exceeding the chartered capital	63	71.59%
Financial issues	1	1.14%
Undistributed profits of the company exceed the chartered capital	4	4.55%
Unqualified as a public company	1	1.14%
Merged, restructuring	1	1.14%
<i>Total</i>	<i>88</i>	<i>100.00%</i>

Source: according to the author's statistics

Figure 2 also shows that, for the case of involuntary cancellation, the main reason for delisting is the failure to meet the criteria of security exchange. In detail, 62 enterprises (accounting for 70.5%) are forced to cancel the listing because the accumulated losses exceed the charter capital. Furthermore, the breach of disclosure obligations and the auditor's refusal to issue auditing opinions are also identified as the main causes for the listing cancellation. Specifically, in 5 years, out of 88 mandatory delisting firm, there are 11 enterprises violated information disclosure obligations (accounting for 12.5%) and 8 enterprises with auditors declined to provide audit opinions out of 88 enterprises (accounting for 9%).

The relationship between corporate governance and involuntary delisting

According to Eisenberg, Sundren & Wells (1998) board of director plays an important role in the success of business as they directly involve in every major operational or strategic decisions. Along these lines, number of research has posited that the effectiveness of the board of director is a major determinant that affects the financial performance of an organization. Drawing from these researches, a question has been arisen that is whether the more effective the board of director is, the less likely to face financial problems, and the less

likely a firm is forced to cancel their list from HNX and HOSE. To examine this statement, this study selects 3 governance characteristics and compares those characteristics between a delisted firm with industry and size-matched control firms. The result of this study is summarized in figure 2 below.

Figure 2: The comparison of governance characteristics for 88 delisted firms and matched control firms.

	Delisted firm	Control firms
	88	88
Outside director	22	52
Board size	36	33
Board meeting	8	6
3 year accumulative board meeting	21	18

Figure 2 illustrates the sample consists of 88 involuntary delisting firms and 88 control firms from HNX and HOSE between 2013-2017. Each of delisted firm is match with a control firm that also trade on HNX and HOSE within the defined period. Figure 2 comprises of 3 components, each of the component is calculated as following: outsider directors is the percentage of independent director serving on the board prior to delisted; board size is the difference between total director and independent directors; board meeting is number of meeting of board during the prior to delisted.

The result in figure 2 shows that while number of independent director in delisted firms is 22%, there are 52% of independent directors in control firms. It can be explained as the outside directors is more likely to protect the interest of shareholder, as a result the financial performance will be increased. Besides that, the board size of delisted firm and control firm is respectively 36 and 33. According to Michelsen & Klein (2011) board size and firm's performance have an inverse relationship which implies that the larger boards will be less effective as they are lack of communication and coordination. Based on the finding of this study and the period study, it may imply that the involuntary delisting firms are likely to be less independent and have a larger board size.

Furthermore, based on study of Core, Guay & Rusticus (1999), the past performance has an inverse relationship with board activity. In this sense, board activity is measured by Core, Guay & Rusticus (1999) as the frequency of board meeting. According to our study, in the year prior to delisting, there are 8 meetings hold by delisting firm while only 6 meetings hold by control firm. In addition, the total of number of 3-year accumulative board meeting of delisting firm and control firms are 21 and 18 meetings respectively. In the line with period research and the result of this study, it may imply that as the number of board meeting increases, the likelihood of delisting is rising.

5. Conclusion and Recommendation

Involuntary delisting from major stock exchanges is no longer a new phenomenon, but it has received growing attention from investors, regulators, and academic researchers in recent years. This research aims to investigate on the current status and reason of involuntary delisting, also to examine whether the effectiveness of a firm's corporate governance mechanisms, as proxy by insider ownership incentives and the structure of its boards of directors, is a primary determinant of its survival in Vietnamese Security Exchange. To achieve this end, this study collects data of all delisting companies between 2013 and 2017 from HNX and HOSE, and empirically compares the board characteristics of involuntary listed cancelation firms to a set of industry and size-matched control firms.

The result of this study indicates that from 2013 to 2017, there are 126 firms delisted from the major Vietnamese Stock Exchange, in which 88 firms involuntary canceled their list from HNX and HOSE. The main reasons behind this due to the failure to meet the criteria of security exchange such as loss for 3 consecutive years or total losses exceeding the chartered capital, or violation of information disclosure obligations. This study also analyses the characteristics of delisting firms and finds out that delisted firm is less independent, larger board, and more frequent of board meeting.

Also, the finding of this study provides to empirical evidence for the 'red flat' of mandatory delisting firms. Therefore, this result has an important meaning in helping investors to early anticipate the likelihood of delisting and consequently improve the investors' decision making.

According to the experts, if firms are forced out of the major stock market, they are faced numerous difficulties, and put their business in the most disadvantage situation. Firstly, mandatory listing cancelation means that the business loses an important capital mobilization channel. Secondly, delisting firm may lose the brand name which they had built up for years. Furthermore, after delisting, the way back to the stock market will be very difficult because their business must satisfy the stricter and tighter conditions and requirements. Therefore, firms need to be carefully if they intent to involve in decisions which could lead them to be forced out of stock markets.

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Analyzing Operational Efficiency of Paper Enterprises in Vietnam and an Empirical Financial Forecasting

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Abstract

The research used data from the General Statistics Office of Viet Nam for 6 years (2012-2017) to analyze the operation efficiency of Vietnam's paper enterprises. From the statistical results, Vietnam's paper industry is attracting many investors which registered a huge number of new enterprises over the years. This paper shows that the basic characteristic of Viet Nam's paper enterprises is to focus on industrial zones, mostly small scales and privately owned. The average annual income of workers in this field is about 78.5 million VND per person per year. Although the business results have increased dramatically, but the efficiency of these enterprises have not remained stable in the past period. There are significant differences among enterprises of different scales. The research also provides an empirical analysis on the financial forecasting method according to the percentage of sales to helps them in financial forecasting activities in the next period in order to achieve stable development.

Keywords: *Financial forecasting, Operational efficiency, Paper enterprises, Stable development*

1. Introduction

For enterprises, operational efficiency directly reflects the results of the management in using various resources in the production and business process. The higher enterprises operate efficiency, the better enterprises manage and use of resources, and the greater enterprises contribute to the economy of the country (Naser and Mokhtar, 2004). Business operational efficiency represents the relative relationship between outputs and inputs which are used in the business operations (Pham Thi Thuy and Nguyen Thi Lan Anh, 2018). Every enterprise always wonder how do the actual situation of their enterprises like? What is the prospect for future development? These questions will be answered through economic

analysis. Lord Kelvin (William Thomson, 26 June 1824 – 17 December 1907) was a Scots-Irish mathematical physicist and engineer, a professor at the University of Glasgow, he said “If you cannot measure it, you cannot improve it” and When you can measure what you are saying, and express it through the numbers, you can get knowledge about it. When you can not measure, you can not express it by numbers, your knowledge is too small and unsatisfactory (Kelvin, 1883). Lord Kelvin’s opinion is the main reason that explains why organizations must evaluate their operational efficiency.

Vietnam’s paper industry was formed in about 284 AC with the manual method. In the year 1912, the first pulp factory in Viet Nam was put into operation in Phu Tho province. Nowadays, investment in Vietnam’s paper industry is attractive significantly because of the demand for this products is increasing while the pressure from replacement products is almost none. The research's purpose is analysing the operational efficiency of Vietnam’s paper enterprises in the five years (from 2013 to 2017) to determine the level of their efficiency. From the results analysing the overall efficiency of the paper industry, this research encourages Vietnam’s paper enterprises should have their own financial forecasting activities in the next stages in order to achieve stable development. Therefore, the author will apply the forecasting method according to percentage of sales to illustrate the method of financial forecasting for these paper enterprises.

2. Literature Review and Theoretical approach

In the world, Analyzing operational efficiency of enterprise has a huge history and now this content is commonly applied such as an important tool in business management. Brown (1996) argued that data collection and efficiency analysis are an important part of managerial work. According to Neely (1998) that there are seven main reasons why business performance measurement is now on the management agenda:

1. The changing nature of work;
2. Increasing competition;
3. Specific improvement initiatives;
4. National and international quality awards;
5. Changing organizational roles;
6. Changing external demands; and
7. The power of information technology

Financial indicators are always valuable tools for managers and are used by managers to sum up, analyze and provide useful information for management decisions as well as important forecasts about the state of business in an organization. (Beaver, 1966; Chen và Shimerda, 1981; Singh và Schmidgall, 2002).

In Viet Nam, the research about paper enterprises in Vietnam is not much. Research results of Vu Duy Vinh (2009) and Vu Hung Phuong (2009) showed that Vietnam’s paper

enterprises were faced with many challenges in the period of international economic integration. So, these authors assessed the competitiveness of the paper industry in Vietnam and proposed recommendations to improve the competitiveness of the paper industry. These researchs focused on the competitiveness of the paper industry, but there were no researchs analyzing the efficiency of paper enterprises and guiding financial forecasting.

Method forecast using in this paper is a method that base on percentage of sales. Not look at in more details of cost or the plan of their business, this paper forecast directly for the ratios in financial statement base on the assumption that every ratios change when the revenue ratio changes. When the revenue changes, the business expenses also change, and the profit changes lead to change the assets and capital of the business.

The financial forecast process is done in six steps:

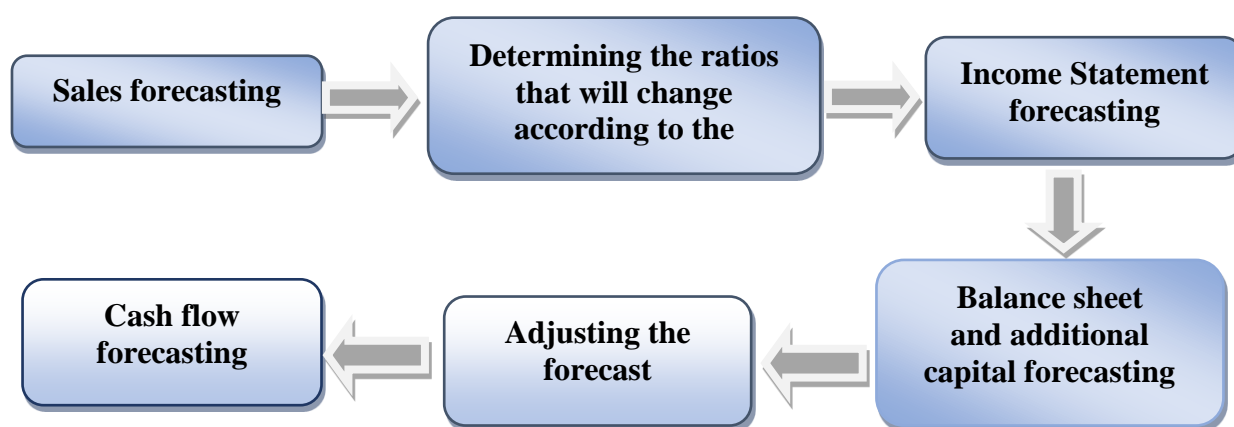


Figure 1. The financial forecast process

Source: Pham Thi Thuy, 2018

3. Results and Discussion

3.1. Analyzing operational efficiency of paper enterprises in Vietnam (2012-2017)

3.1.1. Overview of Vietnamese paper enterprises

Paper industry is one of the major industries in Viet Nam that produces pulp and paper. The production process of these enterprises uses surplus parts in forestry, agriculture and recycled paper to produce finished products. So, this sector relates to many sectors of the national economy such as agriculture and forestry, industry, chemistry, energy, electricity, transportation...

In 1912 the was an important mark in the development of Vietnam's paper industry when the first pulp factory with the industrial method began the operation with a capacity of 4,000 tons papers per year in Viet Tri city of Phu Tho province. Before that, papers were produced completely by the manual method and were served for bookkeeping, making votive paper, making folk pictures...

In the 1960s, many paper factories were built such as Viet Tri Paper Factory; Van Diem pulp factory; Dong Nai Paper Factory; Tan Mai Paper Factory ... all of them had small capacity (less than 20,000 tons per year). In 1975, the total designed capacity of Vietnam's paper industry was 72,000 tons per year, but the actual output was only about 28,000 tons per year due to the war and the imbalance between pulp and paper quantity.

In the year 1982, the Bai Bang Paper Factory was put into production as a result of tirelessly creativity in work of the leaders, technical experts, engineers and workers in Vietnam and Sweden during the period of eight years (beginning from 1974 to 1982) by grants nearly 2.7 billion cuaron from Sweden government. The main business headquarters was located in Phong Chau Town, Phu Ninh District, Phu Tho Province with a total area of 100 hectares, designed capacity of 53,000 tons of pulp per year and 55,000 tons of paper per year. This factory had a closed production line which used mechanical and automation technology. The factory also built raw material's zone, infrastructure, subsidiary facilities such as electricity mill, chemicals mill and vocational training college for training skilled labors.

Over the past 30 years (1986-2015), Viet Nam's paper industry had dramatical increase on production, from 88,700 tons in the year 1986 to 2,075,400 tons in the year 2010 and reached 2,420,000 tons in the year 2016 (*Figure 2*). Some paper enterprises had the subsidiary factories but the capacity was low and only enough serving for their demand. In present, the pulp capacity was only accounting for 21.08% compare to the paper capacity. In order to ensure domestic paper production, many factories have purchased domestic recycled papers or imported a huge quantity of pulp and recycled paper.

Now, the basic characteristics of the Vietnam's paper industry are many paper and pulp enterprises with small capacity. Many enterprises with capacity of less than 10,000 tons per year, accounted for 81.79% of the total number of enterprises but the total capacity only accounted for 21.26% of the total capacity of the whole industry. The enterprises with thi capacity mostly belong to group of paper packaging and votive paper. Although these enterprises contributed significantly to socio-economic development in the country, but this model often lack of a standard environmental treatment system, so caused environmental pollution. Meanwhile, the number of enterprises with a capacity of 50,000 tons per year or more only accounted for 3.31%, but the total capacity accounted for 45.5% of the total capacity of the industry, with an average capacity of 94,435 tons per year. The large-capacity enterprises model not only contributed the great benefit to socio-economic development but also ensured environmental benefit.

Forecast on the average paper growth for the period 2016-2020 is 12% per year and for the period 2021-2025 is 10% per year (*Table 1*). It is forecasted that by 2025, the capacity of Vietnam's paper industry will be 10,884,761 tons per year, the consumption demand will be 10,357,894 tons per year, the paper production will reach the capacity of 8,944,714 tons per year (*Table 2*).

It can be said that the Vietnam's paper industry has a resonant impact on other industries such as forestry, chemistry, coal and electricity. This resonance has the effect on balances of the development of associated industries, particularly the forestry sector.

However, the effectiveness of the Vietnam's paper enterprises in recent years should continue to be evaluated and find the factors that affect the effectiveness of the development in order to propose solutions for sustainability.

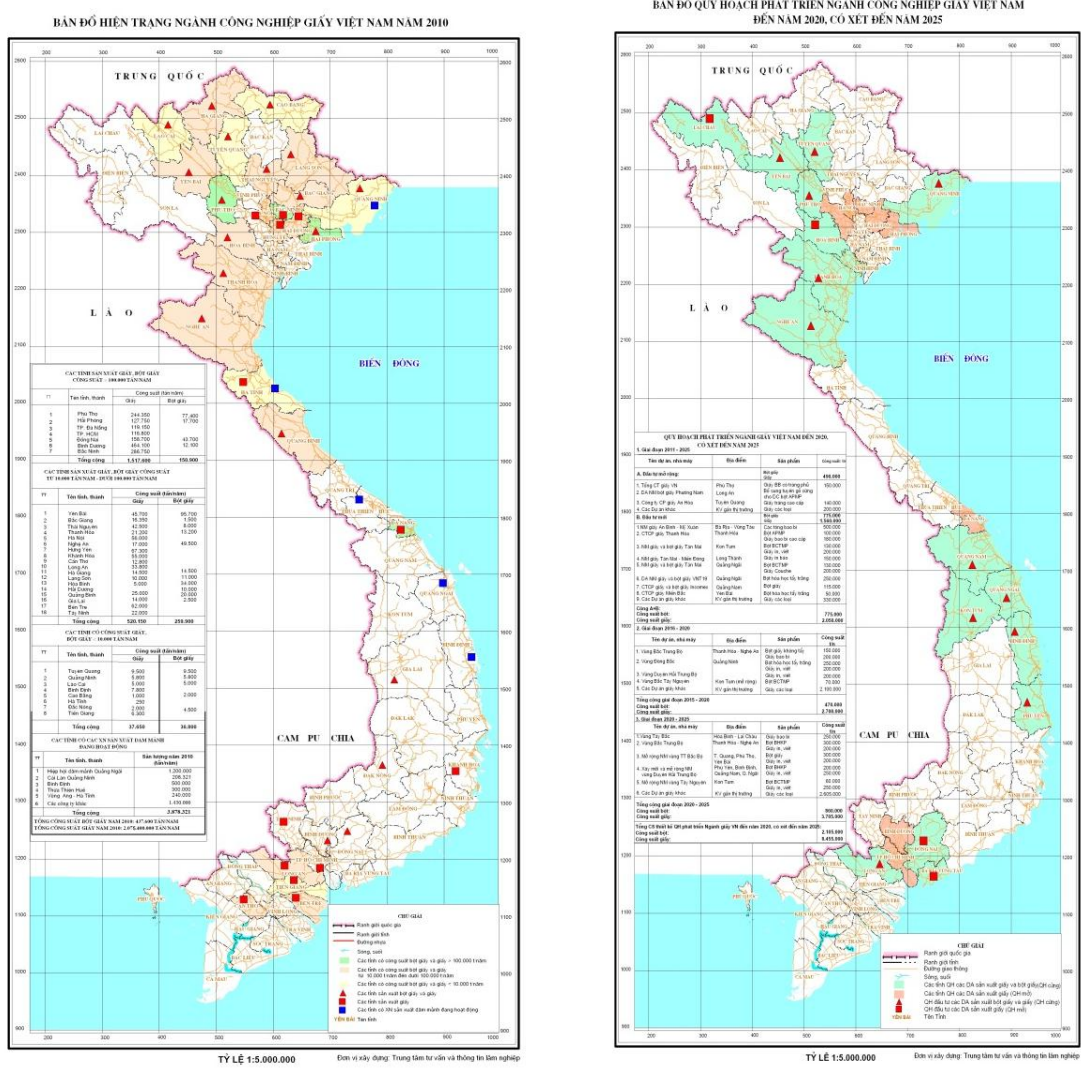


Figure 2. The condition of Vietnam's paper industry in 2010 and the development planning of Vietnam's paper industry to 2020 with a vision to 2025

Source: Research Institute of pulp and paper Industry, 2012

Table 1. Average paper growth forecast for 2016-2020 and 2021-2025

Period	Unit	Capacity	Consumption	Production	Import	Export
2016-2020	% per year	12,0	10,0	11,0	6,0	6,0
2021-2025	% per year	10,0	8,0	9,0	4,0	7,0

Source: Research Institute of pulp and paper Industry, 2012

Table 2. Prospects for capacity, consumption, production, import and export of Vietnamese paper enterprises in the period 2016-2025

Unit: ton

Object	2016	2017	2018	2019	2020
Capacity	4.295.20 0	4.810.62 4	5.387.89 9	6.034.44 7	6.758.580
Consumption	4.806.71 4	5.286.59 2	5.816.32 5	6.401.22 0	7.047.161
Production	3.829.50 0	4.250.74 5	4.718.32 7	5.237.34 3	5.813.451
Import	1.351.39 4	1.432.47 8	1.518.42 6	1.609.53 2	1.706.104
Export	374.180	396.631	420.429	445.654	472.394
Population (million people)	101,99	103,11	104,25	105,39	106,55
Consumption per capita, (kg per person per year)	47,13	51,27	55,79	60,74	66,14
Object	2021	2022	2023	2004	2025
Capacity	7.434.43 8	8.177.88 2	8.995.67 0	9.895.23 7	10.884.76 1
Consumption	7.605.54 8	8.211.43 9	8.869.01 9	9.582.84 8	10.357.89 4
Production	6.336.66 1	6.906.96 1	7.528.58 7	8.206.16 0	8.944.714
Import	1.774.34 8	1.845.32 2	1.919.13 5	1.995.90 0	2.075.736
Export	505.461	540.843	578.703	619.212	662.557
Population (million people)	107,69	108,84	110,01	111,19	112,38
Consumption per capita, (kg per person per year)	70,62	75,44	80,62	86,19	92,17

Source: Research Institute of pulp and paper Industry, 2012

If classified by purpose, the paper products are divided into six groups:

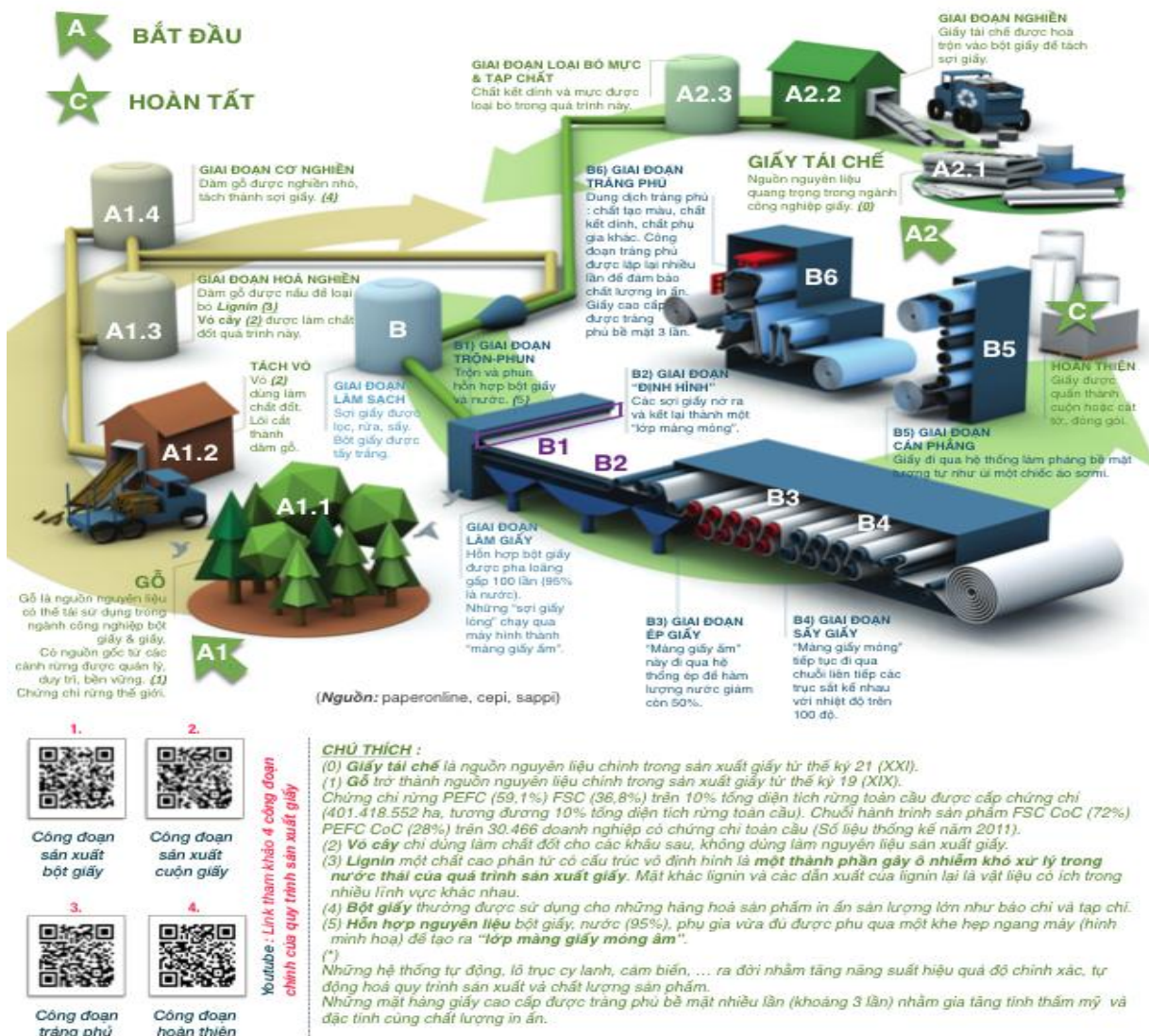
- * Group 1: Paper for printing, writing (newsprint, printing and writing paper ...)
- * Group 2: Paper for industry (packaging paper, liquid paper ...)
- * Group 3: Paper for Household (tissue, toilet paper ...)

- * Group 4: Paper for Office (fax paper, invoice printing paper ...)
- * Group 5: Votive paper
- * Group 6: Other paper (electronic engineering paper, tobacco paper, money printing paper ...)

Nowaday in Vietnam, paper enterprises only produce products such as printing paper, newsprint, ordinary industrial paper, Votive paper, low quality toilet paper, medium quality tissue paper and electronic engineering paper, tobacco paper, money printing paper ...can not be produced yet.

The process of production includes many stages continuously, each production workshop according to certain technological process. The process of paper production is complex, continuous processing (Figure 3).

Figure 3. Simulate paper production process from wood



Source: Tri Minh Co., Ltd

3.1.2. Analyzing operational efficiency of paper enterprises in Vietnam in the period of 6 years (2012-2017)

In the period of 6 years (2012-2017), the number of paper enterprises went up substantially. This result showed that Vietnamese paper industry was attractive for Investors. In the year 2017, Vietnamese paper industry registered a huge quantity of enterprises, accounting for 2485 in many different group scales, mostly small and micro-sized businesses (Table 3)

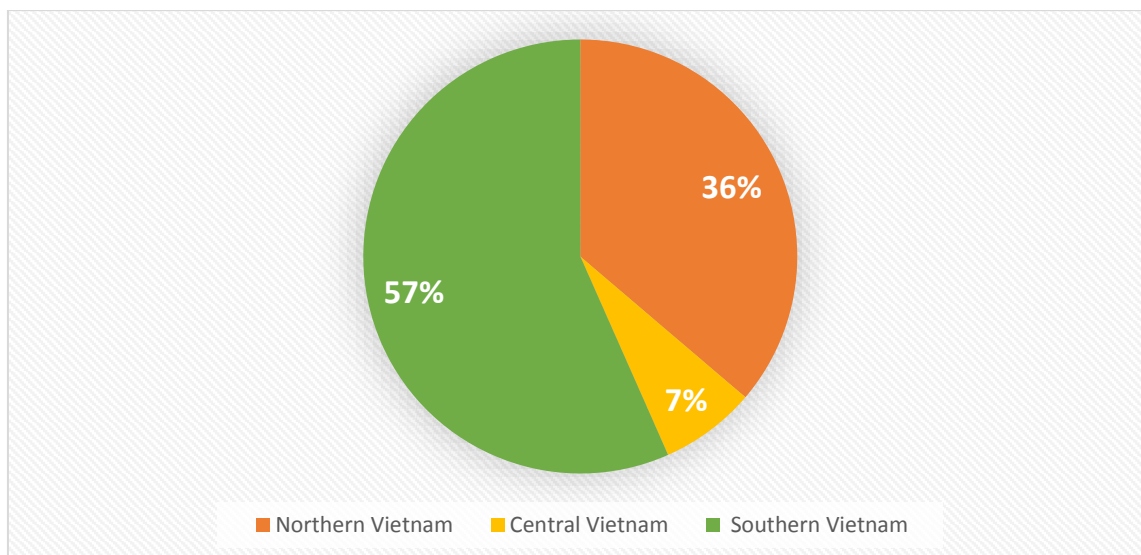
Table 3. Number of paper enterprises by size and type of ownership (2012-2017)

	Year					
	2012	2013	2014	2015	2016	2017
Company size						
Super small	657	776	806	963	948	1,118
Small	1.159	1.114	1.148	1.150	1.226	1.254
Medium	48	61	69	61	56	57
Large	55	52	53	54	55	56
Ownership						
State ownership	59	56	49	55	50	52
Private ownership	1.716	1.808	1.875	1.999	2.053	2.221
Foreign enterprises	144	139	152	174	182	212
Total	1.919	2.003	2.076	2.228	2.285	2.485

Source: Calculated by author

Pulp and paper enterprises have been distributed almost everywhere in regions that has ability to develop, ability to receive projects and respond the demand for raw materials zone for production. The Northern Delta (Red River Delta) and the South (including the South East and the Mekong Delta) are main areas for many investment projects to construct of paper factories which have large capacity and high concentration industry (Vinh Phuc, Bac Ninh, Ha Noi, Ho Chi Minh City, Binh Duong, Dong Nai, Can Tho ...). In fact, only some provinces have some concentrated paper industrial area, for example BacNinh Province. In other provinces, paper factories can be located in the industrial zone together with the enterprises of other industries.

Figure 4: Distribution density of Vietnam's paper enterprises in 2016



Source: Calculated by author

The paper industry registered a large workforce engaged in manufacturing and trading in the paper sector. The number of labors has increased steadily over the years and labors working in the packaging paper industry had the largest proportion. In the year 2012, the total number of employees involved in the paper industry was 96,963 person and by 2017 that of number reached 106,382 person (*Table 4*). Total average income per year of a worker improve over years and there was slightly different between groups. In the year 2012, Total average income per year per worker was 43,4 million VND. In the year 2017 the average annual income of workers in this sector was almost double that of number in the year 2012, averaging 78.5 million VND per person per year. The scales of the enterprise changed varies with income levels. The general trend was many workers who worked in super small enterprises had a lower income level than those worked in large enterprises. For example in 2017, the average annual income of workers who worked in super small enterprises was about 66.4 million VND per person per year whereas the average annual income of workers who worked in large enterprises is 134.7 per person per year (*Table 5*).

Table 4: Statistics on the number of laborers involved in the paper industry in the period of 6 years (2012-2017) (Unit: Person)

	Year						Total
	2012	2013	2014	2015	2016	2017	
Production of pulp, paper and paperboard	23,067	30,283	20,507	18,570	16,481	14,730	123,638
Production of packaging from paperboard	37,187	38,733	40,925	42,081	42,416	44,619	245,961
Production of label paper	10,336	12,090	13,490	14,254	14,912	15,936	81,018

Production of other paper	26,373	24,557	25,544	26,249	29,242	31,479	163,462
Total	96,963	105,663	100,466	101,154	108,051	106,782	614,079

Source: Calculated by author

Table 5. Statistics average annual income of employees who worked in the paper industry in the period of 6 years (2012-2017)

(Unit: Million VND per person per year)

Size	Year						Total
	2012	2013	2014	2015	2016	2017	
Super small	35,9365	47,8357	56,3002	48,7073	75,6721	66,3764	56,5585
Small	44,3625	53,2543	62,8771	73,5299	119,0956	84,3533	73,6794
Medium	67,8584	95,3974	83,5508	91,0704	95,7559	105,8014	90,3156
Large	81,4937	80,4827	82,2777	100,6096	104,5817	134,7114	97,7207
Total	43,4139	53,1607	61,4936	64,2618	101,0187	78,5255	68,0637

Source: Calculated by author

Statistics of main business results and main effective indicators of Vietnamese paper enterprises in the period of 6 years (2012-2017) showed that in this period the business results of enterprises had improved: average revenue increased, taxes and other payables to the State budget increased. In 2012, the total revenue of the Vietnamese paper industry was 86,692 billion VND, total profit after tax was 3,220 billion VND, total contributions to the state budget was 4,541 billion VND. By 2017, total revenue went up to 128,890 billion VND, total profit after tax went up to 3,365 billion VND, total contribution to the state budget went up to 5,893 billion VND. The overall analysis shows that although Vietnamese paper enterprises increased significantly their revenue, the growth rate of profit after tax did not go up significantly. Looking at the table 6 in more detail, super small enterprises and small enterprises were less efficient than large enterprises. Business results of these enterprises in recent years have suffered losses while large enterprises seem to have a competitive advantage that were trying to increase their profitability over the years despite the unstable growth rate (*Table 6*).

Vietnam's paper enterprises created Value add more than 13 billion VND per year. However, the business results in this period was unstable that shown by ROA. There was 2 years that registered return on assets positive such as 2013 and 2017 whereas return on assets in 2012, 2014, 2015 and 2016 were not Vietnam's effective for paper enterprises (*Table 7*).

Table 6. Statistics some business results of Vietnam's paper enterprises in the period of 6 years (2012-2017)

(Unit: Billion VND)

	Year					
	2012	2013	2014	2015	2016	2017
Total Revenue	2.365	2.435	2.673	4.309	3.276	4.671

		Year					
		2012	2013	2014	2015	2016	2017
Super small enterprises	Total Assets	2.257	4.295	4.012	4.388	4.681	6.305
	Total Equity	1.138	1.644	1.600	1.893	1.919	2.619
	Total Profit after tax	(23)	44	(16)	(101)	(95)	(47)
	Taxes and other payables to the State budget	59	101	68	60	41	118
Small enterprises	Total Revenue	45.806	34.853	37.947	42.410	47.839	53.276
	Total Assets	33.866	35.389	38.397	41.468	53.919	53.746
	Total Equity	12.213	11.872	13.927	14.438	18.677	18.445
	Total Profit after tax	2.475	(40)	(430)	(100)	(324)	361
	Taxes and other payables to the State budget	1.989	1.232	1.255	1.412	1.616	1.809
Medium enterprises	Total Revenue	14.524	17.386	21.182	19.677	18.040	16.238
	Total Assets	12.425	16.150	18.224	19.485	14.375	12.727
	Total Equity	6.311	8.431	9.841	10.166	8.299	4.940
	Total Profit after tax	452	730	964	1.017	688	259
	Taxes and other payables to the State budget	1.044	1.070	1.376	1.049	744	619
Large enterprises	Total Revenue	23.997	30.677	32.247	37.435	41.392	54.705
	Total Assets	27.812	32.722	34.814	37.507	39.659	56.751
	Total Equity	6.804	8.921	10.286	13.401	17.778	27.350
	Total Profit after tax	316	1.037	824	1.658	2.042	2.792
	Taxes and other payables to the State budget	1.449	1.337	1.804	1.959	2.677	3.348
Total	Total Revenue	86.692	85.347	94.047	103.831	110.547	128.890
	Total Assets	76.361	88.556	95.448	102.847	112.635	129.530
	Total Equity	26.464	30.868	35.655	39.898	46.674	53.355
	Total Profit after tax	3.220	1.770	1.342	2.474	2.311	3.365
	Taxes and other payables to the State budget	4.541	3.741	4.502	4.481	5.078	5.893

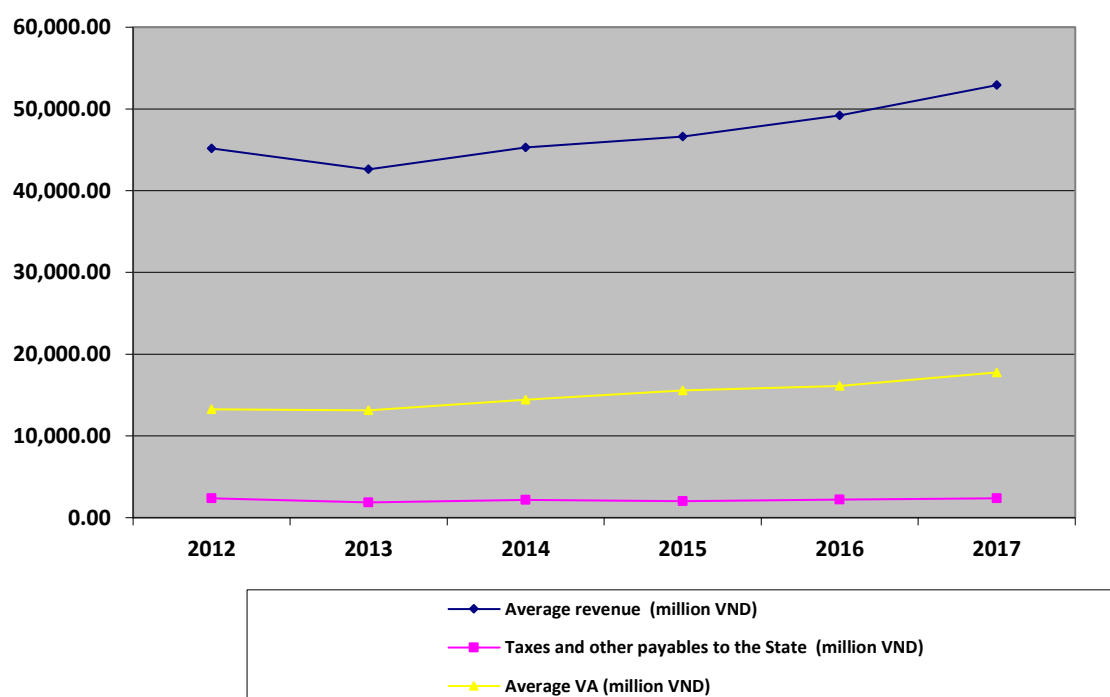
Source: Calculated by author

Table 7. Statistics of some results indicators and efficiency indicators (2012-2017)

Year	Average revenue (million)	Growth rate (%)	Average taxes and other payables to the State budget (million)	Average ROA (%)	Average VA (million)
2012	45.175,54		2.366	-0,0429618	13.241,09
2013	42.609,66	-5,7%	1.868	0,0140443	13.129,52
2014	45.302,21	6,3%	2.169	-0,0050817	14.417,03
2015	46.602,67	2,9%	2.011	-0,0209136	15.576,45
2016	49.197,68	5,6%	2.222	-0,0088889	16.124,54
2017	52.910,55	7,5%	2.372	0.0085718	17.767,89

Source: Calculated by author

Figure 5: Chart of business results of Vietnam's paper enterprises in the period of 6 years (2012-2017)



Source: Calculated by author

3.2. An empirical analysis of financial forecasting

Financial forecasting is the forecasting of basic indicators on the financial statements of an enterprise for the upcoming business period. Since then, business owners will easier identify additional capital that needs for enterprises. Database of past business periods will be used to forecast the next stages of Vietnam's paper enterprises. So this information will

help business owners take the initiative in financial planning to secure capital for investment activities.

The empirical study is based on the audited financial statements of Viet Tri Paper Joint Stock Company (GVT) in the period of 4 years (2014-2017). This paper provide financial forecasting of Viet Tri Paper Joint Stock Company for the year 2018. Since then, the objective of this empirical study show a financial forecasting method for Vietnamese paper enterprises which provide management policies for executives to achieve their goals.

Firstly, determine the growth rate of revenue of GVT Company. From 2014 to 2017, revenue of GVT Company was not stable, revenue in the year 2016 went down 6.84% compared to this ratio in the year 2015. But in the year 2017 the growth rate of revenue of GVT company increased sharply 27.23% compared to 2016 (*Table 8*). Based on the average growth rate of this period and considering the upward trend in the overall paper market in Vietnam (*Table 7*), the analyst forecasts GVT Company's revenue growth rate in 2018 will reach 8%.

Table 8. Overview of the financial situation of GVT Company (2014-2017)

Indicators	2014	2015	2016	2017
Growth rate of revenue		0,34%	-6,84%	27,23%
Net Sales	970	973	906	1.153
Cost of goods sold	882	883	824	1.056
Gross profit	87	90	82	97
Selling expenses and administrative expenses	40	42	34	51
Profit before tax	17	17	15	20
Cash	8	13	18	20
Account receivable	193	187	199	167
Inventory	244	327	246	211
Account payable	135	168	100	135

Source: Audited financial statement for the period 2014-2017

Secondly, determine the variables that change by revenue. Based on the percentage of revenue over the last four years to review this trend and forecasts for 2018. For the GVT Company, we can forecast in 2018 cost of goods sold per revenue at 91% due to this rate is quite stable over the years, fluctuating around the 91% mark. Similarly, the author based on the average of the indicators for the period 2014-2017 in table 9 to forecast the percentage of indicators per revenues for 2018. The major financial indicators include Selling expenses

and administrative expenses, Profit before tax, Cash, Account receivable, Inventory, Account payable (*Table 10*).

Table 9. Percentage of financial indicators per revenue

Indicators	Percentage of financial indicators per revenue			
	2014	2015	2016	2017
Cost of goods sold	91,0%	90,8%	90,9%	91,6%
Gross profit	9,0%	9,2%	9,1%	8,4%
Selling expenses and administrative expenses	4,1%	4,3%	3,8%	4,4%
Profit before tax	1,7%	1,7%	1,7%	1,8%
Cash	0,9%	1,3%	2,0%	1,7%
Account receivable	19,9%	19,2%	21,9%	14,5%
Inventory	25,2%	33,6%	27,1%	18,3%
Account payable	13,9%	17,2%	11,0%	11,7%

Source: Calculated by author

Finally, forecast main financial indicators. On the basis of the forecasted revenue in step 1 and forecasted percentage of financial indicators per revenue on some basic indicators, analysts easily forecast financial indicators in 2018 as shown in Table 10. These indicators is the basis for making forecasts on business results and forecasts of the accounting balance sheet. Since then, business owners have backgrounds for determining the additional capital demand for 2018.

Table 10. Forecast of main financial indicators

Indicators	Percentage of financial indicators per revenue forecasting	Forecast of value 2018 (Billions VND)
Net Sales		1.245
Cost of goods sold	91,0%	1.133
Gross profit		112
Selling expenses and administrative expenses	4,5%	56
Profit before tax	1,8%	22
Cash	1,5%	19
Account receivable	19,0%	237
Inventory	20,0%	249
Account payable	12,0%	149

Source: Calculated by author

4. Conclusion

Results from this analysis show the current business efficiency of Vietnam's paper enterprises in the past (2012-2017). Research shows that the basic characteristics of Vietnamese paper industry that Vietnamese paper enterprises concentrate in industrial zones, mostly small scales and privately owned. The average annual income of workers working in this field is about 78.5 million VND per person per year. Although Vietnam's paper enterprises are increasing their consumption volume, their business results in recent years are not good, leading to unstable performance.

The paper implicate that Vietnam's paper enterprises should consider many factors investing in this sector and should take management measures to ensure increased consumption along with increase profit and improve business efficiency. Some factors that need to be considered and improved are the production line, the stability of the input materials, especially the recycled materials, the measures of waste disposal in the environment. In addition, the paper recommends that Vietnamese paper enterprises improve their business performance and financial forecasts to ensure good control over business activities in the next period.

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**Developing Indicators for Measuring Performance
of Vietnamese Construction Enterprises**

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Abstract

The study highlights some of the characteristics of the Vietnamese construction industry, and is an extremely important role for the national economy. Some industry characteristics affect the performance measurement system of a construction business. 50 indicators are included in the theoretical model of performance indicators of Vietnamese construction firms. Following in-depth interviews, 28 indicators were selected from 50 indicators. Quantitative analysis of the reliability of these 28 variables by Cronbach's alpha test showed that only 23 variables were satisfied. Based on the results of the study, the author provide recommendations for Vietnamese construction firms, shareholders, investors, state management agencies, universities and training institutions

Keywords: *Efficiency, Vietnamese construction enterprises*

1. Introduction

In Vietnam, there is no model to present a system of performance measurement indicators for building enterprises. Evaluating the necessity of indicators in the metrics system for each group of enterprises of different sizes is the case that previous studies have not yet been conducted. A number of studies have dealt with the impact of the use of performance measurement systems but no studies have been conducted in the building industry. Furthermore, there have been no studies to assess the impact of using measurement measures when making management decisions on the performance of Vietnamese enterprises.

The objective of this study was to find a set of indicators, a performance indicator system, of Vietnamese building enterprises on the basis of the indicators mentioned in the

previous studies. The characteristic of this study is that it is not based on a particular theoretical model but rather the synthesis of several theories of performance measurement: BSC theory model, EFQM theory model, KPIS theory model for building enterprises. From these major theoretical models, specific studies for building enterprises around the world and Vietnam have been developed. In fact, these theories have been put into applied research in the building industry because their usefulness has been demonstrated by previous studies. Moreover, indicators included in these study are not included in a particular study or theoretical model but they have been synthesized and chosen from various studies on the indicator system of building enterprises in the world and in Viet Nam. 50 indicators are included, including 11 financial indicators and 39 non-financial indicators.

2. Data collection on performance measurement's indicators

Data collection is realized in two steps: personal interviews and extensive survey through questionnaire.

In the first place, 43 experts were interviewed. They had to complete a questionnaire, named "Expert Personal Questionnaire" to test the necessity of the indicators given in the original theoretical model. If one indicator is considered necessary by more than 50% of expert, it will be retained in the performance measurement system.

A total of 1,500 questionnaires were sent to VCCI member companies in order to collect data on indicators that have been retained by the experts after the interview.

3. Analysis of data on performance measurement's indicators system

After the collection of the "Expert Personal Questionnaire", 28 indicators have been retained.

Table 1: 28 indicators encoded

Biến	Indicator
CT1	Percentage of satisfied customers in terms of quality of works
CT2	Percentage of satisfied customers in term of the price of the works
CT3	Percentage of satisfied customers on time of handover of works
CT4	Percentage of satisfied customers about service attitude
CT5	Percentage of regular customers
CT6	Overall satisfaction of customers
CT7	Percentage of handover on time
CT8	The number of methods, innovations, inventions, patents applied in construction
CT9	Percentage of delay in handover
CT10	Troubleshooting time (repairs damaged)
CT11	Quality of construction works
CT12	The percentage of works to be repaired (calculated according to the number of works)
CT13	Number of fatal accidents in a year

Biến	Indicator
CT14	Numbers of times reminded by the Labor Department in a year
CT15	Number of incidents causing damage to public works
CT16	Number of times injured accidents in a year
CT17	Average productivity
CT18	The rate of employees trained annually
CT19	Percentage of employees attending training courses on new construction techniques
CT20	Proportion of supervised buildings with certificates
CT21	The ability to quick payment
CT22	Quick ratio
CT23	Current ratio
CT24	Debt ratio
CT25	ROI
CT26	ROA
CT27	ROE
CT28	Gross profit margin

Then the following steps has been performed: Verify the quality of the scale (factor) by using the Cronbach's Alpha test for the sum of the variables; Valuation of variables, introducing new aspects of the performance measurement system by Exploratory Factor Analysis (EFA); Reassess the reliability of the scale in each aspect as found; Identify differences in indicators between different size groups of the ANOVA and Kruskal-Wallis non-parametric tests.

Table 2: Results Analysis of variance (ANOVA) ^a

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	189,113	6	31,519	77,449	0,000 ^b
	Residual	98,078	241	0,407		
	Total	287,191	247			

a. Dependent Variable: HQHĐ

b. Predictors: (Constant), ĐGKHAD, QTNBAD, ATLĐAD, ĐTPHAD, KNHTAD, KNSLAD

It is possible to generalize the relationship between the performance of an enterprise and the level of use of the performance measurement system as follows:

$$\text{HQHĐ} = 0,362 + 0,192*\text{ĐGKHAD} + 0,185*\text{QTNBAD} + 0,159*\text{ATLĐAD} + 0,137*\text{ĐTPHAD} + 0,112*\text{KNHTAD} + 0,295*\text{KNSLAD}$$

In Table 2, with Sig. <0.001, it can be concluded that the model given corresponds to the actual data or in other words, the independent variables have a linear correlation with the dependent variable with confidence level 99 %.

Data processing affects the application of the performance metrics system to performance

Following in-depth interviews with experts, the six indicators assessed by experts as the most important were used to examine the performance of building enterprises.

From the questionnaire survey of 28 questions on the use of 28 indicators of performance measurement when making management decisions, we only use data from 23 indicators in six dimensions to perform the analysis in the following steps: Reassess the value of independent and dependent variables by analyzing the EFA discovery factor; test the reliability of the scale in each aspect as found; model testing by multiple regression analysis.

Examine the EFA discovery factor for 23 separations into six aspects. Continuing analysis of ANOVA, Kruskal-Wallis has shown the difference in the system of performance measures by capital size. Following in-depth interviews to determine the relationship between the use of performance metrics and business performance, continue analyzing the EFA and Cronbach's alpha discovery factor for the dataset for applying indicators in the performance measurement system when making management decisions.

Table 3: The System of Indicators for Measuring Performance of Vietnamese Construction Enterprises

No	Aspects	Indicators
1	Evaluation of Customers	Percentage of satisfied customers in terms of quality of works
		Percentage of satisfied customers in term of the price of the works
		Percentage of satisfied customers on time of handover of works
		Percentage of satisfied customers about service attitude
2	Internal Process	The number of methods, innovations, inventions, patents applied in construction
		Percentage of delay in handover
		Troubleshooting time (repairs damaged)
		Quality of construction works
		The percentage of works to be repaired (calculated according to the number of works)
3	Labor Safety	Number of fatal accidents in a year
		Numbers of times reminded by the Labor Department in a year
		Number of incidents causing damage to public works
		Average productivity
		The rate of employees trained annually

No	Aspects	Indicators
4	Training and Development	Percentage of employees attending training courses on new construction techniques
		Proportion of supervised buildings with certificates
5	Liquidity	Quick ratio
		Current ratio
		Debt ratio
6	Profitability	ROI
		ROA
		ROE
		Gross profit margin

4. Recommendations

4.1. Recommended for construction enterprises

Recommendations are made from the perception of indicators in the new performance measurement system for each employee to use and evaluate these indicators. The next step is to maintain and develop a set of measurement criteria suitable for each enterprise to achieve higher efficiency

4.2. Recommendations for other organizations

Recommendations for investors, shareholders: Shareholders should rely on the results of the measurement system to make proper and reasonable investment decisions.

4.3. Recommendations for state management agencies

The management agencies should put the indicator system into the enterprise report as a basis for assessing and rewarding enterprises. At the same time, it is necessary to jointly organize training courses and disseminate the system of indicators to enterprises.

Recommendations for other organizations

Schools and training institutions should include this indicator system for performance measurement. The construction and accounting consultancy organizations can consult the indicator system for construction enterprises. Business associations may also apply this indicator system to the assessment, comparison and ranking of enterprises.

5. Research's limitations

248 samples are not small but not really big for the construction industry. Data collection has not reached a high level of feedback, the indicators of the system have not been fully measured and the indicators for listed companies have not been fully considered. These restrictions open up research directions for the measurement system of listed companies, general firms and other businesses.

6. Conclusions

The context of the Vietnamese construction industry with the role and characteristics of the existing construction enterprises affects the performance measurement system of Vietnamese construction enterprises.

The study highlights some of the characteristics of the Vietnamese construction industry, and is an extremely important role for the national economy.

Following in-depth interviews, 28 indicators were selected from 50 indicators. Quantitative analysis of the reliability of these 28 variables by Cronbach's alpha test showed that only 23 variables were satisfied.

Based on the results of the study, the authors provide recommendations for Vietnamese construction firms, shareholders, investors, state management agencies, universities and training institutions. Limitations of the study were also given, suggesting future research directions.

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Research on Effects of Merger and Acquisition on Financial Performance of Commercial Banks in Vietnam During Period 2011-2015

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Abstract

The objective of this research project is to explore the effect of mergers and acquisitions on the financial performance of commercial banks in Vietnam. The study is limited to a sample of banks listed on the Vietnam stock market that merged/acquired between the years 2011-2015. Comparisons are made between three years before and three years after acquisition, while the year of merging/acquisition is excluded. Using financial ratio analysis and paired t-test, the study reveals that merge and acquisition transaction does have effect on the overall financial performance of commercial banks in Vietnam. Using regression model, the direction of effect is estimated. The model suggests that M&A between commercial banks in Vietnam make the profitability of surveyed banks deteriorated. Thus, M&A has negative impact on the profitability of banks. It is suggested that the reason for this decrease because the combination of strong bank with weak bank can lead to the decrease of profitability. This research helps to contribute to evaluate the impact of Restructuring Banking System Project in period 2011-2015 of Vietnamese Government. It should be undertaken for longer time span, to check whether in the longer time, the profitability of banks after merge and acquisition increase or not.

Keywords: *Merge and Acquisition, Banks, Financial performance of commercial banks.*

1. Introduction

The importance or necessity of research topic

Merger and Acquisition (M&A) has become the popular activity through the world over the last decades. In Vietnam, the M&A waves started to develop from 2008 until now, and 2015 and 2016 witness the peak in amounts of M&A cases in Vietnam. In 2016, there were many big M&A cases happening in Vietnam, in which there are the participants of many International Corporations. Among those, the reform of restructuring the banking system is attributed to play major role for M&A movements in Vietnam from 2011 until now. The purpose of the this restructuring reform is to erase the weak and small commercial banks and financial institutions in Vietnam banking system. By there, the stability and effectiveness of financial system in Vietnam is enhanced. The process of restructuring the banking system is divided into two periods: 2011-2015 and 2016-2020. Therefore, it is necessary to look back the results of the first period, then the overview of the restructuring financial institutions project can be seen, and the strategy for the next period can be made more effectively. For this reason, the author undertakes this research to find out how the merge and acquisition activity can really increase financial performance of Vietnam.

Identify the issues of research

There have been few studies on effects of mergers and acquisition on performance of firms in the financial sectors in Vietnam, i.e. commercial banks. For example, Nguyen Quang Minh (2012) researched on the role of mergers and acquisitions on the efficiency of banking activities by commercial banks. However, these studies do combine many different approaches to evaluate the influences of M&A on banks' performance. Little has been resolving this purpose by evaluating financial ratio as the proxy for the financial performance of banks. Besides, some other researches mainly focus on analysing M&A impacts on individual case by using case study approach. Therefore, the research on impact of M&A on the performance of banks from quantitative approach could give the new perspective to look at on this picture. Therefore, this study will try to evaluate the changes of financial performance of commercial banks in Vietnam after participating in the merge and acquisition transaction during period from 2011-2015, in terms of its profitability and its solvency.

2. Literature Review

Through the review of previous research, M&A transactions can impact on the financial performance of bank, and also have no impact at the same time. Many researchers such as Altunbas & Marques (2007) affirm that M&A has significant impact on performance of banks in terms of all sphere including profitability, liquidity, leverage, capital adequacy and size. Beena (2000) showed that the increase of profitability could create the improved monopoly and enhance efficiency. Therefore, it M&A transaction can improve the profitability of firm, it is also can enhance the performance of firms as well. Kithinji (2007) carried out a study on the effects of mergers on financial performance of non-listed banks in Kenya by focusing on the profitability of banks that merged between 1994 and 2001. The

results showed significant improvements in performance of non-listed banks that had not merged within the same period.

Caprion (1999) and De-Nicolo (2003) provide the evidence that merger and acquisition can help to improve the bank efficiency through M&A. Some other studies, also affirms that after merger, banks can improve their profit efficiency significantly Stiroh K (2002). Straub T(2007), by researching on commercial banks in the United State, figured out that banks with larger scales, through merger and acquisition can have more opportunities to increase its profitability. David and Yener (2004) through their research points out that merge and acquisition can help to develop the financial performance and efficiency of banks.

There is also empirical evidence that merger and acquisition deals do not significantly influence the profitability and financial performance of corporate firms. Straub (2007) also showed evidence that merger and acquisition failed to increase the profitability of banks. Among cases that Straub surveys, he found out that the difference of banks' profitability before and after meger is not materialized. Beitel et. Al(2003) in their research also pointed out that there is no gain in term of profitability of banks before and after M&A. Vennet (2002) found partial profit efficiency enhancement, but not with any tangible gains in terms of cost efficiency and return on assets for European target banks on the first year after an acquisition. Correa (2008) research the movement of banks condition within 2 years after acquisition, and there was no improvement to be seen. He explained that profitability was affected by a decrease in the banks' net interest margin and by the lack of cost-efficiency gains. Delong and DeYoung (2007) also see no positive relationship between M&A transaction and the financial performance of US banks in their study.

Thus, from the review of previous studies, the results that researchers suggest are quite varied. Positive relationship, negative relationship and no relationship can be seen between M&A event and bank's profitability. Some affirms that M&A can help to enhance the efficiency of banks, but not for profitability.

Through review of literature review, there are two main empirical methods usually used to measure the level of success of bank M&A in terms of financial performance.

The first method is comparing accounting variables before and after M&A based on financial, accounting approach [Mylonidis and I. Kelnikola, 2005; Badreldin and C. Kalhoefer, and Ekkayokkaya et.al, 2009) and investigating the cost and profit X-efficiency [Ekkayokkaya et.al, 2009]. Some studies use both two approaches of accounting ratios with cost or profit efficiency (Becalli and P.Frantz, 2008).

The second method is more comprehensive. It uses event study methodology to evaluate the impact of M&A – which is an event. This methodology is really appropriate to examining the effects of any type of event on some objects such as the change of stock price. (Knapp et. al, 2006; Campa and Hernando, 2005; and DeLong and DeYoung, 2007).

3. Theoretical Framework

A Merge and Acquisition transaction which can be designed and undertaken carefully can create the sustainable value for the merged firm, by improving the operating efficiency and taking advantages creating from M&A transaction. However, the wrong decision of M&A can destroy the whole entity, along with the burden of paying merging cost which exceed the benefit earning from that M&A. There are some theories about the efficiency of Merge and Acquisition which should be reviewed as discussing about M&A.

Synergy Theory

The general aim of merge and acquisition activities is achieving the Synergy Efficiency. This objective can be achieved when the value of firm after acquisition is larger than the total value of participating companies before merger (Jensen and Ruback, 1983; Bradley, Desai and Kim, 1988). This effect is usually described as the equation $1+1 = 3$. Synergy Efficiency should be considered both in terms of operating synergy and financial synergy which can be created from the effort to minimizing the cost of M&A activities, improving the operating of new firm, enhancing the revenue by taking advantages of distribution network expanding, larger market share, and some other financial benefits (Seth, 1990). Besides, the diversifications of companies operation is also likely to be considers to the motivation to create the effect of synergy. The Synergy effect is also created from improving the performance of incumbent management or achieving some form of synergy. Synergy theory expects that there is really something out there, which enables the merged entity to create shareholders value. This concept held that acquisitions were executed to achieve synergies.

Valuation Theory

This theory assumes that the acquiring firm has valuable and unique information to enhance the value of the target company by purchasing an undervalued asset or developing benefits from joining the target's business with its own. Trautwein (1990) pointed out that there is also criticism about this theory. They claim that there are tangible information hiding under the M&A case which are unlikely to collect and be aware of accurately. Furthermore, they propose that one of initial steps of any M&A cases which is that all participants in the M&A have to sign Non Disclosure Agreement. Therefore, the information announced in public is mostly the general information, while private information plays the crucial role for further consideration. That explains why there is situation that the assumption about the market efficiency can face with problematic issue.

Monopoly Theory

This theory suggests that the objectives of doing merge and acquisitions is to gain more market power. This type of acquisition is the drive for the appearance of conglomerates – the type of companies who have many subsidiaries which provide very different product and services. Operating under the form of conglomerates have many advantages of which, conglomerates can save cost by using cross-subsidized products, reduce the competition in the market, and discourage the entrance of new players in the market. This suggestion of

monopoly theory supports the content of Synergy theory (Trautwein, 1990). However, he pointed out that this theory is less effective than that of the Synergy theory.

Empire building theory

Roll (1986) is the first one to introduce the theory about the over optimistic of managers (Hurbis Theory). This theory assumes that the market is efficient, and the managers usually give the decision to take part in M&A transaction due to their optimistic about the ability to create added value for their company and over-estimate the Synergy Benefit. Some empirical researches point out that it is common that managers who are in the scope of this theory usually give the decision reducing the returns of the shareholders. Malmendier và Tate, (2008). Doukas and Petmezas (2007) and Billet and Qian (2008) found that the managers who achieved some success at the first steps, tends to make some worse decision later. So, the question is, how a optimistic managers can be defined with regard to their decision of entering the M&A transaction or not. Hayward và Hambrick (1997) defined that who are willing to acquire a company at the price which is higher than the added value that this transaction can bring to their company, are optimistic managers. However, this definition also is criticized by many other opinion. They claim that that called “added value” above is influenced by many other factors, so it could not be the perfect criteria to evaluate the optimism of the managers. This theory is helpful to assess whether M&A decision is effective or not.

4. Research Methodology

This study uses quantitative approach. Financial ratios would be used as proxy for the financial performance of banks, which could be collected by handling with some items which are easily found in financial statements of surveyed banks. Financial statement of banks are collected from the website www.finance.vietstock.com. Ratios are chosen to evaluate the financial performance of banks includes:

Return on Asset = net income/ total asset

Return on Equity = net income/total equity

Net profit margin = Net income/net sale

Debt to Asset = Total Debt / Total Asset

Growth_n = (Sale_n – sale_{n-1}) / sale_{n-1}

Sample Collection

The sample is all M&A cases between commercial banks during period 2011-2015. The choice of this period is because this is the time that the wave of merging between banks happens strongly in Vietnamese financial market. The list of M&A transactions was taken from website of State Bank of Vietnam, was calculate with only completed transactions, included only mergers and where data (balance sheet, financial statements) were not available for 3 years pre and post-merger transactions. The final sample comprised 4 transactions. The list of merger as in the table 3.1

**Table 3.1. Brief of M&A case between commercial banks
in Vietnam during 2011-2015**

No.	Time	Participants	Post-merge Bank
1	2011	Vietnam Tinnghia Commercial Joint Stock Bank (Tinnghia Bank) First Joint Stock Commercial Bank (Ficombank) Saigon Commercial Joint Stock Bank (SCB)	Saigon Commercial Joint Stock Bank (SCB)
2	2012	Hanoi Building Commercial Joint Stock Bank Saigon Hanoi Commercial Joint Stock Bank (SHB)	Saigon Hanoi Commercial Joint Stock Bank (SHB)
3	9/2013	Vietnam Petrolimex Corporation (PVFC) Western Bank	Vietnam Public Joint Stock Commercial Bank (PVcombank)
4	2013	DaiABank Hochiminh Development Commercial Joint Stock Bank (HD bank)	Hochiminh Development Commercial Joint Stock Bank (HD bank)

Source: State bank of Vietnam, 2011-2015

Data analysis method

- The paired T-test

In order to examine whether the selected ratios above change significantly pre and post merger or not, the paired t-test would be used for each ratio. In our case, each ratios of each bank are measured twice, before and after merger. Therefore, by using T-test, we will examine whether the mean of sample before merger and after merger has changed significantly or not, then we can decide whether merger impact on these ratios significantly or not.

We would use T-test for all the variables including: ROE, ROA, Net profit Margin and Leverage ratio as independent variables. The T-test would help us to evaluate the changes of each variable before and after acquisition. The hypothesis for T-test of the sample selected is stated as following:

ROA

- The null hypothesis (H_0) : there is no different between the mean of ROA of commercial banks in Vietnam before and after M&A deal (which means M&A has so significant effect on ROA of commercial banks)
- The alternative hypothesis (H_1): there is different between the mean of ROA of commercial banks in Vietnam before and after M&A deal

The similar Hypothesis are applied in case of ROE, Net profit margin, and Leverage ratio.

Regression model

Linear regression model would be applied to the panel data to estimate the influence of merger and acquisition on the changes of the financial ratios.

The relationship between bank performance and merger of banks and the degree to which merger explains the changes were determined using regression model below:

$$ROA_{i,t} = \alpha + \beta_1 * MGR_{i,t} + \beta_2 * total + asset_{i,t} + \beta_3 * lvr_{i,t} + \delta$$

The interpretation of above variable is explained in the table 3.2.

Table 3.2. Variables explanation

	Types	Definition	Expected Relationship
ROE	Dependent variable	Return on Equity	
TOTAL_ASSET	Control Variable	The total asset of banks	Positive
MGR	Dummy Variables	Independent Variable: Merger = Dummy variable. 1 for Post-merger otherwise 0 for Firm i in time t	Negative
LVR	Control Variable	Leverage = The ratio of Total Debt to Total equity for bank i in time t	Negative
GROWTH	Control variable	The ratio of net sale increase through year	Positive

In this model, ROE will be used as the proxy for the profitability of banks, and play the role of dependent variable in the model.

In order to measure whether M&A impacts on the profitability or not, we would use MGR as dummy variable which has only two values 0 and 1. In which, MGR = 0 in case of banks before the merger, and MGR = 1 for banks after merger. The difference in financial performance of banks is only significant if $\beta_1 \neq 0$. (Meaning that MGR has effects on Profitability of firms).

Other variables including Total_Asset, LVR, GROWTH are control variables. Control variables are usually variables that are not the purpose of the researcher, but they are related to the dependent variable, so it is necessary to included them into the model. The role of control variables in the model are similar to independent variables.

After estimating the model, some assumption of linear regression model are tested in order to ensure the validity of the model.

5. Findings

At first, the statistical analysis results are undertaken for every variables, and the result as presented in table 4.1.

Table 4.1 – Mean of variables

		mean (ROA)	mean ROE	mean NPM	mean TDA	mean Growth
SCB	Pre Merger	0.015461	0.074451	0.181483	0.771406	0.892379
	Post Merger	0.000345	0.005400	0.003674	0.933537	0.536420
Saigon Hanoi Bank	Pre Merger	0.010673	0.115422	0.131019	0.906221	0.620274
	Post Merger	0.004826	0.076053	0.078535	0.936972	0.069641
Pvcombank	Pre Merger	0.004353	0.034889	0.057954	0.859748	0.742729
	Post Merger	0.000950	0.010402	0.020237	0.907924	1.182928
HD bank	Pre Merger	0.009886	0.081131	0.102028	0.852478	0.884850
	Post Merger	0.005600	0.072990	0.078680	0.920210	0.325470

Source: results of excel calculation

Looking at table 4.1, all the banks show decreasing ratios through M&A event. There is a significant decrease of Return on Asset (ROA) ratio, return on equity and net profit margin. From this analysis, it seems that M&A has negative impact on the profitability of banks. In term of solvency, the Total debt to Asset ratio increase after M&A for all cases, which means that the solvency ability of banks also decreases. Larger amount of capital resources is derived from liability. Thus, both profitability and solvency of banks decrease, which means that financial performance of commercial banks in Vietnam go decrease after M&A event. The growth of sale, except case of PVcombank, also fell down dramatically. Especially Lienvietpost Bank's growth, plunged from 1.04 to only 0.06. Thus, on the contrary to the review of literature, through the comparison of mean of financial ratio before and after M&A, the results show that M&A has had negative impact on the financial performance of banks.

Table 4.2. Mean of Standard Deviation

		std ROA	std ROE	std NPM	std TDA	std growth	N
Saigon Commercial Bank	Pre Merger	0.007703	0.037480	0.037260	0.091027	0.661008	3
	Post Merger	0.000099	0.002053	0.001141	0.013698	0.857037	3
Saigon Hanoi Bank	Pre Merger	0.002688	0.025872	0.059299	0.006425	0.496341	3
	Post Merger	0.001024	0.005728	0.013254	0.008606	0.129260	3
Pvcombank	Pre Merger	0.002502	0.022489	0.038938	0.025747	0.774525	3
	Post Merger	0.000517	0.005896	0.013328	0.009157	1.687987	3
HD bank	Pre Merger	0.003016	0.036083	0.034880	0.042775	0.777002	3
	Post Merger	0.000703	0.022789	0.002637	0.015418	0.091049	3

Source: results of excel calculation

The standard deviation of variables also are examined to check the dispersion of value from the average value. The SD of ROA is really small, (<1%), thus, ROA value of banks are not dispersed very much from the average value. SD of ROE, TDA and NPM are also

really small, (<4%). Thus, it can be seen that the value of financial ratios in the selected sample are not too differentiated from the mean value. Thus, the conclusion above about the impact of M&A event on the financial performance of commercial banks in Vietnam during period from 2005 to 2010 can be inferred for all years in period surveyed of each case (3 years before and 3 years after M&A event, excluded the year of M&A event)

Independent sample test result

In this part, the paired T-test is used to examine the difference between the financial ratios of all sample before and after M&A event. Paired t-test is really a robust test to resolve this problem. Eviews is used to do this test for each ratio. The results are as following:

Table 4.3: Results of paired t-test

		mean	standard deviation	t-value	significant
ROA	pre	0.010093	0.005128	4.356588	0.0003
	post	0.002930	0.002479		
ROE	pre	0.076473	0.035351	2.408342	0.0248
	post	0.041212	0.036369		
NPM	pre	0.118121	0.057091	3.730896	0.0012
	post	0.045281	0.036258		
LVR	pre	8.820496	1.344218	-4.152494	0.0004
	post	12.85699	3.087397		
GROWTH	pre	0.785058	0.568501	0.823099	0.4193
	post	0.528615	0.917405		

Source: results of Eview output

Table 4.3 illustrates the results of independent t-test from the Eview output of the sampled banks for the evaluation of the relative change in the financial performance. The means, standard deviations and t-value and p-value of the test all are presented in the table. The profitability position of bank, measured by Return on Asset (ROA) and net profit margin (NPM) and Return on Equity (ROE), all show the clear decrease.

ROA: t-value of ROA is 4.356, at p-value of 0.0003 (<5%). So, the null-hypothesis is rejected, and the alternative hypothesis is accepted. Thus, ROA before pre and post M&A is changed, which means that M&A has effect on ROA, in positive trend because t-value of ROA larger than zero.

ROE has the similar result as ROA, with t-value of 2.408342, and p-value equal to 0.0248 < 5%. As ROA, M&A does have effect on the changes of ROE positively. Nevertheless, t-value of ROE is smaller than ROA, it could imply that the changes of ROE is smaller than ROA's.

NPM also changes after M&A, with t-value of 3.73 and p-value equals to 0.0012 <5%. Thus, M&A does have effect on NPM.

LVR, on the contrary, has negative value of t-value, with p-value of $0.0004 < 5\%$. M&A, then, can influence on NPM of banks, in negative trend.

However, GROWTH doesn't have p-value smaller than 5% (at 0.4193), so the null hypothesis is accepted, which means that M&A doesn't have significant affect on GROWTH rate of banks.

Thus, through the paired t-test with the classification variable if Merger, there are ROA, ROE, NPM and LVR are influenced by M&A events. Among those, M&A has positive impact on 3 formers, while it has negative impact on the latter. This test doesn't admit the relation between M&A and GROWTH.

Panel Data Analysis and Estimating the regression model

Descriptive statistic

Table 4.4. Descriptive statistic

	ROE	LVR	GROWTH	MGR	TOTAL_ASSET
Mean	0.058843	10.83874	0.656836	0.5	113,734,934.67
Median	0.063879	10.10828	0.359249	0.5	107,392,198.00
Maximum	0.128530	18.68797	3.110908	1	242,222,058.00
Minimum	0.003247	6.762191	-0.12188	0	45,107,087.00
Std. Dev.	0.039429	3.110209	0.75779	0.510754	49,723,211.88
bservations	24	24	24	24	24

Correlation matrix

Table 4.5. Correlation Matrix

	ROE	MGR	LVR	GROWTH	TOTAL_ASSET
ROE	1.000000				
MGR	-0.456767	1.000000			
LVR	-0.132679	0.662868	1.000000		
GROWTH	0.006066	-0.172844	-0.255000	1.000000	
TOTAL_ASSET	-0.392585	0.688493	0.916749	-0.293712	1.000000

From the table, it can be seen that MGR has pretty strong negative relationship with Return on Asset, with the correlation coefficient equal to -0.456767 . Other control variables, Total_asset also has the same relation with ROE similarly. Leverage, also has negative relationship with ROE, but less strong with the correlation coefficient of only -0.1326979 . Growth seem not to have relationship with ROE, with really small correlation coefficient

Among independent variables, Leverage has strong positive relationship with MGR and TOTAL_ASSET, 0.6888493. LVR and TOTAL_ASSET also has strong relationship, with correlation coefficient is 0.916748. MGR and LVR also has pretty strong relation. Therefore, this could cause the phenomenon of Multicollinearity. Therefore, the variance inflation factor test would be done in the next part to examine whether the multicollinearity exists in the estimated model, and serious or not.

Estimating the model

Using Eviews to estimate the linear relationship of ROE with MGR, with Total_asset, LVR and GROWTH being control variables

Table 4.6: LS estimation

Dependent variables	ROE
α	0.008441
<i>t</i> -stat	0.312602
MGR	-0.033895**
<i>t</i> -stat	-2.169295
Lvr	0.019304***
<i>t</i> -stat	4.144648
Total_asset	-1.208E-09***
<i>t</i> -stat	-3.969060
Growth	-0.006723
<i>t</i> -stat	-0.845876
No. of obs.	24
R ²	59.6%
Adjusted R ²	51.1%

*, **, and *** denote statistical significance at the 10%, 5% and 1% levels.

We find that the estimated coefficients on the MGR is negative ($\beta_1 = -0,033895$) and statistically significant at the 5% level. Our finding, therefore, rejects the null hypothesis that β_1 is equal to zero, which means that MGR does have affect on the financial performance of banks participating in M&A in Vietnam during period from 2005 to 2011. Thus, the result that OLS model gives is similar to the result of paired t-test that M&A event has negative impact on financial performance of banks surveyed.

For control variables, total_asset also has negative influence on ROE of banks. The results for total_asset is that estimated coefficients on the total_asset is negative ($\beta_2 = -1.208E-09$ ***) and statistically significant at the 1% level. Thus, according to this result, the

increase of banks's size doesn't really increase the ability to create profit of bank, but make it weaker. However, the decrease of ROE ratios derived from too large scale of total_asset is really small, but still meaningful.

In the context of participating on M&A, lvr shows the changes in the same way with ROE. The estimated coefficients of lvr is positive (0.019304) and statistically significant at the 5% level. Thus, as ROE increase, banks have to face with problem of debt to equity ratio increases, which means that the solvency ability of banks decreases.

For GROWTH, the estimated coefficients on the GROWTH is positive ($\beta_3 = -0.006723$) and not statistically significant. This means that with the sample of banks being surveyed, GROWTH has positive impact on ROE of banks. As GROWTH increase, along with the improvement in net sale (because GROWTH is calculated by $(SALE_n - SALE_{n-1})/SALE_{n-1}$), profitability of bank also increases. However, this conclusion does not have statistical meaning, so if the sample has larger amount of observation, this result could be changed.

The estimated intercepts are positive, indicating that there is 0.008441 in value of **ROE** is unexplained by the dependent variables. However, the probability (p-value) of intercept has no statistical meaning (larger than 10%). Therefore, this value could be changed if the sample is in larger scale.

With regard to the coefficient of determination

R squared of the model is pretty large 56.9%, which means that the dependent variables ROE can be explained 56.9% by this model. Thus, this model has high meaning in explaining the value of ROE.

Thus, by using OLS regression, we have the estimated model as following:

$$ROE = 0.008441 + -0.033895 * MGR + 0.019304 * LVR + -1.208E-09 * total_asset + -0.006723 * GROWTH + \epsilon \quad (4.1)$$

Diagnostic test to evaluate the fitness of the regression model

In order to examine the fitness of the model (4.1) F-test would be used in this part of the research.

We use **Wald test** to undertake F-test, the result of the model 4.1 is presented in appendix 3, with the probability <1%, so the null hypothesis is rejectes, which means that at least a coefficient is different to zero. So, the model (4.1) can explain ROE well.

The similar result outcome in case of multivariate regression model. (Appendix 6)

Thus, both model explain well for the population.

A VIF of 1 means that there is no correlation among the *independent variables* and the remaining independent variables, and then the variance of *coefficients* is not inflated at all. The general rule of thumb is that VIFs exceeding 4 implies further investigation, while VIFs exceeding 10 means that there exists serious multicollinearity in the estimation, and the model needs to be corrected.

The result of VIF test for the model 4.1 as following

Table 4.7: Results of VIF test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000729	23.02029	NA
MGR	0.000244	3.854226	1.927113
TOTAL_ASSET	9.27E-20	44.81087	6.937204
GROWTH	6.32E-05	1.958034	1.097571
LVR	2.17E-05	86.81447	6.349570

Looking at Centered VIF, we can see that all the value of Centered VIF < 10. Thus, the multicollinearity in the model is not serious, and acceptable. Thus, we don't have to justify the model for resolving the problem of multicollinearity.

Checking the autocorrelation of residuals

To check the autocorrelation, the LM test is used, with the amount of lag is 2.

The result as following:

Table 4.8. The result of LM test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.078608	Prob. F(2,17)	0.3622
Obs*R-squared	2.702543	Prob. Chi-Square(2)	0.2589

As stated in the Chapter 3, The value of Prob-Chi-square (2) equal is the p-value of Obs*R-squared is the result of this test, which equals to 0.2589 > 5%. Therefore, we accept the null-hypothesis, that there is no auto-correlation of residuals in the model.

6. Recommendations and suggestions.

This study attempts to look into and make a comparative analysis of the effects of M&As in the Vietnamese banking system. It focuses on commercial banks taking part in M&A from 2010-2015. Though the period is short, but the result can be noticeable. The univariate analysis exposed profitability after M&A for commercial banks with the t-test showing significant difference in profitability before and after merger. The indication from panel methodology shows that that M&A has negative impact on the profitability of banks. This research helps to evaluate the impact of M&A on banks through the first period of restructuring reform of Vietnamese banking system. Overall, it can be inferred from this research, that M&A does not always enhance the profitability of banks. However, it would be mistaken to propose that M&A activities always has negative impacts on banks.

Recommendation for further research

This research has some limitations of small data scale. Therefore, there are some suggestion for further research as following. This research can be undertaken with the larger amount of cases in the future, and at the longer time span. With the larger scale of time and expense, data should be collected more fully. Besides, the analysed of financial performance should be more comprehensive in terms of profitability, liquidity, solvency, quick ratio, current ratios and some other specialised ratios of banking industry. The similar research is also done with firms in other industry such as Retail Industry, which has been starting to be well-developed in Vietnam.

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**Research on the Transfer Pricing Phenomenon of Fixed Asset
at FDI Companies in Vietnam**

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Abstract

At present, Vietnam has been integrating in the economy of region and the world, with an open door policy to attract the investment. FDI companies has become an active part in the economy of Vietnam. However, taking an advantage of potentials and preferential policies of Vietnam, some FDI companies have carried out the activities related to transfer pricing. In the transfer pricing phenomenon at present, an issue necessary to pay attention that is fixed transfer pricing while making a price is not based on the market price to change the real value of asset as a unlicensed operation. Article on researching the argument base of transfer pricing phenomenon relevant to the fixed assets, use of qualitative method of researching to interview the customs officers, professional tax officers relevant to transfer pricing in some provinces to have a clearer way of looking at the fact of fixed asset transfer pricing. Through interviews, the authors found that the issue of transfer pricing was most significant for intangible fixed assets in various forms, so the authors propose the methods of restricting the transfer pricing phenomenon.

Keywords: *FDI Companies, Fixed assets, Transfer pricing.*

JEL codes: *M41*

1. Introduction:

Transfer pricing is a popular phenomenon in the world and Organization for Economic Cooperation and Development (OECD) (2014) has referred to the concept of price transferring as a transfer of assets, goods or service in the internal company, so this act must be considered in the transacting scope of associated subjects

Act of transfer pricing has been increased in the recent years and still continued in the following years. According to Nguyen Xuan Truong and co-workers (2017) looked back in the previous years since 2009, there has been 1,100 FDI companies in HCM City announced on loss, number of progressive lost companies in excess of the owner's capital have increased from 141 (in 2007) to 232 in the year of 2009. Next, in 2014, according to the Ministry of Finance as promulgated with a report of General Department of Taxation has inspected 870 FDI companies and found out 720 companies violated on the transfer pricing, evading tax, in which, some counts rate of violation up to 100%. In which of violated rate in HCM City is 85%, Hanoi is 90%. Authorities have searched for VND 1,500 billion of tax. In 9 beginning months of year, General Department of Taxation has also carried out checking 1,990 lost companies, with the symbol of transfer pricing, collecting, penalty and refunding with VND 1,559.8 billion, reduced loss at VND 4,720 billion, reduced the discount of VND 99.9 billion. This is regarded as "figures" alarming on the fact of transfer pricing at present in companies of Vietnam. There are many ways of transfer pricing especially at the tendency to carry out the price transferring by means of fixed asset transfer has been popular. According to Le Thanh Ha (2017), operation of fixed asset valuation is an operating containing a lot of risk. Price valuation is not based on the market price aimed to change the real value of fixed asset for the purpose of transferring profit or evading tax are illegal. Operation of transfer pricing of FDI companies in Vietnam not only make loss of revenue in tax but also caused to the unhealthy situation of competition in economy

Therefore, researching on the transfer of pricing in which of fixed asset transfer pricing of FDI companies is necessary, contributed to control, prevent the phenomenon of transfer pricing, evade the loss of tax revenue from these companies in Vietnam

2. Theoretical Framework and method of research

2.1 Theoretical Framework

According to OECD (2010): "Transfer price is the price of tangible goods and intangible or price of providing service that a company has transferred to the other associated company"; Fixed asset transfer pricing of FDI companies relevant to the tangible and intangible fixed assets of companies

- *Transfer pricing by means of transfer operation of tangible assets*

According to Nguyen Ngoc Lan (2016), the transfer of manufactured machines and equipment: Machines and equipment are often provided by the parent company for the subsidiary company as manufactured units. Machines and equipment transferred can be the medium to support for subsidiary company or can be in the form that parent company will sell the completed production line to newly established subsidiary company. This equipment can be purchased from outside, manufactured by the parent company or can be old equipment of parent company or other subsidiary company has not the requirement to use. One of reasons for the companies to carry out the transfer of price in this transaction is to reduce tax and maximize the profit by means of asset valuation higher or lower than market

price. Therefore, tax rules have required the transfer of equipment must be applied with market price for this type of transaction at the time of transaction

- *Transfer pricing by means of transfer operation of intangible assets*

Types of intangible assets include the commercial advantage, patent, trademark and brand, intellectual property, license, publishing right, ability to provide services ... Intangible assets without material features, but it is possible to create the economic benefit in future, it can be defined separately and can be protected with the legal right. According to Nguyen Huu Anh and co-workers (2016), intangible assets have made the monopoly or quasi-monopoly in products of ownership companies, so the value of this asset has also features of market and it is difficult to compare, define on the market. This is also “an advantage” for the companies to carry out the activities of transfer pricing

Activities of transferring the intangible assets are carried out in four ways:

(i) Selling and collecting money at once

(ii) Transfer that is not necessary to pay money (donating)

(iii) License to change and take the copyright royalty (paid once or many times according to the percentage of revenue, total amount above a unit, etc...)

(iv) License without losing money to use the copyright

By this way, form of transfer is not necessary to pay money that is nearly not accepted by the tax authorities in the transactions of transfer pricing and the most popularly is the form of transferring the intangible assets by means of licenses

As considering the issues relevant to transfer price, intangible asset is divided into three main groups: Group of intangible assets relevant to production, group of intangible assets relevant to the marketing activities in companies and group of mixed intangible assets

- For the group of intangible assets relevant to production: Including the assets such as patents, secrets of production technique. As transferring the patents to the branches, associated companies, it is necessary to evaluate the monopoly level of company for the patent because this is a basis for verifying the properly value of assets in transaction and transfer. For the secrets of technique; depending on the features of manufactured branch, manufactured articles to define the value of this asset

- For the group of intangible assets relevant to the marketing activities in companies: This is the asset made from marketing activities, distributing activities and after sale services. Intangible assets in this group include the brand name and trade mark, fame of company, quality of sale team or capability of providing the service and training for customers. For the trademark and brandname, feature of these assets is also created in the life cycle of products (or products of one brand name) at a certain market in a certain period of time. Value of this asset is very small if it is a new product or participating in a new market. This is an important basis for valuating the transfer of this asset. Fame of company has shown the commercial advantage of company. Company has a good fame, so sales team has a good

quality, good after sales services. After sales services and training the customers are also important asset of company. Definition on the properly transfer price of this asset required a very careful knowledge about the features of every branch, every type of product provided by the company

- Group of mixed intangible assets: These are mixed intangible assets either having the features of assets relevant to production, or having the features of assets relevant to marketing activities such as the fame of company originated from the product they have made with high quality and efficient advertising strategies. Or soft product of informatic company, sale of soft product for the customer either has feature to transfer the products for customers to use, but also has the features to transfer the copyright. For these assets, to define the transfer price in internal transactions, that is necessary to define clearly which company has developed with this asset? Is that company possible to get the money from customer according to the reasonable price or not?

2.2 Method of researching

This article uses the method of qualitative researching by means of interview activities. The research uses the method of interview or discuss in group for 7 tax officers and 8 custom officers. Customs officers strictly relevant to the task of transfer pricing of enterprises. Group discussion is carried out in some city provinces: Hanoi, Da Nang, Khanh Hoa, In provinces divided in the unified groups relevant to the tax branch or customs. Ideas recorded to serve for the research of fixed assets price transfer in FDI companies

3. Result and discussion

By means of interviewing the general ideas of managing officers interviewed to control the price transfer as a complicated task required a combination of different authorities. If lacking the combination, state offices such as tax office, customs office,... are not able to control the activity of transfer pricing more complex. Group discussion related to the transfer pricing phenomenon of intangible and tangible fixed assets as recorded and analyzed by the author

- For the transfer pricing phenomenon relevant to tangible fixed assets

Tangible fixed assets transfer from a foreign company to foreign investment capital contributed enterprise in Vietnam is carried out in the popular ways: joint venture capital contribution, transfer of asset to form the fixed assets of enterprise, purchase or rent again the asset to operate production, processing work. In principle, profession of transferring goods or tangible assets must be agreed by both of joint venture partners. In case, there is no agreement from one of parties, such assets ,must be appraised by the competent authority. However, in fact that defining the price of capital contributing assets is no simple and carried out rightly according to the regulation. According to some specialists, many foreign partners have an intention to count the price very high with real value for machines and equipment imported by them in Vietnam to contribute the joint venture capital. For the case that foreign enterprises enhance the value of importing asset value to contribute the investment capital occurred quite popular. This trick brings back a lot of profits for companies such as increasing the gradually capital contribution to override the right to coordinate the joint

venture and divided at the high interest rate; increase the rate of counting the annual depreciation from then to increase the cost price of product. In addition, joint venture is lost in extension will cause the State to lose the tax revenue that makes the joint venture to become a company with its 100% foreign capital

- For the phenomenon of transfer pricing relevant to the intangible fixed assets

However, according to the interview tax officers has shown the most difficult to the tax authority, it is difficult for customs office to define the logic of expenses for subsidiary company of Vietnam to pay for parent company in foreign country on transferring the intangible assets. Due to the value of intangible asset value is very complicated problem, it is difficult to define because the most of highly monopoly feature, depending on the subjective calculation of mother company, so it has not the market value to compare, adjust. When asking the specialists relevant to the intangible assets problem such as land, trademark has any problem in inspection and checking the price, the specialist has shown that some of small provinces has not many FDI companies such as Khanh Hoa, fixing a price has also a lot of difficulties. Most of officers showed that Vietnam has not built the data base on price for the types of fixed asset that caused difficulties to inspect, check the operation of transfer pricing of companies

Some of tax officers showed that foreign companies in fact have transferred to the subsidiary companies of Vietnam with a lot of old technology, out of date and semiautomatic, for example as in a tea processing company of Taiwan. This caused to the consequence as: one aspect, we still have to use the old technology, out of date, the use caused influence to the environment; in other words, we must pay for copyright fees for technology transfer is very high compared with its real value. The cause of this status is due to take part in the joint venture, the side of Vietnam has not a good preparation in negotiation, so drafting the contract has been made in available by the foreign partner. Therefore, technology transfer cost has been imposed by the side of foreign country at very high price level. As deciding the price of intangible assets, in addition to consider the technical features, legality, economics, transacting price in the market, investment expenditure, policies of encouraging the commercialization,... it is necessary to consider more the specific element of this asset like: protecting situation; protecting scope; remained time in the protective term as written in the protective degree; risk ability happened in the process of using the patent, for example: the ability is cancelled in validity, encroached; difficulties, obstacle to economy, technique in use, exploitation, commercialization

By means of interviewing the tax cadres, customs officers in some provinces interviewed have shown that transfer pricing is very complicated, so it is necessary to coordinate with many office, branch to check. In addition, some officer shave felt that penalty on companies related to FDI is not strong enough. Therefore, in addition to increase the penalty level related to transfer pricing, so it is necessary to have a law relevant to transfer pricing. Law can be adjusted only in some areas, bear the price intensive. If it is not carried out early, transfer pricing has been becoming more serious

4. Conclusions and Policy Implications.

FDI Companies are often big tax payers due to the transfer pricing activities have influence on the State budget sources. Therefore, management authorities need to have the solutions to restrict on the transfer pricing of FDI companies in general meanwhile there are professions related to the fixed assets of companies

- **First point, increasing the combination in the management operation of transfer pricing between the State authorities**

Transfer pricing has a lot of purposes to reduce the direct tax, indirect, beneficiary from the dividend,... Associating transaction activities of companies are not in a province that is related to many different sectors, related to many different nations, so it is difficult to control without any combination between the departments and different locals. In addition, according to the Decree No 20/2017/NĐ-CP on regulating the tax management for the companies with associated transaction to grasp the associated relationships that is necessary to grasp in fact transaction of enterprises, personal relationship of transacting parties. So, in the operation of supervising, inspecting that is necessary to have a cooperation of relevant parties in State Management such as General Department of Taxation, General Department of Customs, State Auditing, Bank, Appraisal Offices,....

- **Second point, completing the systems of legal documents relevant to transfer pricing**

On 24/2/2017, the Government has promulgated the Decree No 20/2017/NĐ-CP to regulate the tax management on the associated transaction companies. Decree No 20 is valid to implement from 1/5/2017. This decree is used to replace for the Circular No 66/2010/TT-BTC on 22/4/2010 of the Ministry of Finance. This is regarded as a great improvement for the transfer pricing operation of companies. However, Decree No 20 has not put forward the penalty level specifically for the transfer pricing of companies. Strict penalty level has an advantage of transfer pricing restriction. Additionally in future, by means of interviewing many opinions has given the opinions that Ministry of Finance has also researched the promulgation of Pricing Transfer Law to make a basis for promulgating the regulations of control and dealing with the effect of transfer pricing operation to the economy

- **Thirdly, building the data base on price for transactions**

By means of making a survey on the functional authorities such as tax office, customs the problem on controlling the main transfer pricing lack of database on the price of transacting goods. Database on providing the information on market price can be compared, creating a condition for evaluating the associated transactions as enumerated. As evaluating an internal profession of purchase and sale, the authorities have difficulty in finding the reference price to compare. The problem is more complicated in comparison with the types of goods like auto that transfer pricing is dependent on the option of customer, attached accessories to the automobile caused the definition of transfer pricing is very complicated if there is no enough database

For a database on price is accurate, the State has to upgrade frequently, continuously

and supplemented from the different sources of trustworthy information. At present, there are a lot of pricing database systems such as Onesource, Osiris, Oriana... used broadly in countries supported selecting the compared sample to become much more simply (OECD, 2017). In order to meet the requirement of integration as well as saving costs, authorities in Vietnam has early specific instruction to these databases to be recognized to use in Vietnam or not; and if in case of conformity, so it is necessary to have a mechanism of purchasing data of big auditing companies

- **And so on, building more the method of negotiation prior to fix a price**

In case that is difficult to define on price according to the traditional method, some specialists have petition on applying with the previous method of negotiation on defining the price (APA). APA is a negotiation in text carried out before this associated transaction happened. This is a voluntary method, appreciating a cooperation between the parties and APA is able to support for the company to be active in making a business plan, using the source efficiently. However, the implementation of APA required a lot of database source for appraising. Method of pre-negotiation on defining the price has been applied conformably in developing countries

Preventing and anti-transfer pricing has always been a complicated issue for almost countries including Vietnam. If the company has taken advantage of transfer professions to reduce the tax amount payable and synonym with the State Bank has a loss of revenue and create an unequal competitive environment between the companies. The State has to build a legal system, build a data base as well as increasing the coordination between the management authorities on the transfer pricing operation, to minimize the possibility that Company will abuse the tax preferential polices. For the cases difficult to define on the transfer price, the State authority is able to apply according to the method of pre-negotiation on defining the price. Researchers continue to look for signs of price transfer, as well as price transfer for domestic companies.

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**Impact of Debt to Equity Ratio on Profitability of Construction Companies Listed
on the Vietnam's Stock Market**

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Abstract

This study delved into the impact of debt to equity ratio on return on assets (ROA) and return on equity (ROE). The research data was collected from the financial statements of 73 construction companies listed on the Vietnam's stock market during the period from 2008 to 2015. The research results showed that in listed construction companies, the debt to equity ratio negatively affects return on assets and return on equity. In addition, firm size, revenue growth rate and asset turnover ratio have negative impacts on ROA and ROE, while firm age has positive impact on both ROA and ROE.

Keywords: *Debt to equity ratio, Listed construction companies, Profitability.*

JED codeL: *M41*

1. Introduction

The construction sector plays a significant role in the overall development of the country. As the economy grows, the increase in enterprises' profits and strong state budget are favorable conditions for the development of the construction industry due to the improvement of infrastructure for people and businesses such as construction of roads, bridges, buildings, housing. However, since 2008, the construction industry has been suffering from the global economic crises and disadvantageous economic situations in Vietnam. During the period from 2011 to 2013, the currency market in Vietnam fluctuated considerably and lending interest rate was over 20% per year, which resulted in many difficulties for manufacturing sector including

the construction industry. In addition, during this period the real estate market was frozen, creating more problems for construction companies in Vietnam.

Similar to construction companies in general, listed companies in the construction industry have had low business efficiency and this figure has a tendency to decrease from 2008 until now, especially, since 2012. According to the calculations of the authors, return on assets (ROA) ratios during the period from 2012 to 2015 were approximately from 1% to 3%. In fact, the profitability of construction industry was much lower than that of other industries and lower than interest rates on banks' deposits which made it very difficult for the construction industry to expand production and attract investment.

A specific characteristic of the construction industry is the need of large capitals to execute the work, and payment time is affected by many factors such as sources of funds of investors, payment profiles, progress of projects, disasters, weather. Therefore, capital structure of this sector has specified characteristics. Compared to other industries in the manufacturing sector, debt to equity ratio of construction companies are usually the highest, which is 0.7 times higher than that of other manufacturing companies.

The driving research question was: Is there any relationship between debt to equity ratio and profitability of listed construction companies? Although many theoretical and empirical studies have been conducted in the world and in Vietnam, the results were not consistent.

For these reasons, the purpose of the study was to investigate the impact of debt to equity ratio on profitability of construction companies listed on the stock market of Vietnam.

2. Literature review

There have been many theoretical and empirical studies on the impact of debt to equity ratio on the profitability of companies such as return on assets, return on equity, and return on revenue. However, depending on the specific characteristics of each country and each industry, the results were different.

The modern theory of capital structure was first introduced by Modigliani and Miller (1958) (which is also called M&M theory). After that many theories were developed including two major theories which are Trade-off theory, Pecking Order theory.

There have been many empirical studies on the impact of debt to equity ratio on ROA and ROE, but the direction of the relationship is not consistent among studies. For example, the debt to equity ratio has a negative impact on ROA in studies of Ebaid (2009); Khan (2012); Zeitun and Tian (2007); Sheikh and Wang (2013); or the study on construction, consumption, real estate sector of Salim and Yadaw (2012); Berkkalne (2014), but in the study of Javed et al. (2014), there is no association between debt to ratio and ROA.

Regarding ROE, debt to equity ratio positively affects ROE in a number of studies, such as Abor (2005); Gill et al. (2011); Cultivation of Salim and Yadaw (2012). On the contrary, in other studies such as Shubita and Alsawalhah (2012); or the study on real estate of Salim and Yadaw (2012); Muritala (2012); the study on listed companies of Berzkalne (2014), the debt to equity ratio negatively affects ROE. Some studies found no relationship

between debt to equity ratio and ROE such as studies of Ebaid (2009); Khan (2012); the study on the remaining sectors of Salim and Yadaw (2012); Javed et al. (2014).

Apart from investigating the impact of debt to equity ratio on profitability, the authors explored other elements of the firms such as Asset Turnover Ratio (TURN) (Muritala, 2012; Onaolapo and Kajola, 2010; Javed et al., 2014, ..); Firm Size – SIZE (Ebaid, 2009; Sheikh and Wang, 2013; Zeitun and Tian, 2007; Abor, 2005; Khan, 2012; Onaolapo and Kajola, 2010; Dawar, 2014; Salim và Yadaw, 2012); Revenue Growth Rate - GROW (Gill et al., 2011; Abor, 2005; Sheikh and Wang, 2013; Zeitun and Tian, 2007; Dawar, 2014); Firm Age- AGE (Onaolapo and Kajola, 2010; Muritala, 2012; Dawar, 2014); Fixed Assets to Total Assets Ratio - TANG (Zeitun and Tian, 2007; Muritala, 2012; Sheikh and Wang, 2013; Onaolapo and Kajola, 2010; Puoraghajan et al., 2012). However, the extent of impact and direction of relationship of these factors on the profitability of companies in these studies were not consistent.

3. Methodology

3.1. Research data

For the purpose of this study, data was collected from 584 financial statements of 73 construction companies listed on the Vietnam’s stock market during the period from 2008 to 2015, in which there were 61 companies listed on Hanoi Stock Exchange, the remaining 12 companies were listed on Ho Chi Minh City Stock Exchange.

3.2. Research model and hypotheses

Research model

In this study, the authors applied research model previously used and tested by Onaolapo and Kajola (2010)

$$Y_{i,t} = \beta_0 + \beta_1 TD_{i,t} + \beta_2 TURN_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 AGE_{i,t} + \beta_5 TANG_{i,t} + \beta_6 GROW_{i,t} + \varepsilon_{i,t}$$

Table 1: Description of variables in the model

Variables	Formula	Sources
Y	ROA Profit before taxes/ Average total assets	Sheikh and Wang, 2013; Berzkalne, 2014; Zeitun and Tian, 2007; Onaolapo and Kajola, 2010.
	ROE Profit before taxes/ Average shareholder’s equity	(Shubita and Alsawalhah, 2012); (Berzkalne, 2014); (Dawar, 2014); (Zeitun and Tian, 2007); Onaolapo and Kajola, 2010.
TD	Total liabilities/ Shareholder’s equity	Gill et al., 2011; Abor, 2005; Sheikh and Wang, 2013; Ebaid, 2009; Berzkalne, 2014; Onaolapo and Kajola, 2010.
SIZE	Ln(assets).	Ebaid, 2009; Sheikh and Wang, 2013; Zeitun and Tian, 2007; Abor, 2005; Khan, 2012; Onaolapo and Kajola, 2010; Dawar, 2014; Salim and Yadaw, 2012.

Variables	Formula	Sources
GROW	$\frac{DTT_i - DTT_{(i-1)}}{DTT_{(i-1)}}$	Gill et al., 2011; Abor, 2005; Sheikh and Wang, 2013; Onaolapo and Kajola, 2010; Dawar, 2014; Zeitun and Titan, 2007.
TURN	Net sales/ Average total assets	Javed et al., 2014; Onaolapo and Kajola, 2010; Muritala, 2012.
AGE	The number of years since listing to time of the study.	Onaolapo and Kajola, 2010; Muritala, 2012; Pouraghajan et al., 2012; Dawar, 2014.
TANG	Fixed assets/ Total assets	(Sheikh and Wang, 2013); (Zeitun and Tian, 2007); Dawar (2014); Onaolapo and Kajola, 2010.

Source: Compilation of the authors

Hypotheses

Debt to equity ratio (TD)

According to Pecking Order theory, enterprise executives always have better information about corporate value compared to outside investors, so they prefer to use internal sources of capital rather than loans. However, in difficult periods, the internal capital of enterprises may be limited which forces enterprises to borrow, leading to lower business efficiency. Thus, according to the Pecking Order theory, the higher the amount of loans, the lower the profitability of companies, so the first hypothesis is proposed as follows:

H₁: Debt to equity ratio has a negative impact on profitability of construction companies listed on the Vietnam's stock market.

Fixed assets to total assets ratio (TANG)

In construction companies, fixed assets mainly include office buildings, construction machinery and vehicles. These assets play a critical role in the process of creating products in construction companies. When enterprises invest in all kinds of machinery, they will be proactive in the process of construction, and able to complete the work in time or before the rate of progress. Moreover, fixed assets can become collateral assets when enterprises need to borrow money from banks due to a lack of capital. According to Akintoye (2008), if enterprises have a large amount of fixed assets, they will get preferential interest rates when borrowing money from the banks, thereby increasing business efficiency. Thus the second hypothesis is proposed as follows:

H₂: Fixed assets to total asset ratio (TANG) has a positive impact on profitability in construction companies listed on the Vietnam's stock market.

Firm size (SIZE)

The size of an enterprise has a substantial impact on the market share and prestige of that enterprise, thus affecting its profitability (Shepherd, 1971). In addition, the larger the size of an enterprise, the greater the capacity of resources as well as the opportunities to cooperate with another firms and the easier the diversification of sectors (Frank and Goyal,

2003). According to the Trade-off theory, large enterprises are received more preferential treatments when borrowing money, besides, when borrowing large amounts of loans, they will be entitled to reduce corporate income tax as interest expenses are tax deductibles. In order for a construction enterprise to bid and win large projects, one of the most important criteria is that the size of the enterprise is sufficiently large which is reflected in the total assets. Therefore, the third hypothesis is proposed as follows:

H₃: Firm size (SIZE) has a positive impact on profitability of construction companies listed on the Vietnam's stock market.

Revenue growth rate (GROW)

Revenue growth rate is measured by the continuous growth of net revenue. An increase in net revenue will result in increases in growth rate and profits of companies (Zeitun and Titan, 2007). Whereby, revenue growth rate is a significant indicator reflecting the development of the business. With construction companies, one of the most important indicators when bidding is the net revenue of recent years. If the growth rate of revenue decreases, it means that enterprises are facing difficulties, their business efficiency and their prestige will be adversely affected. Hence, the fourth hypothesis is proposed as follows:

H₄: Revenue growth rate (GROW) has a positive impact on profitability of construction companies listed on the Vietnam's stock market.

Asset turnover ratio (TURN)

Asset turnover ratio is an indicator of the efficiency with which a company is deploying its assets to produce the revenue. The higher the value of asset turnover ratio, the more effective the use of assets, thus it will contribute to the improvement of business efficiency in an enterprise. Thus, enterprises can only achieve high business efficiency if they use resources including assets effectively. Thus, the fifth hypothesis is proposed as follows:

H₅: Asset turnover ratio (TURN) has a positive impact on profitability of construction companies listed on the Vietnam's stock market.

Firm age (AGE)

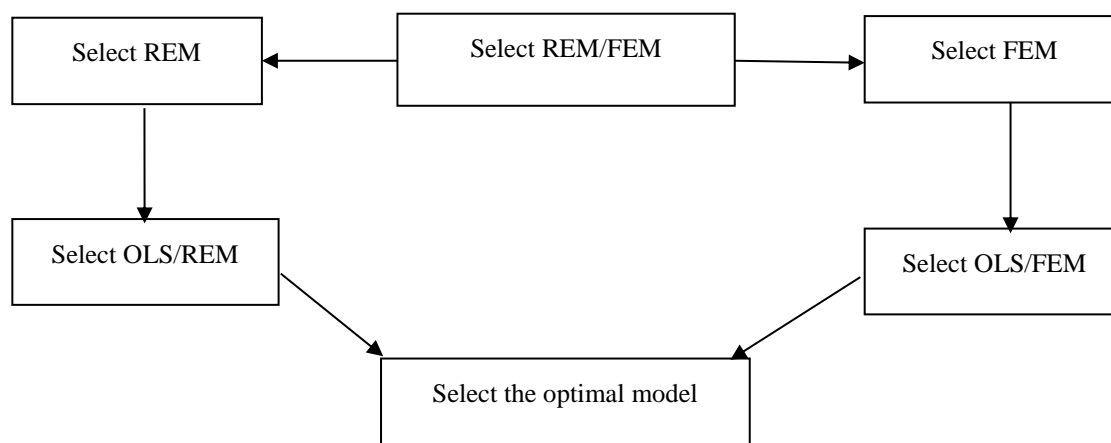
Firm age is defined as the number of years since listing until the time of the study. Stinchcombe (1965) provided that companies with long operating histories are more experienced in business operations, thus they can avoid certain risks in the course of business operations, and get preferential treatments in the process of borrowing. Therefore, the firm age will positively influence business efficiency and the last hypothesis is proposed as follows:

H₆: Firm age (AGE) has a positive impact on profitability of construction companies listed on the Vietnam's stock market.

3.3. Selection of optimal model

Previous studies applied common regression models such as Ordinary Least Square (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). In this study the author will analyze and select the optimal model among three models through the following figure:

Figure 1: The process of selecting the optimal regression model



Description of the figure:

Step 1: Select either FEM or REM, Hausman test was used

Step 2: Select between the better model in step 1 and OLS to find the optimal model.

4. Research results

4.1. Selection of appropriate model

According to diagram 1, firstly, the better model was selected between two models FEM and REM by conducting Hausman test. The test results are shown in table 1.

Table 2: Results of Hausman test between two models REM and FEM

Dependent variable	Chi2(x) statistic	Pro>Chi2	Select model (FEM, REM)
ROA	36.15	0.0000	FEM
ROE	64.43	0.0000	FEM

Source: Compilation of the authors from Stata14

The result of Hausman test shows that for both equations with dependent variables ROA, ROE, the better model is FEM.

After FEM is selected, the optimal model will be selected between OLS and FEM by conducting a test of FEM. Table 2 represents the selection of the optimal model.

Table 3: The test result between OLS and FEM

Dependent variable	F (72, 505); F(72, 500)	Prob>F =0,0000	Model selection (OLS, FEM)	Note
ROA	4.02	0.0000	FEM	Test results of FEM
ROE	4.14	0.0000	FEM	

Source: Compilation of the authors from Stata14

Therefore, for all equations, FEM is the best regression model compared to two models OLS and REM.

4.2. Research results and discussion

The following table represents description of variables in the model

Table 4: Descriptive statistics of variables in the model

Variable	Obs	Mean	Std. Dev	Min	Max
ROA	584	0.04194	0.06025	-.277009	0.32200
ROE	584	0.11868	0.20963	-1.99319	0.61083
TD	584	0.65222	0.18778	0.04965	1.18881
TANG	584	0.13891	0.11532	0	0.83710
SIZE	584	12.4399	1.42823	7.16858	16.5277
GROW	584	0.20675	0.54087	-0.6026	7.31180
TURN	584	0.71409	0.40588	0.03572	2.91622
AGE	584	8.04794	3.17436	1	15

Source: Compilation of authors from Stata14

The table of descriptive statistics shows that the sample has 584 observations and characteristics of variables are explained as follows:

- Two variables reflecting profitability are ROA and ROE with large differences in values of mean, minimum and maximum. The minimum values of both ROA and ROE are negative while the maximum values are very high. This indicates that business efficiency of construction companies during the period from 2008 to 2015 vary considerably.

-The indicator of capital structure is TD with the minimum value of 0.0496, and maximum value of 1.188, which indicates that there exists at least one company with negative shareholder's equity due to too low business efficiency resulting in negative accumulated profits and absolute value of accumulated profits is greater than the shareholder's equity.

- The indicator reflecting asset structure is TANG with mean of 0.11391 (times). Thus, the amount of fixed assets is not high relative to total assets.

- Variable GROW has values of mean, minimum, maximum are 0.20675; -0.6026; 7.31180 respectively which reflects high growth rate of average revenues of companies (20%), however, revenue growth rates of these companies vary considerably.

- Variable TURN has mean of 0.71409 indicating low business efficiency of construction companies. This can be explained by the fact that average revenue of construction companies is low compared to the amount of total assets.

- Firm age (AGE) has mean of 8.04794 with minimum value of 1 year and maximum value of 15 years. Therefore, the company with the lowest age was listed in 2007 and company with the highest age was listed in 2000, while most companies were listed in 2008 or 2009.

Table 5: Result of FEM with dependent variable ROA

R-sq:		Obs per group:				
within	= 0.3381	min	=	8		
between	= 0.1976	avg	=	8.0		
overall	= 0.2511	max	=	8		
corr(u_i, Xb)	= -0.3437	F(6,505)	=	42.99		
		Prob > F	=	0.0000		
ROA	Coef.	Std. Err.	t	P > t	[95% cof.	Interval]
TD	-.1079949	.0217426	-4.97	0.000	-.1507119	-.0652779
TANG	-.0377588	.0234896	-1.61	0.109	-.0839082	.0083906
SIZE	.0153309	.0043139	3.55	0.000	.0068555	.0238063
GROW	.0217707	.0035967	6.05	0.000	.0147043	.0288371
TURN	.0457963	.0091796	4.99	0.000	.0277615	.0638312
AGE	-.0063523	.0009311	-6.82	0.000	-.0081817	-.0045229
_CONS	-.0549092	.0483078	-1.14	0.256	-.1498182	.0399998

Sigma_u .03837537

Sigma_e .04070732

rho .47053813 (fraction of variance due to u_i)

F test that all u_i=0: F(72, 505) = 4.02

Prob > F = 0.0000

Source: Calculation of the authors from Stata 14

It can be seen from the table that TD has a negative impact on ROA with at 1% level of significance. Therefore, for the listed construction companies, the higher the amount of debts, the lower the value of ROA. This finding is consistent with the research hypothesis and result of many studies of Ebaid (2009); Khan (2012); Zeitun and Tian (2007); Sheikh and Wang (2013); Onaolapo (2010); Doan Ngoc Phuc (2014); the study of Salim and Yadaw (2012) on the consumer, real estate, and industrial sectors; Muritala (2012); the study of Chiang et al. (2002) on construction and real estate industries in Hong Kong.

The table also shows that TANG has a negative impact on ROA but it is not statistically significant. The reason is that in construction industry, the amount of fixed assets is not large compared to other manufacturing industries, thereby, it has little impact on business efficiency.

GROW has a positive impact on ROA at 1% level of significance. This result is consistent with the research hypothesis and the research results of Sheikh and Wang (2013), but contradicts to the results of Zeitun and Tian (2007), Onaolapo and Kajola (2010); Javed et al. (2014); Dawar (2014). This shows that in construction companies, growth of revenue means an increase in ROA.

TURN has a positive relationship with ROA at 1% level of significance. This finding is consistent with the research hypothesis and research result of Onaolapo và Kajola (2010).

AGE is negatively associated with ROA and statistically significant at 1%. This contradicts to the research hypothesis and research results of Onaolapo and Kajola (2010). It can be explained by the fact that the period from 2008 to 2015 is the difficult period of the global economy in general and Vietnam in particular, so companies with long operating history often had complicated organizational structure which led to large management costs. Since the growth rate of revenue is no greater than the growth rate of costs, the higher the firm age, the lower the value of ROA in difficult times.

Table 6. Result of FEM with dependent variable ROE

R-sq:		Obs per group:				
within	= 0.3717	min	=	8		
between	= 0.1396	avg	=	8.0		
overall	= 0.1917	max	=	8		
corr(u _i , Xb)	= -0.6767	F(6,505)	=	49.79		
		Prob > F	=	0.0000		
ROA	Coef.	Std. Err.	T	P > t	[95% cof.	Interval]
TD	-.2819796	.0801238	-3.52	0.000	-.4393965	-.1245626
TANG	-.0691295	.0865618	-0.80	0.425	-.2391952	.1009361
SIZE	.1171965	.0158972	7.37	0.000	.0859636	.1484293
GROW	.063147	.0132543	4.76	0.000	.0371065	.0891874
TURN	.0774959	.0338278	2.29	0.022	.0110354	.1439564
AGE	-.0330377	.0034313	-9.63	0.000	-.0397792	-.0262963
_CONS	-.9260406	.1780196	-5.20	0.000	-1.275791	-.5762904

Sigma_u .17299372

Sigma_e .15001102

rho .57079441 (fraction of variance due to u_i)

F test that all u_i=0: F(72, 505) = 4.14

Prob > F = 0.0000

Source: calculation of the authors from Stata 14

Result of regression analysis shows that TD has a negative impact on ROE at 1% level of significance. In other words, the higher the amount of debts of listed construction companies, the lower the value of ROE. This result is consistent with findings of Onaolapo và Kajola (2010); Shubita and Alsawalhah (2012); Doan Ngoc Phuc (2014); the study of Berzkalne (2014) on listed companies; Dawar (2014). However, it contradicts to research results of Abor (2005); Gill et al. (2011).

Research result on the impact of debt indicator to ROE contradicts to findings of Abor (2005); Gill et al. (2011); Ebaid (2009). This can be explained by the fact that mean values of ROE of these studies were relatively high (36.94%; 26% and 21.37% respectively). While mean value of ROE in study of Shubita and Alsawalhah (2012) was 8%, mean value of ROE of listed construction companies in this study was 11.86%. Therefore, when the economy grows, the higher the value of ROE, the larger the amount of debts and vice versa. This is consistent with the M&M theory.

SIZE has a positive impact on ROE at 1% level of significance. This finding is consistent with the research hypothesis and research results of Abor (2005); Gill et al. (2011); Sheikh and Wang (2013); Muritala (2012).

GROW has a positive impact on ROE at 1% level of significance. This finding is consistent with the research hypothesis and research results of Sheikh and Wang (2013), but it contradicts to findings of Zeitun and Tian (2007); Onaolapo and Kajola (2010); Javed et al. (2014); Dawar (2014).

TURN has a positive impact on ROE at 1% level of significance in both equations. This confirms the research hypothesis and research results of Muritala (2012); Onaolapo and Kajola (2010).

Firm age is negatively associated with ROE at 1% level of significance in both equations. As discussion above, in the period of financial crisis, the larger the organizational structure, the higher the non-manufacturing costs which can reduce ROE. Although firm age has a negative impact on ROE, the extent is not considerable. For example, when firm age increases by 1 year, ROE decreases by 0.033 times, other factors held constant.

5. Solutions

The research result proved that the higher the debt to equity ratio, the lower the values of ROA and ROE. Therefore, enterprises should pay attention to the capital structure in order to reduce the debt to equity ratio. In order to do this, potential solutions are proposed as follows. Firstly, companies should regularly analyze liabilities to make a proper repayment plan. Secondly, enterprises should restrict amount of loans of credit institutions in the period of economic crises. When the business efficiency increases, the increase in debt financing is an effective financial leverage to boost business efficiency. However, during difficult periods, large amount of loans will negatively affect the business performance of enterprises. In addition to reducing debts, increasing shareholder's equity is the right policy of

enterprises as the higher the amount of owner's equity, the greater the degree of independence, autonomy in the business.

TURN has positive and significant impact on ROA and ROE, therefore enterprises need to improve efficiency of asset utilization. As asset turnover ratio is calculated by dividing net sales by average total assets, in order to improve the efficiency of asset utilization, enterprises must identify all measures to increase sales and invest in assets appropriately. Enterprises need to make sure the growth rate of revenue is greater than the growth rate of assets. Therefore, when a company intends to invest in certain assets, it should consider the expected revenue. It is critical not to invest in unnecessary equipment. The increase in revenue does not only affect the efficiency of asset utilization but also directly affects the profitability of assets and equity. As a result, enterprises should expand relationships, find more projects and establish prestige regarding quality and progress to strengthen trust of investors, thereby gradually expanding the market, increasing revenue for the business.

SIZE has positive and significant impact on ROA and ROE. This shows that the larger the size of the company, the higher the ROE and ROA. According to the formula above, SIZE is calculated by $\ln(\text{total assets})$, while total assets are equal to total capital. Therefore, to increase the value of SIZE, enterprises need to enhance capital mobilization from both shareholders' equity and debts. However, as the above analysis, TD has a negative impact on ROA and ROE, so companies need to balance capital mobilized from debts and equity so that the size of enterprises increase while TD is controlled and does not increase.

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Ownership Structure and Earnings Management in Non-Inancial Vietnamese Companies Listed in Hochiminh Stock Exchange-Vietnam

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Abstract

The diversification of interests and influencing powers of different groups of shareholders relating to ownership structure could have different impacts on a company's activities. Earnings management (EM) could also be affected by those ownership's components. Collecting a sample of 958 observations in period 2010 -2014 from Hochiminh Stock Exchange, this study focuses on the relations between different ownership factors and EM. The results showed that Foreign ownership, Managerial ownership are factors curbing EM activities while State ownership, Major ownership did not show any relationship with EM. Some other control variables such as Duality, Debt ratio and Financial Performance positively effect on EM. In conclusion, the results will have contributions for referencing while Vietnam is on the way restructuring ownership structure, improving its stock market.

Keywords: *Earnings management, Jones model (1991), Ownership structure, Vietnam*

JEL Classification: M41, G32

1. Introduction

Financial statements are important tools for transferring financial data between businesses and information users. It also supports those entities in making – decision processes while investing, operating businesses or solving managerial issues. In reporting process, managers/accountants are allowed to flexibly choose accounting tools and accounting methods but within limits, frameworks of regulations, standards. However, in

some cases, managers can take advantages of this point to perform self-interest behaviors, earnings management behaviors. In fact, the existence of a series of financial scandals such as f Enron, Worldcom, Xerox, etc. has led information users to question the credibility of the financial information disclosed in the stock markets and people have reasons to suspect about the reliability of financial statements. Therefore, the topic of earnings management and how to detect it are deeply and widely concerned by researchers, lawmakers, investors

The stock market in Vietnam is a newly established market, the ownership structure is a factor with many differences (centralized ownership structure with state ownership), different from the ownership structure in many other countries. In this paper, ownership structure and the diversity of ownership structure in relation to earnings management were selected as the research topic. Therefore, the paper with title "Ownership structure and earnings management in non-financial Vietnamese companies listed in Ho Chi Minh Stock Exchange – Vietnam " will be meaningful both theoretically and practically. Based on the set of data with quantitative methods, the paper reviewed and found empirical evidences on the relationship between ownership structure and earnings management in non-financial companies listed on the Ho Chi Minh Stock Exchange.

2. Literature review

The diversity of shareholder groups in term of ownership structures in a business will have a certain impact on performance of a company (these groups have different interests and benefits, relations with governments, banks and partners at different levels). This diversity can also affect profit-driven behaviors and there exists a series of studies related to ownership structure and earnings management at different scales. This study focuses on some most common variables such as State ownership, Foreign Ownership, Managerial ownership and Ownership by Majority Shareholders (Alves, 2012; Charfeddine et al., 2013; Liu & Lu, 2007; Guo et al., 2015)

2.1. State ownership

In Vietnamese stock market, state ownership dominates and it can be considered as one typical characteristic of ownership structure and had special privileges compared to others. So that, it might be one reason for earnings management appearing more. Fan & Associates (2007) studied in China and provided empirical evidences that state-owned enterprises (SOEs) are often weak and non-professional in management. Executives in state-owned enterprises are usually state-appointed, they can take advantages of their political connections and their ability in accessing the market, engaging in earnings management to achieve the expectations that the state, superiors' goals or for their personal

Interest (Aharony et al., 2000).

Cheng, Wang & Wei (2014) did their researches in Chinese enterprises and found that SOEs tend to exaggerate profits during IPOs. Guo & Ma (2015); Zhang, Uchida & Bu (2011) show the positive correlation between state ownership and the magnitude of adjustable value (earnings management). Vietnam and China have many similarities in the

stock markets' characteristics because their starting points were from the centrally planned economies and they share many common attributes in the corporate law. Therefore, studies in China will be one of the important reference for Vietnam.

2.2. Foreign ownership

Mobilizing capital from foreign investors is an attractive channel for listed companies in particular and for stock market in general. The study of Aggarwal, Klapper & Wysocki (2003) showed that foreign investors often invest more capital into companies with good accounting information quality.

In fact, this variable has been verified by many studies worldwide. Guo et al. (2015) concluded that companies with higher foreign ownership rate are less likely to manage earnings. Ali & associates (2008) studied in Malaysia and did not find any evidence of the relationship between foreign ownership and earnings management. Beuselinck, Blanco & Lara (2013) used the Jones model (1991) and found a positive relationship between foreign ownership and the quality of accounting information. An (2015) also uses three accrual models and found that the higher the level of foreign ownership ratio, the more reliable the accounting information is. The authors concluded about the positive role of foreign ownership in reducing the earnings management and thus enhancing the quality of financial reporting.

Vietnamese stock market has witnessed many changes in term of attracting foreign investment. At its early stage, the law of Vietnam restricted the ownership by foreign investors, investors were not allowed to own more than 20% of authorized capital. The country wanted to protect the control of domestic shareholders. However, up to now, the ceiling on foreign ownership has been loosened, the unrestricted foreign ownership has led to the influx of foreign investment into the Vietnamese stock market. Foreign ownership plays a key role in corporate governance, so the assessment of the relationship between foreign ownership and profitability in Vietnam is necessary.

2.3. Managerial ownership

Business executives may hold shares of companies that they manage. Based on the agency theory, Berle & Means (1932) and Jensen & Meckling (1976) are pioneers in studying the foundations of the relationship between ownership and management. If managers do not hold or they are only minor shareholders, they are likely to act or make decisions without taking care of shareholders' benefits. Jensen & Meckling (1976) argued that as the amount of equity held by managers increases, they will be more responsible for using capital both for their owns and shareholders. However, when the ownership ratio increases to some degree, the manager will face entrenchment phenomenon (Morck et al., 1988). Fama & Jensen (1983) also argues that when managers hold a large proportion of stocks, they are more influential and have voting power, and they can be more self-interested.

Based on the agency theory (Jensen & Meckling, 1976), many studies had results about a negative relationship between managerial ownership and earnings management

(Warfield et al., 1995; Alves, 2012). While Johari & Associates (2008), Cheng & Warfield (2005), Chargeddine, Riahi & Omri (2013) provided evidences of positive relationship. In addition, some authors (Morck et al., 1988) divided the managerial ownership into small groups and assessed the impact of each group on the earnings management, Johari et al. (2008) after testing the whole sample (positive), they continued to divide into three proportions of managerial ownership proportion 0% -25%, 25% -50% and > 50% and found only group of 25% - 50% represented a positive relationship while other groups did not have any relationship with earnings management.

2.4. Major ownership

Vietnamese law stipulates that joint stock companies must disclose major shareholders holding over 5%. According to the survey by Nguyen Thu Hien & Tran Duy Thanh (2011), the shareholding structure of the listed companies in Vietnam are centralized structure. Thus, in this paper, the shareholding by the majority shareholder will be a variable representing the ownership structure factor.

Fakhfakh & Nasfi (2012) studied ownership structure in the context of acquisitions and mergers in France, the results showed that the proportion of majority shareholders was positively correlated with earnings management. Alves (2012) showed the opposite relationship between major shareholder ownership and earnings management. Meanwhile, Rahman & Ali (2006) investigated the Malaysian stock market and found no relationship with earnings management. Fathi (2013) tested in France and the results also gave no evidence of the relationship between ownership by majority shareholders and earnings management.

3. Research framework and hypothesis

3.1. Proposed hypothesis

Based on literature review and the research results about State ownership from some countries with Vietnam-like characteristics in terms of law and market such as China (Guo & Ma, 2015; Zhang, Uchida, & Bu, 2011; Cheng, Wang & Wei, 2014), the hypothesis is as the following:

H1: The state ownership in Vietnamese non-financial listed companies is positively correlated with earnings management

Based on the perception of foreign ownership, together with the results from the studies by Guo & Partners (2015), Beuselinck, Blanco & Lara (2013), the more the foreign ownership increases, the better the quality of information will be and therefore, the less likely it is for earnings management. The authors proposed the H2 hypothesis:

H2: Foreign ownership in Vietnamese non-financial listed companies is negatively correlated with earnings management

Beneish (1999) argued that when capital is concentrated in the hands of some major shareholders, they have the potential to influence their investment, and vice versa for small

shareholders. Alves (2012), Fathi (2013) concluded that there is an adverse relationship between the percentage of majority (centralized) shareholders with earnings management. Hypothesis H3 is given as follows:

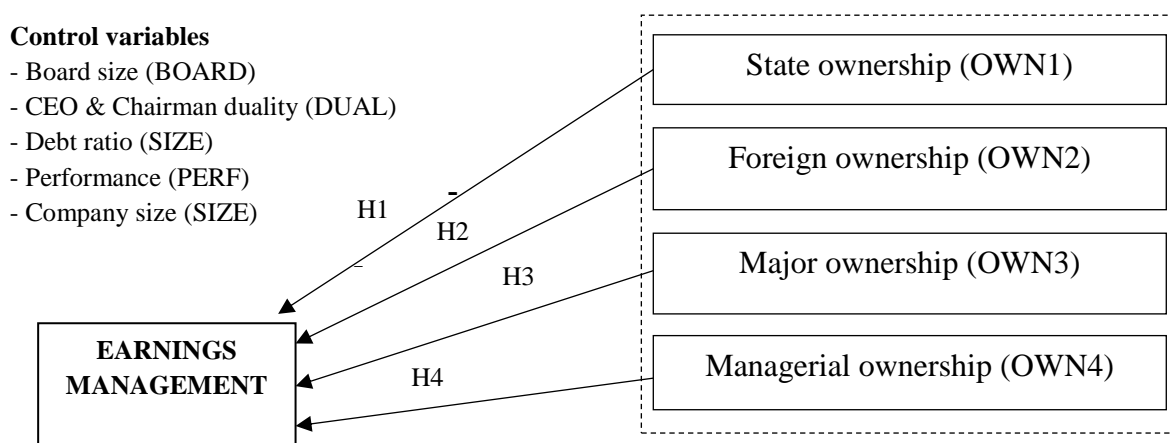
H3: The majority shareholder (centralized) in Vietnamese non-financial listed companies is negatively correlated with earnings management

Based on the agency theory (Berle & Means, 1932; Jensen & Meckling, 1976), many studies have resulted in the opposite relationship between ownership and earnings management (Warfield & Associates, 1995; Alves, 2012). A harmonization of benefits for managers and shareholders will be obtained when ownership ratios are high enough. Therefore, it will be the basis for proposing H4:

H4: The managerial ownership shareholder (centralized) in Vietnamese non-financial listed companies is negatively correlated with earnings management

3.2. Research framework

Figure 1. Research model and proposed hypothesis



(Source: synthesized by author)

Based on the research overview and the proposed hypotheses, the research model was constructed as shown in Figure 1. In addition to the proprietary variables, a number of control variables were used in the study, DUAL, SIZE, PERF and SIZE. These variables have also been tested in many studies worldwide (Charfeddine et al., 2013; Fathi, 2013; Rahman & Ali, 2006).

3.3. Research methodology

3.3.1. Modeling of regressions

Data collected is panel data. Therefore, the study conducted the regression model as follows:

$$DA = \alpha_0 + \alpha_1 OWN1_{it} + \alpha_2 OWN2_{it} + \alpha_3 OWN3_{it} + \alpha_4 OWN4_{it} + \alpha_5 BOARD_{it}$$

$$+ \alpha_6 \text{ DUAL}_{it} + \alpha_7 \text{ DEBT}_{it} + \alpha_8 \text{ PERF}_{it} + \alpha_9 \text{ SIZE}_{it} + \omega_{it}$$

Where : $\omega_{it} = \epsilon_{it} + v_i$

ϵ_{it} : error term, varies across individuals i and time t

v_i : representing the effects of all the time - invariant variables that have not been included in the model of every individual i

Table 1: Definition and variable measurement

CODE	VARIABLES	MEASUREMENT
DA	<i>Discretionary accruals</i>	(*) the Jones model (1991)
DEBT	<i>Debt ratio</i>	Debt/ Equity
PERF	<i>Financial performance</i>	ROE = Profit/Average of Equity
SIZE	<i>Company size</i>	Log of total assets
BOARD	<i>Board size</i>	The number of members
DUAL	<i>CEO and chairman duality (Duality)</i>	1 if CEO is chairman of the board and 0 otherwise
OWN1	State ownership	The percentage of State ownership
OWN2	Foreign ownership	The percentage of Foreign ownership
OWN3	Major ownership	The percentage of Major ownership (more than 5%)
OWN4	Managerial ownership	The percentage of Managerial Ownership

(Source: Synthesized by author)

(*) Jones model (1991)

In this research, the original Jones (1991) model has been selected to measure DA value because this is the important original model, a firm basis for the appearance of many other popular models (modified models from Jones). This selection is necessary and should be the premise for the coming studies application for both the original Jones (1991) model and other modified ones.

The Jones (1991) model calculate total accruals in the event year t as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \times \frac{1}{A_{it-1}} + \alpha_2 \times \frac{\Delta REV_{it}}{A_{it-1}} + \alpha_3 \times \frac{PPE_{it}}{A_{it-1}} + \epsilon_{it}$$

Where:

TA_{it} : total accruals in year t , company i

ΔREV_{it} : Sales in year t – Sales in year $t-1$, company i

PPE_{it} : Cost of PPE at the end of year t , company i

A_{it-1} : Total assets at the end of year $t-1$ in company i

$\alpha_1, \alpha_2, \alpha_3$: estimate parameters

ϵ_{it} : errors in year t of company i

Then, NDA and DA are calculated:

$$NDA_{it} = a_1 \times \frac{1}{A_{it-1}} + a_2 \times \frac{\Delta REV_{it}}{A_{it-1}} + a_3 \times \frac{PPE_{it}}{A_{it-1}}$$

$$DA_{it} = TA_{it}/A_{it-1} - NDA_{it}$$

NDA_{it} : Non-discretionary in company I, year t

a_1, a_2, a_3 : estimate parameters (Based on $\alpha_1, \alpha_2, \alpha_3$).

Parameters a_1, a_2, a_3 are estimated by OLS method

3.3.2. Sampling and data collection

Initial sample contained 1,122 observations (non-financial companies listed on the Ho Chi Minh City Exchange for the period 2010 - 2014). In step 1, some observations were eliminated due to the lack information, while 1,015 observations remained (regression step 1). Then for step 2, the insufficient data was also excluded so that only 958 observations were tested in the regression 2

4. Research results

4.1. Descriptive statistics

Table 2 shows the mean, median, maximum, minimum and standard deviations of the study variables

Table 2: Descriptive statistics

Variables	Observations	Mean	Median	Max	Mean	Standard Deviations
DA	958	0.3545	0.3395	-2.2601	2.7609	0.3741
OWN1	958	22.0721	9.575	0	96.72	25.6173
OWN2	958	8.2754	1.7667	0	88.69	12.9397
OWN3	958	34.1143	36.965	0	98.11	28.0436
OWN4	958	11.9263	3.6730	0	73.0478	15.4979
BOARD	958	5.7046	5	4	11	1.2118
DUAL	958	0.3706	0	0	1	0.4832
DEBT	958	1.7452	1.3727	0.3955	18.0832	1.5018
PERF	958	0.1233	0.1195	-1.2922	0.7874	0.1618
SIZE	958	12.0877	12.0367	10.8789	13.9566	0.4990

(Source: Analyzed by author)

Table 2 described the mean, min, max, median and standard deviations of tested variables. Those are characteristics of the sample in this study. For DA, discretionary accrual, the value of DA was estimated by using the Jones model (1991), we can see in Table 2. The mean value is 0.3545 with the standard deviation is 0.3741. The smallest value is -2.601 and the maximum value is 2.7609, median is 0.3395. Positive DA means that there is

an income-increasing behavior and negative DA means the phenomenon of income-decreasing management (Abbott et al., 2006).

4.2. Results of OLS, FEM, REM, FEM (robust SE)

Table 3 below summarizes the results while implementing the regression models using the OLS (least squares regression model), FEM (fixed-effects regression model), REM (random effects) and FEM (robust SE) (FEM standard regression model with fixed error):

Table 3: Comparison of OLS, FEM, REM, FEM (robust SE)

	Pooled OLS	Fixed effect	Random effect	Fixed effect (robust SE)
Variables	(1)	(2)	(3)	(4)
OWN1	- 0.0003 (0.0005)	0.0011 (0.0014)	- 0.0003 (0.0006)	
OWN2	- 0.0014 (0.0009)	- 0.0031** (0.0015)	- 0.0016 (0.001)	- 0.003* (0.0017)
OWN3	0.0005 (0.0004)	0.0003 (0.0005)	0.0004 (0.0004)	
OWN4	- 0.0027*** (0.0008)	- 0.0037* (0.002)	- 0.0028*** (0.001)	- 0.0038* (0.0022)
BOARD	- 0.0162* (0.0094)	- 0.0238 (0.0187)	- 0.0162 (0.0109)	
DUAL	0.0284 (0.0231)	0.1034** (0.0439)	0.0401 (0.0266)	0.0998* (0.0543)
DEBT	0.0218*** (0.0078)	0.0827*** (0.0163)	0.0264*** (0.0087)	0.0837*** (0.0251)
PERF	0.8701*** (0.0695)	0.9834*** (0.0929)	0.8951*** (0.0726)	0.9794*** (0.1333)
SIZE	0.2110*** (0.0236)	0.0319 (0.1152)	0.2147*** (0.0294)	
Constant	-2.2260*** (0.2738)	- 0.1616 (1.3673)	-2.2833*** (0.3413)	0.1206* (0.0715)
Observations	958	958	958	958
R-squared	0.2232	0.1273	0.2299	0.1211
Number of ID		244	244	244
VIF	<10			
Lagrangian Multiplier			0.0007***	

	Pooled OLS	Fixed effect	Random effect	Fixed effect (robust SE)
Hausman test		0.0053***		
Autocorrelation		0.0020***		
Heterokedasticity		0.0000***		
Standard errors in parentheses				
*** p < 0.01 , ** p < 0.05, * p < 0.1				

(Source: Analyzed by author)

In the regression process, OLS yielded 5 significant variables out of 9, the OLS was not suitable for panel data, then FEM model (fixed effects model) and the REM (Random effect model) were employed and corresponding significant results were 5/9 and 4/9 consecutively.

Among FEM and REM, Hausman's test showed that the FEM model is appropriate, but there exists the autocorrelation and the heterokedasticity matters. To overcome these disadvantages, the FEM regression model with robust SE was performed. After running the FEM (robust SE) regression, we obtained the below results:

$$DA = 0.1206 - 0.003 * OWN2_{it} - 0.0038 * OWN4_{it} + 0.0998 * DUAL_{it} + 0.0837 * DEBT_{it} + 0.9794 * PERF_{it} + \omega_{it}$$

4.3. Discussion

In this study, the most suitable model is the FEM regression model with robust SE. Among the 4 variables related to ownership structure, only Foreign ownership (OWN2) and Managerial ownership (OWN4) are significant.

The "Foreign ownership" is negatively related to the discretionary accrual (DA), coefficient = - 0.003 with p-value <0.1. It means that as the ratio of foreign ownership increases, it is possible to reduce the earnings management behavior, we accept the hypothesis H2. This result is consistent with the results of Guo & Partners (2015); Beuselinck, Blanco & Lara (2013). The result of the study showed the positive role of foreign ownership in reducing the probability of earnings management in listed firms, it confirms the value and the growing role of foreign capital flow into businesses in particular and stock market in general. The attraction of capital from foreign investors both helps to increase financial resources and express the prestige of the business. Many studies have shown that foreign ownership is seen as an effective mechanism for improving corporate governance, improving the quality of management and the quality of provided information because foreign investors who always have high standards and requirements when evaluating financial and accounting information (Aggarwal, Klapper & Wysocki, 2003). This is also the reason why the current regulations on foreign shareholding are being loosened to maximize positive advantages in improving the stock market in general and in earnings management in particular.

The "Managerial ownership" ratio is inversely related to the Discretionary accrual (DA), coefficient = - 0.0038 with p-value <0.1. This means that if the rate of ownership by the board of directors increase, the earnings management will reduce. From this result, we accept the hypothesis H4 about the impact of the research variable. This finding is consistent with Alves (2012), Warfield & Associates (2008).

Based on the agency theory (Berle & Means, 1932; Jensen & Meckling, 1976), when the managerial ownership ratio is high, the benefit-based relationships between managers and shareholders will be tighter. The convergence of common interests affects the governing activities, managers tend to act for the overall development of the business, for both them and other shareholders.

Basically, the ownership structure of listed companies in the stock market in Vietnam is very complex, it is significant and important consideration in the restructuring the stock market in Vietnam.

The "Debt ratio" (DEBT) is positively correlated with the Discretionary accrual (DA), coefficient = 0.0837 with p-value = 0.001. This means that the higher the financial leverage, the more it tends to engage into earnings management. This finding is in line with the results of studies such as Charfeddine & Associates (2013).

This result can be explained by the PAT Theory (Watts & Zimmerman, 1986) related to the Debt / Equity ratio. The PAT assumed that a debt covenant with restrictive terms would be more secure for creditors because it might restrict managers to invest others' money in risky projects or to raise more capital to dilute debt. However, the management can loosen the debt ratio by transferring profits from the future to the present. This will increase the financial leverage (debt ratio) and also means that the business is executing more earnings management. The solution is how to limit the violation of debt covenant and thus can provide more reliable information to users.

The "Financial performance" (PERF) is positively correlated with discretionary accruals (DA), coefficient = 0.9794 with p-value <0,001. This means that when businesses operate more efficiently, businesses will tend to maintain its image and show the sustainability of corporate value. The relationship between PERF and DA is positive, contrary to previous studies by Fathi (2013), Charfeddine, Riahi & Omri (2013), Fathi (2013), Chen et al. (2006); Chen, Cheng & Wang (2010).

It can be explained by applying the PAT Theory (Watts & Zimmerman, 1986) related to the bonus plan hypothesis. It is possible to explain why the more efficient the firms are, the more EM will be executed. In bonus plan hypothesis, managers can act for personal interest, maintain the positive results both for attracting investment and receiving the benefits from business's bonus plan.

Investors should be considered this factor as in their investment process because they normally tend to pay attention to high profit businesses instead of the sustainable development ones.

The "Duality" (DUAL) results with a p-value of <0.05 . The evidence has a significant effect on the DA with a coefficient of 0.0998. As such, the results show that duality has a positive relationship with earnings management. This finding is consistent with the findings of several studies (Fathi, 2013; Rahman & Ali, 2006).

In the sample, 37% out of 958 observations are in situation of being duality when CEO and Chairman are the same person, hold both roles. Duality may increase the earnings management of a listed firm. Basically, this is a bad sign of corporate governance in listed companies.

Thus, Vietnam needs to strengthen the quality of corporate governance in order to achieve a better corporate management. Since then, it can contribute to the development of the Vietnamese securities market as well as increase the ability in protecting investors, enhancing the role of corporate governance in managing the business operations in general and in earnings management in particular.

5. Conclusions

This study used the Jones' original model (1991) in estimating and evaluating earnings management. The regression model was constructed and retrieved results showed that of the four variables related to ownership structure, only Foreign Ownership (OWN2) and Managerial Ownership (OWN4) represent a significant negative relationships with earnings management. They are two important factors in limiting behaviors of earnings management. In addition, some control variables, such as Debt Ratios (DEBT), Financial Performance (PERF) and Duality (DUAL) also have effects on earnings management. The results are expected to be a useful reference for the Vietnamese stock market during the restructuring phase of its ownership and it once again becomes the confirmation of strategy in accelerating the foreign investment ratio in the stock market. Vietnam's stock market is currently having great potential for market transparency and the results of the study also show that the use of agency theory is appropriate in detecting the relationship between the ownership and the earnings management behavior.

The results of this research are expected to be useful for investors, companies, policymakers, audit firms and scholars in the earnings management in Vietnam stock market for building a stronger market, a channel for capital financing for the economy in accordance with the current and future worldwide trends.

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The cover features a central globe with a dotted texture. In the upper left, there is an isometric illustration of a workspace with a laptop displaying a bar chart, a printer, a coffee cup, and several small human figures interacting with the devices. White lines with circular nodes connect various points across the globe. The background is a solid light blue, and the bottom of the cover is decorated with abstract, flowing white and light blue lines.

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