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RMUTT Global Business Accounting and Finance Review (GBAFR) has objectives as follows:

1. To be a source of academic works regarding to business management, accounting and finance for scholars as well as any interested persons from both public and private sectors who can utilize them to reference and apply the knowledge obtained from this journal for both individual and organizational benefits either in national or international level.

2. To be a medium for exchanging knowledge in business management, accounting and finance in aspects of theories, related concepts, modern business management, research techniques and methodology, application of knowledge as well as research experiences among faculty members, academicians, researchers, executives, business persons, students and general people who can bring the knowledge from the journal to create benefits and development to the country.

3. To enhance academic ability of faculty members, academicians, researchers, executives, business persons, students and general people about creative researches and knowledge development for benefiting individual, business, industrial and social demands.

4. To develop the potentials of Rajamangala University of Technology Thanyaburi to have been widely recognized for academics, researches, and academic publication in the international standards and recognition.

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- Accounting aspects including accounting principles, concepts and theories, accounting execution, accounting system, corporate accounting, accounting laws and regulation, accounting auditing, taxation and other related fields,
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## **Contact**

Doctor of Philosophy Program Office, the Faculty of Business Administration,  
Rajamangala University of Technology Thanyaburi (RMUTT)  
39 Moo 1, Rangsit-Nakhonnayok Rd. Klong 6,  
Thanyaburi, Pathum Thani, 12110 Thailand  
Website: <http://www.journal.rmutt.ac.th>  
Phone: +66 2 5494819, +66 2 5493235, +66 2 5494809  
Fax: +66 2 5494836  
Email: [gbafr@rmutt.co.th](mailto:gbafr@rmutt.co.th)

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This journal published five research and academic papers, and one book review. In addition, each of the research and academic articles presented such interesting concepts, for employees' motivation, customer's satisfaction, financial planning for retirement, sustainability reporting and competitive advantage strategy, leading to creating new knowledge to the reader. Therefore, this journal is a channel disseminating the knowledge of business administration, accounting, and finance which related persons could apply it for further benefits.

Lastly, the editorial department and editorial board would like to considerably thank you for supporting and pushing forward this journal to occur and well accomplish. We are hopeful of your good cooperation and continuing support in the future.

Sukontip Wongpun, Ph.D.  
Editor-in-Chief

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# **THE STUDY ON THE USE OF ILLEGALLY ISSUED TAX INVOICES FOR TAX CREDITS AT THE CENTRAL AUDIT OPERATIONS DIVISION, REVENUE DEPARTMENT**

**Panatpas Aumung<sup>1</sup>**

Master of Business Administration Program, Accountant, Samutsakorn  
Faculty of Business Administration, Ramkhamhaeng University

**Rujikarn Sanont<sup>2</sup>**

Faculty of Business Administration, Ramkhamhaeng University

## **Abstract**

The objectives of this research were to study the concepts and principles of Value Added Tax, including illegal issuing of invoices, to study the rules and procedures related to the tax invoice issuance for further development guidelines, and to seek preventive measures for illegal tax invoice issuance and for the use of illegal tax invoice. This research study is a qualitative research. Data were collected from tax textbooks, theses, articles, and also electronic data in order to be analyzed for recommendations and solutions to the problems. The study found that there have been practices, regulations and criminal proceeding for illegal invoice issuance. After checking the list with high volumes and consecutive sales with the system of the Central Audit Operations Division, there are two types of the lists. One must be verified by allowing users to prove all the bill payment while the other does not have to be verified due to clear faults. Issuing illegal tax invoices nowadays is caused by complexity and complications, with legal gaps that affect entrepreneur's tax credit refund. This leads to difficulties in tax collection due to several procedures of Tax Return Investigations. If the process is enhanced continuously, the illegal tax invoice issuance problems will be gradually decreased while entrepreneurs' tax payment will be increased.

**Keywords:** Tax Invoice, Illegally, Tax Credit, The Revenue Department

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<sup>1</sup> Ramkhamhaeng University, 2086 Ramkhamhaeng Rd., Hua Mak, Bang kapi, Bangkok 10240

<sup>2</sup> Ramkhamhaeng University, 2086 Ramkhamhaeng Rd., Hua Mak, Bang kapi, Bangkok 10240  
E-mail: rung\_ja@hotmail.com

## **Introduction**

In 1992, Thailand adopted the Value Added Tax System in place of trade taxes in order to comply with the changing economic and social conditions. The VAT system requires VAT registered businesses to collect taxes from buyers or service recipients and pay to the government (Devarajan, Jitsuchon, & Sussangkarn, 1991). Tax that a business collects from a person who buys a product or service is called "sales tax". When the business has purchased any products or services from other registered operators, VAT will also be charged. The type of taxes is called "input tax". If it is the input tax that has arisen from the purchase of goods or services for business operations, the business has the right to deduct from the sales tax. "Tax invoice" shall be kept as evidences for investigation since tax invoice indicates that the input tax has been paid (Revenue Department, 1997).

Therefore, input tax shown on tax invoices has economic value since it can be used for tax deduction or tax return in case the sales tax is less than the input tax. At present, many registered businesses seek unlawful advantages from tax benefits provided by the state, for instance, issuing invoices under the name of another business operator to use as an evidence showing that he has purchased a product or service, and use the false tax invoice for tax calculation. Moreover, with no purchase of products or services, some business operators may purchase tax invoices from other operators to alleviate the tax burden. These acts are against the regulations for the issuance and the use of tax invoices under the Revenue Code and cause the state to lose benefits from tax revenue. In consequence, tax invoice issuers and users are liable for retroactive tax, penalties, additional charges, and criminal charges (Clark, 1976).

Therefore, the researcher aimed to study the use of illegally issued tax invoices to claim tax credits at the Central Audit Operations Division, the Revenue Department, and to study the concepts, principles of tax invoice issuance, and to study relevant rules and procedures to find preventive measures for the use of unlawful tax invoices.

## **Research Objectives**

1. To study concepts, principles of VAT, and the lawful issuance of tax invoices.
2. To study rules and procedures related to the issuance of tax invoices for further development.
3. To find solutions and preventive measures for the issuance and the use of illegal tax invoice.

## **Research Framework**

This study concentrated on using illegally issued invoices to claim tax credits with and without verification, including the issuance and the use of illegal invoices, liability for issuing tax invoices without rights, liability for the use of false tax invoices or illegal issued tax invoices, techniques for inspecting tax invoices, including various standards of government agencies and

private sectors used in practice but affect business operators and tax administration. For example, illegally issued tax invoices that "shall be verified" requires the user to prove every payment, and illegally issued tax invoices that do not need to be verified. The eight industry groups are

1. Agriculture and food industry (agribusiness, and food & beverages)
2. Consumer products (fashion, home & office products, and personal products & pharmaceutical)
3. Industrials (automotive, industrial materials, packaging machinery, paper and printing materials, petrochemicals & chemicals, and steel)
4. Property & Construction (construction materials business)
5. Industries relating to the producers of construction material, the developers and managers of real estates, as well as the construction and engineering services (construction business)
6. Services (commerce)
7. Technology (electronic components business)
8. Resources (energy and mining business)

## **Benefits from Research**

### **Practical Benefits**

1. To understand the concepts and principles related to VAT, including the issuance of tax invoices.
2. To understand the legal measures for using illegally issued tax invoices to claim tax credit.
3. To obtain solutions to issuing illegal tax invoices and to improve existing measures to be more effective.

### **Academic benefits**

1. The knowledge is important for further studies in the use of illegal tax invoices to claim tax credits.

## **Concepts / Theories and Related Research**

### **1. Guidelines for checking false tax invoices**

In VAT system, tax invoice is a financial evidence to claim for tax or tax returns; therefore, it is very important for taxpayers. If tax payers use illegally issued tax invoices to claim for tax credits or tax returns, tax is unable to be collected which causes damages to the State. False tax invoices are issued on purpose to avoid paying tax which leads to serious offenses. Issuing false tax invoices is the problem that must be inspected. There shall be preventive measures for taxpayers not to use false tax invoices. (Revenue Department, 2016)

### **2. Regulations and guidelines for tax invoices (Revenue Department, 2020)**

The Revenue Code Section 89 (7) imposed civil liability on "false tax invoice", and Section 90/4 (7) imposes criminal liability.

Section 89 (7) Using false tax invoice in tax calculation partly or wholly, shall be liable to tax twice the amount of tax on such invoice;

In the case where the user of the tax invoice fails to identify the issuer of the tax invoice, such tax invoice shall be deemed false tax invoice”

**Section 90/4** The following persons failing to comply with the provisions stated below shall be sentenced from 3 months up to 7 years and fined 2,000 up to 200,000 Baht.

### **3. Purpose and Necessity of Taxation**

- 1) To use as expenses for national development.
- 2) To allocate and distribute national income.
- 3) To be used a tool in business policy and economic stability.

### **4. Adam Smith's Principles of Good Taxation (1776)**

Adam Smith's good taxation principles have been accepted by tax theorists as well as general tax scholars. The principles are the foundation of these four concepts as follows

- 1) All people in each country shall sacrifice income or their economic interests to support the administration of the government because all citizens obtain benefits and protection from the government.
- 2) The nature, forms, and the amount that is subject to taxation that each individual must pay shall be certain, not ambiguous, and clear.
- 3) Tax shall be collected on the date, time, place that is convenient for taxpayers. Convenience shall be provided to taxpayers.
- 4) All taxes collected shall be the least burden to taxpayers, but the optimal income to the government.

### **5. VAT concepts and principles**

Wisuttipat (2004) has expanded the concept of VAT collection as follows:

- 1) Value added tax is collected based on consumption or expenditure. Therefore, the government collects the tax when the private person consumes or pay for any product it, whether in the form of purchasing goods or services, or importing products for consumption in the country. The reason that consumption is used as a base for tax collection is due to tax policy. Therefore, taxes should be collected from many bases that do not cause negative feelings towards private tax collection and taxation from multiple bases will help to reduce double taxation.
- 2) Value added tax is an indirect tax. Tax burden is usually pushed on to those involved in the next phase. The amount is not considered as business cost that the business operator must handle but those who are actually liable is the end consumer. VAT, an indirect tax, is difficult to avoid since taxation occurs when a product or service is exchanged and the amount of tax is included in the price of a product or service that consumers must pay as if it were part of such product or service.

## **Research Methodology**

Tax invoice is an evidence of value added tax systems that registered businesses and individuals shall issue and hand over to consumers promptly. Tax invoice must show the information of the buyer, date and time of purchase, quantity, price and VAT or sales tax that shall be collected. For business operators as a buyer or importer, tax invoice is however an evidence to prove that the business operator has paid or should have to pay VAT within each tax month, and is also an evidence for VAT refunds in the event that the purchase tax amount is greater than the sales tax.

### **False Tax Invoice Investigation**

There are two methods to check a false tax invoice (Revenue Department, 2016).

1. To inspect the issuer of illegally issued tax invoice.
2. To inspect the users of illegally issued tax invoices.

### **Characteristics of False Tax Invoices**

1. Significant abnormal characteristics, such as the value of the goods/valued added tax is unusually high, the information in accordance with Section 86/4 is incomplete, or taxpayer identification number belongs to another person.

2. Goods or services are not related to the business.
3. Product price and value added tax are rounded off or high number.
4. An invoice with many copies has been used consecutively for a certain period of time.
5. The characteristics, forms, styles, and/or the texture of the tax invoice are similar or the same.
6. Tax invoices are filled and signed with the same or similar handwriting.
7. Tax invoices are issued by those residing in different provinces, but the tax invoices formats are the same or similar.

**Central Audit Operations Division's False Tax Invoice Detection Procedures** (Revenue Department, 2016)

1. Check the status of the issuing juristic person whether it is deserted / discontinued / still in operation / no information from the database of the Department of Business Development. (BOL data will be updated.)

2. Check the status of the illegal tax invoice issuer whether it is VAT registered.

3. Check the list of illegal tax invoice issuers on the system of the Central Audit Operations Division.

4. Verify tax invoices.

5. Search and seize documents.

When false tax invoice is found, the authority shall

- inspect the operation of VAT only,
- seize the input tax report and input tax invoice,
- check rapidly and keep the false tax invoice when found,

- inform the tax payer to prove the invoice and payment method,
- assume that the false tax invoice has been pulled out, if it is not found, and the tax invoice and its report were changed. The authority shall check the tax invoice whether the purchase amount matches the data that the Central Audit Operations Division received or not. It shall be verified with the issuer, and the buyer shall prove,
- in case the false tax invoice is not found, but there is a blank in the input tax report and the amount missing is equal to the tax invoice. The authority shall investigate the facts.
- in case the evidence is cash or A/C Payee Only checks, request the bank for a copy of the front and back of the check in order to check whether the specified amount was deposited, transferred, or withdrawn to whom.

### **VAT Fraud Liability**

Vat fraud occurs in several businesses, including those who are not business operators in VAT system. Most VAT fraud that have been detected share similar characteristics.

1. Business operators with a place of business

- have business operations,
- are registered as a juristic person,
- are registered in VAT system.

2. Business operators that have their residence as a place of business

- may or may not have real business operations,
- may or may not be registered as a juristic person,
- may or may not be registered in VAT system.

3. Business operators with no place of business

- have no place of business operations,
- are not registered as a juristic person,
- are not registered in VAT system.

4. Business operators sell many products at the same time, but gradually deliver goods and hand over invoices and delivery invoices, as the evidences, to the buyer. When all the goods have been delivered as ordered, the seller will re-issue the invoice with the whole receipt again; therefore, the buyer obtains invoices more than the actual price of the goods.

5. Exporters normally establish two exporting companies to operate during start-up period, and later establish more companies without any exporting operations. The business owner will appoint his employees to be directors, falsify customs documents issued by the Customs Department, and use false tax invoices as input tax as the export cost in order to request VAT refund from the Revenue Department.

### **Persons Responsible for Tax Invoice Issuance**

1. VAT registrant (Section 86 of the Revenue Code) (Revenue Department, 2020).

2. Non-government auctioneers that auction the property of VAT registered business. They can issue tax invoices on behalf of the VAT registrant.

3. Agents, according to the agency appointment contract as specified by law, of the business registered in the Kingdom of Thailand who get appointed to sell and passed the goods to.

4. Agents of the business registered outside the Kingdom of Thailand who has been approved by the Director-General of the Revenue Department.

5. Business operators outside the Kingdom of Thailand who enter into business, provide goods or services occasionally in the Kingdom of Thailand in compliance with the rules, procedures and conditions.

6. VAT registrant whose name has been delisted from VAT registration system has acted in compliance with rules, procedures and conditions.

7. VAT exempted businesses that request for VAT registration and get approved to pay VAT by calculating sales tax deducted by input tax in each tax month.

### **Types of information found on the illegal tax invoice issuer list system**

#### **Non-verification**

It is assumed that tax invoice is illegally issued or unable to be verified. For example, the place of business or the business operators cannot be found; therefore, the tax invoice user has the burden of proof and specify the tax invoice issuer. According to Section 89 (7) of the Revenue Code, if the user cannot identify the issuer, the user shall be liable to tax twice the amount of tax on such invoice.

#### **Verification**

Data must be appropriately verified (Grieve, 2012). Therefore, the tax invoices shall be verified and proved that they are legally issued by investigating the users of tax invoices to get facts about the purchase of goods, payment and obtaining tax invoices. The information together with the tax invoice will be submitted for verified. If the result shows that the invoices are not correct, tax invoice users shall have the burden of proof and specify the issuer. If the user cannot identify the issuer, such tax invoice is considered as false tax invoice and the user shall be liable to tax twice the amount of tax on such invoice according to Section 89 (7) of the Revenue Code.

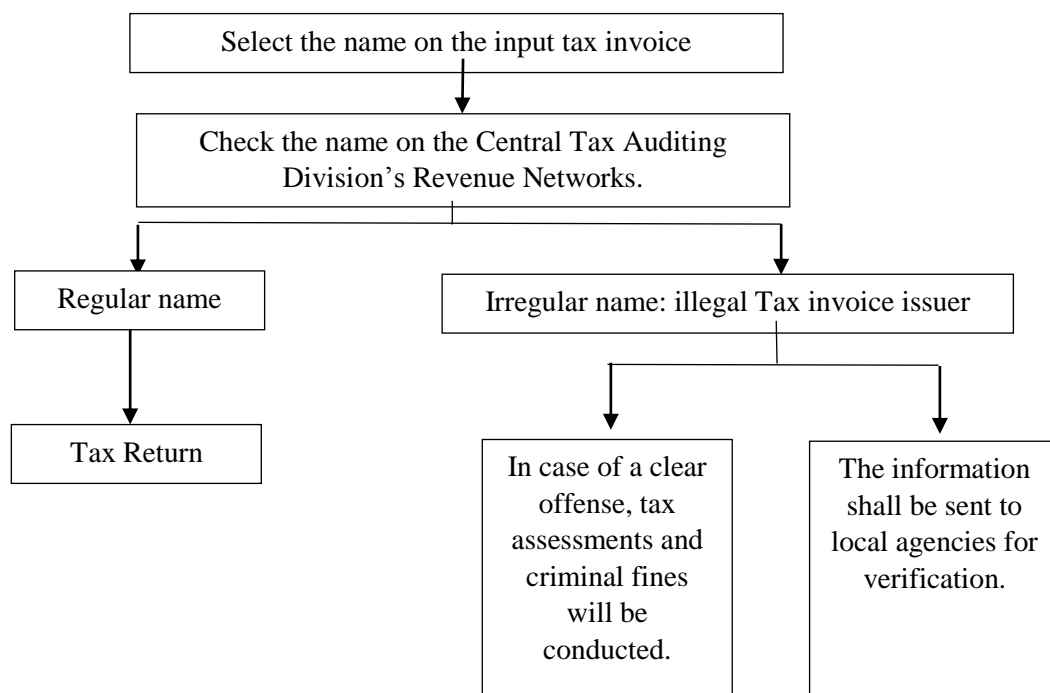
#### **Data analysis**

Criteria and reasons of the eight industry groups in terms of using illegal tax invoices for tax credits and VAT refunds, together with their practice, guidelines, regulations, laws, criminal proceedings for false tax invoices were analyzed. The eight industry groups consist of 1. agriculture and food industry (agribusiness, food and beverages) 2. consumer products (fashion, home and office products, and personal products & pharmaceutical) 3. industrials (automotive, industrial materials, packaging machinery, paper and printing materials, petrochemicals & chemicals, and steel) 4. property & construction (construction materials business) 5. industries relating to the producers of construction material, the developers and managers of real estates, as well as the construction and

engineering services (construction business) 6. services (commerce) 7. technology (electronic components business) and 8. resources (energy and mining business).

The registration process in each industry groups is different at the beginning. According to the law, there shall be at least 3 persons investing five baht per share. Registration can start at 15.00 baht up to 1,000,000.00 baht or more depending on the company. Companies in each industry group differently use illegal issued tax invoices for tax credits. This affects the Revenue Department in terms of revenue collection (Rao, 2016).

Due to illegal tax invoices for tax credits, the Central Audit Operations Division has compiled various information, analyzed and shown the process to inspect the list of tax invoice issuers as in the picture.



**Figure 1** The process of tax invoice issuer verification.

From the study of the use of illegally issued tax invoices for tax credit, the Central Audit Operations Division begins the process with the selection of names on the input tax invoice. After that, it will lead to the process of checking the names on the Revenue Network of Central Audit Operations Division. The names will be divided into regular and irregular ones which are illegally issued. Illegal tax invoice issuance can be considered in 2 cases which are 1) in the case of a clear offense, tax assessment and criminal fines will be conducted, and 2) in the event that a verification procedure is needed, information shall be sent to different local agencies for verification, and the investigation will be seriously proceeded as follows:

**Add the name of the business operator to the list of illegal tax invoice issuers**

In the event that the tax issuer has suspicious behaviors, such as he has no business operations, issues sales tax invoices without the right to issue, or his tax invoice is falsified by another



person, this shall be reported to the Central Audit Operations Division to add the name to the list of illegal tax invoice issuers.

**In case no place of business is found, or the business has been ceased,**

1. Product/Service characteristics
2. Investigate by inquiring persons or nearby businesses whether there was any business operation and when it was ceased.
3. Withdraw and remove the name from VAT registrant list.
4. Notification of business relocation.
5. Relevant documents, such as place of business photos, copies of tax invoices, copies of testimony, and VAT investigation report.
6. Business operator information, such as corporate information, VAT registration information, business owner's information, directors or business partners's information, and types of business.
7. Information for filing all tax returns.

**In case there is no operation at the business place,**

1. Business operator information, such as corporate information, VAT registration information, business owner's information, directors or business partners's information, and types of business.
2. Legal reports and tax invoice preparation.
3. Random tax invoice verification, its results or the results of tax invoice verification.
4. Investigation data from inquiring persons or nearby businesses.
5. Information for filing all tax returns.

**Results**

From the study of using illegal tax invoices to claim for tax credits, it is found that there are still issues about the prevention and suppression of VAT fraud by using tax invoices. The research issues were found in the eight industry groups.

1. It is unable to know whether tax invoices used for tax returns are legally issued or not. Therefore, such tax invoices shall go through the investigation process of the Revenue Department.
2. The process to indicate whether it is legally issued tax invoices is clear sources of such invoices issued when there is a purchase. The tax invoices can be used to claim tax credits.
3. There is a solution and preventive measures to using illegally issued tax invoices to claim tax credits. There should be a study on the use of invoices, transparency, honesty, and regulations and law relevant to entrepreneurship and taxation.

**1. Procedures and laws**

Procedures and laws can prevent and suppress corruption. The Revenue Department imposes an operational verification procedure by verifying tax invoices. Officials must conduct a preliminary

investigation of the name of tax invoice issuers on the Intranet network, which is an efficient, reliable, convenient, fast, and modern method for VAT returns. Verifying tax invoices is a part of the investigation procedures. Officials are required to verify documents and evidences relevant to input tax invoices for tax returns. In case tax invoices are sent to different local agencies for verification, the process shall be done within 60 days from the date of acceptance.

## **2. Business Operators**

VAT returns that business operators have claimed are delayed because their tax invoices need to be verified. Officials are required to investigate the irregularities of the input tax invoices that the business operators used to claim for tax returns by checking them on the Revenue Department's system. If the verification shows that the tax invoices are legally issued, the business operators can receive VAT returns. However, if tax invoices are found, tax assessments which include fines, additional penalties, and legal actions must be conducted. The VAT return claimant must bring documents and evidence to prove. If the business operator submits the VAT return form (P.P.30) to receive VAT returns in cash and has been inspected, the business operator has to bring the documents to the authorities for tax return verification. Documents and evidence that shall be checked depends on the nature of the business. Business operators that, without dishonesty, use illegally issued tax invoices to claim tax returns in the form of cash or tax credits may lack of legal knowledge. However, business operators that have the intention to illegally issue tax invoices do not have business operations, or they may also have other businesses in order to issue tax invoices under a credible name and sell them to other registered businesses that need tax invoices.

## **3. Tax Collection**

VAT investigators must have knowledge and the ability to collect taxes. The current issues are that officials still lack work experience and the authority lack of skilled personnel. The important limitation that causes the VAT system to be inefficient is due to the inability to control the source of tax invoice issuance; large business operators, manufacturers, importers, wholesalers, large service providers to issue tax invoices and control the use of tax invoices to be continuous and concise. This results inefficiency of tax collection which causes incomplete tax collection and damages every year. Even though the Revenue Department has implemented measures to prevent and suppress illegally issued tax invoices, there are still VAT evasion by issuing false tax invoices.

## **Dicussion**

Tax evasion by using illegal tax invoices reduces the income of the government and cause unfairness to other business operators who act in good faith. This issue cannot be resolved in a timely manner and lead to confusion among business operators. The Revenue Department has set up a tax management system to suppress the offense of tax evasion, namely the investigation of VAT operations. If the offense is found, tax assessment, fines, and additional penalties and taxes. According to the list of illegal tax invoice issuers, there are two types. The first type is that no

verification is needed if there is a clear offense. With the preliminary information which indicates that the business operator has issued tax invoices despite no operations and the Revenue Department has withdrawn its the VAT registration, it is assumed that such tax invoices were illegally issued. Tax invoice user must indentify the issuer. If the user of tax invoice fails to identify the issuer of the tax invoice, such tax invoice shall be deemed false tax invoice and the user shall be liable to tax twice the amount of tax on such invoice according to Section 87 (7) of the Revenue Code. The second type is that the tax invoices need to be verified. In case the business operator that has a place of business falsifies tax invoices, or issues tax invoices without actual purchases, the tax invoices shall be submitted for verification to prove that they are legally issued (Revenue Department, 1997).

### **Suggestions**

Since the existing measures cannot prevent and suppress illegally using and issuing tax invoices for VAT returns, business operators and consumers shall also be involved in solving such problem. The solutions to issuing and using illegal tax invoices are as follows

#### **1. Procedures and laws**

In case of submitting illegally issued tax invoices to various departments for verification, the process shall be done within 60 days from the date of acceptance. The regulation relevant to the process of notifying the verification results should be improved by allowing the results to be notified via the email system since it reduces the working time and facilitates honest business operators. With this improvement, the officials can proceed the tax assessment timely. In terms of laws, VAT registrant shall submit a tax return (P.P.30) with a copy of the input tax report, sales tax report, and a copy of the tax invoice as evidence in VAT calculation. Moreover, there should not be VAT returns in cash, but in tax credit only, except for exporters who are responsible for zero tax, or certain businesses only.

#### **2. Business Operators**

There should be law amendments by increasing penalties. Ethics training seminars, and cooperation from stakeholders to monitor the behavior of business operators that are likely to commit offenses, and publicizing prosecution should be conducted.

#### **3. Tax Collection**

The law should empower of the Revenue Department officials in be able to arrest the offenders as other department officials such as Excise Department, Customs Department. This would increase the efficiency of suppressing VAT fraud.

For knowledge and competence of the Revenue Officials, training courses on criminal prosecution are necessary for responsible officials in order to gain more knowledge and understanding in criminal evidence. The officials should be trained to be able to consider the legal issues. Academic seminars for agencies involved in tax litigation help increase knowledge and operational efficiency. Technology training helps the officials improve their potential. The officials should understand the

business environment, service providing, working efficiently and transparently. Awareness about taxation should be concentrated on from the youth to the adult level by providing tax-related activities and courses at school, campaigns that allow citizens and the private sector to participate and express their opinions. If tax-related information is publicized on all kinds of media and channels, this can help promote the positive image of the organization, raise positive attitude towards taxation Publicize all media, and citizens will get information relating to state welfare resulting from paying taxes to the government.

Tax evasion with the use of illegally issued tax invoices is one of the major problems in Thailand that causes enormous losses in government revenue. This destroys the taxation system, and impairs competition in the same business group which directly affect the economy. At present, the exact amount of damage has not yet been determined. The Revenue Department should therefore have revised laws and operational procedures in order to prevent wrongdoing acts, so that tax collection will be proceeded efficiently and fairly. In addition to the development of various technologies to prevent the evasion of taxation, attitude towards taxation must be taken into consideration. Positive attitude towards taxation should be educated from elementary education to higher education which can lead to the voluntary taxation for public interest. If everyone has good awareness of taxation, the Revenue Department's tax collection will be more efficient and effective. This will lead to sustainable tax base development.

## References

- Clark, J.Morris. (1976). Civil and Criminal Penalties and Forfeitures: A Framework for Constitutional Analysis. *Minnesota Law Review*, 1526.
- Devarajan, S., Jitsuchon, S., & Sussangkarn, C. (1991). A Value Added Tax (VAT) in Thailand: Who Wins and Who Loses?. *TDRI quarterly review*, 6(1), 12-16.
- Grieve, A. P. (2012). Source data verification by statistical sampling: issues in implementation. *Drug information journal: DIJ/Drug Information Association*, 46(3), 368-377.
- Revenue Department. (2020). *Revenue Code*. Retrieved from <https://www.rd.go.th/publish/5209.0.html>
- Revenue Department. (2016). *Tax Invoice Handbook*. Retrieved from [http://www.rd.go.th/publish/fileadmin/user\\_upload/ebook/taxinvoice.pdf](http://www.rd.go.th/publish/fileadmin/user_upload/ebook/taxinvoice.pdf)
- Rao, N. (2016). Do tax credits stimulate R&D spending? The effect of the R&D tax credit in its first decade. *Journal of Public Economics*, 140, 1-12.
- The Revenue Department. (1997). *Commemorative book for opening the Revenue Department building*. 1st edition, Bangkok: Bangkok Printing House (1984) Ltd., Page 221.
- Wisuttiapat, C. (2004). *Value Added Tax Collection from Electronic Commerce Transactions*. (Master of Laws, Thammasat University).

# **CREATING EMPLOYEE WORKING SKILLS AND PERFORMANCE THROUGH ORGANIZATIONAL TRAINING PRACTICES IN ABC TIRE MANUFACTURING COMPANY**

**Nuttakit Iamsomboon<sup>1</sup>**

Department of Social Sciences, Faculty of Liberal Arts,  
Rajamangala University of Technology Thanyaburi

**Sarakul Sukortprommee<sup>2</sup>**

Department of International Business Administration, Faculty of Business Administration,  
Rajamangala University of Technology Thanyaburi

**Varisara Klinpratun<sup>3</sup>**

Department of International Business Administration, Faculty of Business Administration,  
Rajamangala University of Technology Thanyaburi

## **Abstract**

This research aimed at studying the effects of organizational training practices on creating employee working skills and employee performance in ABC Tire Manufacturing Company, which it is located in Pathum Thani Province. The samples were of 400 employees working in ABC Tire Manufacturing Company in Pathum Thani Province. The questionnaires were used to collect the data with the purposive sampling and convenient sampling methods. Data analysis consisted of descriptive statistics including frequency, percentage, mean and standard deviation and inferential statistics including structural equation model (SEM). The results showed that most of the respondents were male (366 persons or 91.5%), aged between 21-30 years old (120 persons or 30.0%) and between 41 – 50 years old (120 person or 30%), graduated lower than bachelor's degree (288 persons or 72.0%), worked as operational staff (330 persons or 82.5%), worked for 6 – 10 years (138 persons or 34.5%), and earned between 25,001 - 35,000 baht (138 persons or 34.5%), respectively. The employees had opinion related organizational training practices, working skills and performance in high level. The SEM revealed that organizational training had a direct effect on working skills, managing skills, and leading skills and an indirect effect on employees' performance with standardized coefficient as of

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<sup>1</sup> Rajamangala University of Technology Thanyaburi, 39 Moo 1, Klong 6, Khlong Luang, Pathum Thani, 12120  
E-mail: nuttakit\_i@rmutt.ac.th

<sup>2</sup> Rajamangala University of Technology Thanyaburi, 39 Moo 1, Klong 6, Khlong Luang, Pathum Thani, 12120  
E-mail: sarakul\_s@rmutt.ac.th

<sup>3</sup> Rajamangala University of Technology Thanyaburi, 39 Moo 1, Klong 6, Khlong Luang, Pathum Thani, 12120  
E-mail: toeyvarisara@gmail.com

0.549, 0.439, 0.430, and 0.529, respectively. In addition, the working skills, managing skills and leading skills had a direct effect on employees' performance with standardized coefficient as of 0.645, 0.224, and 0.178, respectively, at the significant level as of 0.001. After the study, the result can be contributed to the managerial practitioners to create appropriate programs for training their employees in the organization. In relations to the academic practices, the scholars can utilize the model to study related training and development area.

**Keywords** Employee Working Skills, Employee Work Performance, Organizational Training Practices, Tire Manufacturing Company

## Introduction

There have been various changes in related business environment including technologies being used in the product and service processing, policies and governmental regulation driving the business activities and trade transactions, culture and behavior of customers influencing in creating different needs and wants, macro and micro economic status indicating the liquidity of country lives and business movement, as well as ecological environment referring to natural conservation (Hans, 2019).

For example, Richard Arkwright in 1769 developed the water frame which it was a technology spinning 96 strands of yarn at once and later there were adoption to another semi-auto manufacturing activities. Or, the steam engine developed in 1775 by James Watt had been used as power generator for other machines. In addition to the example, computer in 1946 was developed for using as a facilitator in computing, recoding, generating, and deciding a huge data used in the army and later used in many organizations. Another example can be the Internet which had been developed in 1969 and created consequently many technologies regarding the Internet such as electronic mail, social media or website (Hills, 1970; Tann, & Breckin, 1978; Townsend, 2001; Agarwal, & Agarwal, 2017).

Due to the changes, there has been a huge impact on economic, sociological, ecological, and political changes and movements. In addition, these changes created organizational adaptations and adjustments. However, in order to response to the changes, the organizational training and development is very important for all organizations because it can help increase and enhance employees' ability, knowledge and skills, which at the end it can build the strong competence and create competitive advantages for business operation (Vinesh, 2014). In addition, it is important that the organizations must consider to create the spaces for getting employees to share their obtained knowledge and ability since these can help transfer and maintain knowledge and skills for other employees in the organization which finally create the better organizational performance (Ipe, 2003).

Nevertheless, the challenges in organizational training is how to create the appropriate training practices and what can be trained in order to correspond with the organizational types and characteristics. In the literature, manufacturing companies occupied different training and development characteristics from servicing and retail companies (Pattanaik, Mishra, & Dash, 2017), which they specifically require, for example, product and process design and manufacturing training, production management and logistics training, automated and robotized manufacturing training, manufacture, technologies training of the industry, and languages communication training (Piñol, Porta, Arévalo, & Minguella-Canela, 2017).

According to this, the researchers are interested in studying about the organizational trading practices by focusing on a tire manufacturing company in order to identify the organizational training practices used in tire manufacturing, which it can help enhance the employee' personal and organization performance (Vinesh, 2014; Choudhary, Naqshbandi, Philip, & Kumar, 2017).

## Objectives of the Study

The study of “Creating Employee Working Skills and Performance through Organizational Training in Tire Manufacturing Company” had the objectives for the study as follows.

Objective 1: To study organizational training practices, employee working skills and employee performance in Tire Manufacturing Company.

Objective 2: To investigate the cause-effect relationship of organizational training practices on employee working skills and employee performance in Tire Manufacturing Company.

Objective 3: To investigate the cause-effect relationship of employee working skills on employee performance in Tire Manufacturing Company.

## Hypotheses

The researchers had proposed the hypotheses to respond the objectives of the study as being written as follows.

Hypothesis 1: Organizational training practices had a positive influence on employees working skills.

Hypothesis 2: Organizational training practices had a positive influence on employees managing skills.

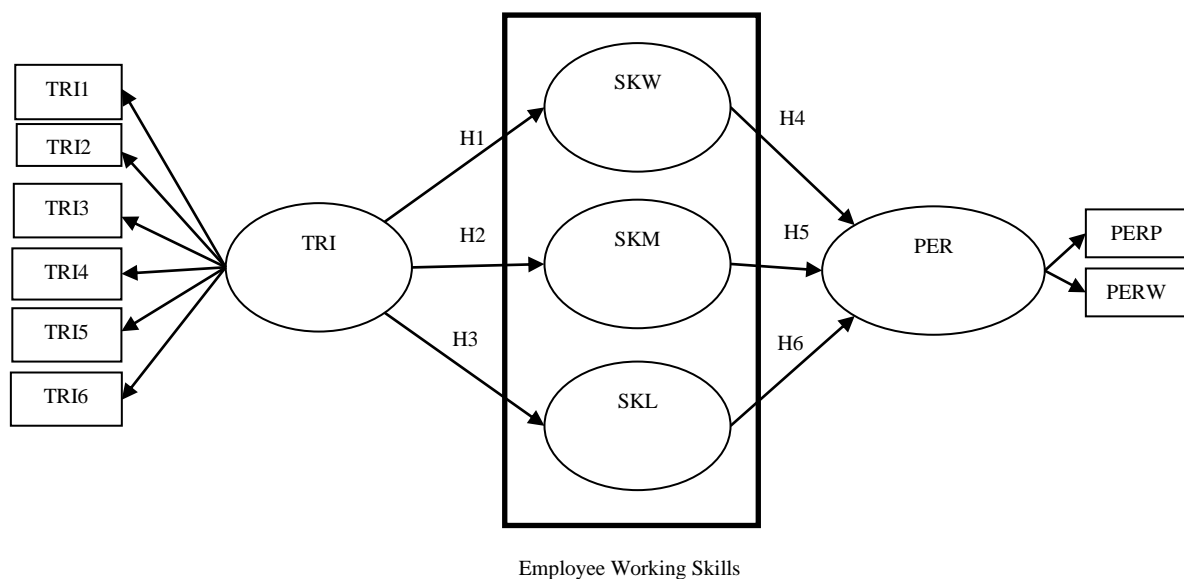
Hypothesis 3: Organizational training practices had a positive influence on employee performance.

Hypothesis 4: Employees working skills had a positive influence on employee performance.

Hypothesis 5: Employees managing skills had a positive influence on employee performance.

Hypothesis 6: Employees leading skills had a positive influence on employee performance.

## Conceptual Framework



**Figure 1** Conceptual Model



## **Literature Reviews**

### **Organizational Training Practices**

Organizational training practice is the effort of the organization that is attempting to plan, design, and develop the employee's knowledge and ability in order to achieve the organization goal and mission. This is also extended to the process where the organization follows and continue provide organization training for their company for incessant development (Vinesh, 2014). Indeed, the organizational training also does not only cover an increase in employees' knowledge and skills, but also extend to the creation of employees' satisfaction, innovativeness, and productivity. Providing the learning opportunity can be the right way in reaching organizational objectives (Rodriguez & Walters, 2017). In training employees in the organization, there are three basic concepts developing needs for employee training, which consisted of problem solving, knowledge and skill improvement, and organizational changes drivers (Nassazi, 2013). Under the fundamental concepts in employees' training, there are several approaches being used to design the training programs including problem solving, profile comparison, formal training, on-the-job training, off-the-job training, coaching and monitoring, job rotation and transfer, conference, role-play, and career planning and goal setting (Rodriguez & Walters, 2017). In creating effective organizational training, the organizational objectives and strategic planning process are required to be well identified. In addition, each training objectives and goals are necessary to include clear mission, organizational value, equal organizational policy, equal organizational treatment, core competency matching, continuous development, qualified persons for training and organizational changes (Vinesh, 2014). Furthermore, Ongori and Nzozzo (2011) added that in creating effective training, the training process should start from identifying needs to develop and train employees, and then design the training methods which they can be on-the-job or off-the-job training as well as preparing training evaluation in order to inspect and follow up the result after training is done. Salas, Tannenbaum, Kraiger, and Smith-Jentsch (2012) supported that there are such key questions, for instance what?, how? and do we?, can be questioned in order to lead to decision making on whether the training program should be designed and conducted. Furthermore, the effective training can be assessed by basic production, basic quality, labor turnover, absenteeism, accident rate, revenues, machine utility and productivities, problem solving skills, material wastage, and customer complaint (Ongori and Nzozzo, 2011). However, the training program can be varied from organizational characteristics which the organization type can play an important role in leading to training program selection (Pattanaik, Mishra, & Dash, 2017). According to this study aiming on manufacturing arena, the training program, therefore, can be, for example, product and process design and manufacturing training, production management and logistics training, automated and robotized manufacturing training, manufacture, technologies training of the industry, and languages communication training (Piñol, Porta, Arévalo, & Minguela-Canela, 2017). When there is an effective training, the result can yield employee job satisfaction, promotion chances, employee morale boost, employee skills, teamwork efficiency, interpersonal relationship, and job performance (Ongori, & Nzozzo, 2011; Vinesh, 2014).

## **Employee Skills**

Organizational training is significant for the organization to gain benefits for the employees (Ongori, & Nzonzo, 2011; Vinesh, 2014). They can obtain right skills including technical, interpersonal, and abstract thinking skills (Katz, 1974; Markovic, & Ljajic, 2016). The technical skill refers to knowledge and expert used in a particular work, meanwhile the interpersonal skill refers to ability to work collaboratively with other organizational members. Lastly, the abstract thinking refers to ability to work with creative ideas. In addition, Rodriguez & Walters (2017) refer another area of the skills covering on technical, mental and functional skills, or knowledge, ability and emotion, in achieving the production and service activities from the right and strategic training. As the result, this research interpreted the right skills from organizational training into creating employee skills in terms of working, managerial and leading skill. The working skill refers to ability, attitude and knowledge of employees in maintaining work discipline, managing various risks, adapting to changes, having work consciousness, and having knowledge about the machinery. In the meantime, the managing skills refers to ability in having a good working plan, being able to decide on job, creating incentives for colleagues, solving the problems immediately, and considering work safety. In addition, the leading skills consists of employees' ability in sharing their opinion to the publics, daring to do right things, respecting colleagues' different opinions as well as inspiring and motivating employees' colleagues. When the employees obtain the skills created by the organizational training, they can then perform the work well. In addition, they can also create the organizational performance in terms of customers satisfaction, organizational improvement, organizational learning, organizational competitiveness and organization growth (Hameed, & Waheed, 2011; Nda, & Fard, 2013).

## **Employee Performance**

Employee performance has been studied by various academicians who attempt identify the measurement of the employees' performance in the organization. The employee performance generally refers to the ability of the employees that can adapt themselves in terms of skills, knowledge, and ability to respond to the changes (Nda, & Fard, 2013). In the meantime, Ackah, (2014) advocated that the employee performance refers to the ability of the employee to perform the better works, contribute product and service quality, minimize wastage, and work on job assignments fulfilling the work objectives and organization mission by using the right knowledge and skills obtained from trainings provided by the organizations. Indeed, the employee performance can be classified into various main areas including employee work quality, work quality, time-based work and interpersonal relationship. Generally, the employee work quality means ability of employees working and producing accurate work result and customer requirement matching whereas employee work quantity refers to the number of products produced within the assignment. In the meantime, employee work output under the time frame refers to the ability of the employees produce the outputs at the time set. Lastly, the employee interpersonal relationship means ability of the employees to create and maintain the relationship among their colleagues (Nda, & Fard, 2013; Chaimongkol et al., 2018; Sukortpromme, Onputtha, & Manorah,

2019). In addition, the employee performance is also measured in two main levels including personal level and organizational level, which the personal level considers ability of the employee to perform the work in response to their individual objectives meanwhile the organizational level refers ability of the employees to perform the work that can have an impact on organization as a whole. The individual employee performance can conclude the willingness as being assigned, ability to solve the problems, ability to manage the workload, ability to manage the worktime, and respect given by the others. In the organizational employee performance level, it can include the completeness of the work according to set goal, work with less mistakes, meet of the work standard, work completeness within the specified period and ability to learn more knowledge and improve work skills. Nda and Fard (2013) pointed out that when the organizations perceived the employee performance, later they can perceived the organizational performance as well as the national performance in the way that the human capital as the whole country is improved and national economic then is better.

## **Materials and Methods**

### **Population and Samples**

Population in this study were of 3,125 employees working in the tire manufacturer located in Pathumthani Province, Thailand (Thai Labor Database, n.d.), which the name of the company cannot be mentioned. The samples were calculated by Yamane (1973) which result yielded of 354 employees at the confident level as of 95% and error as of 5%. In order to prevent unusable data, the researchers distributed and received 400 questionnaires to obtain the data.

### **Research Tools and Data Collection**

Researchers used close-ended survey questionnaires divided into 4 parts. The first part consisted of check-list questions asking about the personal factors including gender, age, education level, position, working experiences, and monthly income. The second, third and fourth part consisted of rating scale questions (1-5 Likert scale) asking about organizational training practices, employee skills and employees' performance. The score "1" refers to "Not at all agreeable", "2" refers to "Slightly agreeable", "3" refers to "Moderately agreeable", "4" refers to "highly agreeable" and "5" refers to "Extremely agreeable" on the statement in the questionnaires. For data collection, the researchers employed purposive and convenience sampling method to distribute the questionnaires to employees in the tire manufacturing company located in Pathumthani Province. After the questionnaires returned, the researchers inspected the completion and correctness.

### **Validity and Reliability**

For validity check, the researchers had experts in related fields inspect the accurateness and consistency of contents and questions. The researchers awaited the comments and applied the comments for improving the questionnaire. After the questionnaire edition, the reliability check was performed by 30 pretested questionnaire and the Cronbach's alpha coefficient yielded 0.90 for organizational training program, 0.81 for employee working skill, 0.70 for employee managing skill,

0.82 for employee leading skill, 0.84 for employee personal level performance and 0.89 for employee organizational level performance. For the analyzed data, the score for all variables were higher than 0.70 as recommendation, interpreting that all variables can be modeled (Hajiar, 2014).

## **Measurements**

### **Organizational Training Practice**

The organizational training practice has been measured by 6 items including “TRI1: Training on safety measures such as safety mission statement (SMS), basic concept or working safety with chemicals”; “TRI2: Training on ISO quality policies or other policies”, “TRI3: Training on traffic accidents notification and accident without a strike.”; “TRI4: Training on equipment and technology usage, technology related problem solution; for example, using barcode, using TAG, using a stand-alone forklift, lift trucks, and etc”.; “TRI5: Training on first aid assistance, or basic related knowledge in order to initially manage the accidents in the organization”; and “TRI7: Training on various operational standards such as the 3S standards of Tube Inspection Line (OEM & Export)”.

### **Employee Working Skill**

The employee working skill has been measured by 15 items categorized into 3 dimensions including employee working skill, employee managing skills and employee leading skill. For employee working skills, there were 5 items as follows: “SKW1: You have discipline to work.”, “SKW2: You can manage various risks that may occur.”, “SKW3: You can adapt to changes that may occur.”, “SKW4: You always have consciousness no matter what happens.”, and “SKW5: You have knowledge about the machinery that you are working well.”. For employee managing skills, there were 5 items as follows: “SKM1: You have a good working plan.”, “SKM2: You are brave enough to decide on your own job.”, “SKM3: You can create incentives for colleagues.”, “SKM4: You can solve problems immediately.”, and “SKM5: You always consider safety as number one.”. For employee leading skills, there were 5 items as follows: “SWL1: You are a positive person and always friendly to colleagues.”, “SWL2: You dare to express your opinion to the publics.”, “SWL3: You dare to do right things.”, “SWL4: You do not criticize colleagues’ different opinions.”, and “SWL5: You can inspire colleagues.”.

### **Employee performance**

The employee performance has been measured by 10 items categorized into 2 dimensions including employee personal level performance and employee organizational level performance. For employee personal level performance, there were 5 items as follows: “PERP1: You are willing to work as assigned.”, “PERP2: You can solve problems immediately.”, “PERP3: You are always full of work.”, “PERP4: You have good time management and can make the most of it.”, and “PERP5: You are respected and trusted by others.”. For employee organizational level, there were 5 items as follows: “PERW1: You can complete the work according to your set goal.”, “PERW2: You have less mistakes when you work.”, “PERW3: Your work can meet the company standard.”, “PERW4: You can finish the work within the specified period.”, and “PERW5: You can learn more knowledge and improve your work skills.”.

## **Data Analysis**

Researchers analyzed the data derived from samples by using descriptive statistics including frequency, percentage, mean and standard deviation and inferential statistics consisting of structural equation modeling (SEM). All basic requirements before using the SEM including skew, kurtosis, multiple correlation, were required and tested. The model-fit indices include relative chi-square (Cmin/df is not over than 2), Chi-square probability Level (p-value should be more than 0.05), goodness of fit index (GFI should be more than 0.90), adjusted goodness of fit (AGFI should be more than 0.90), standardized root mean square residual (SRMR should be Less than 0.08), root mean square error of approximation (RMRSEA should be less than 0.08), Tucker Lewis Index (TLI should be more than 0.90), comparative fit index (CFI should be more than 0.90), normed fit index (NFI should be More than 0.90) were employed to oversee the fitness of the model (Tabachnick, & Fidell, 2001; Hooper, Coughlan, & Mullen, 2008; Arbuckle, 2011; Sukortprommee, 2013). The modification indices were considered when the model was not fit.

## Results and Discussion

### General Information of the Respondents

The results showed that most of the respondents were male (366 persons or 91.5% ), aged between 21-30 years old (120 persons or 30.0%) and between 41 – 50 years old (120 person or 30%), graduated lower than bachelor's degree (2 88 persons or 72.0% ), worked as operational staff (330 persons or 82.5% ), worked for 6 – 10 years (138 persons or 34.5%), and earned between 25,001 - 35,000 baht (138 persons or 34.5%), respectively.

### The Study of Organizational Training, Employee Working Skills and Employee Performance

**Table 1** No. of Measurements, Cronbach's alpha, Mean, S.D. and Its Interpretation

Variables	Mean	S.D.	Interpretation
Organizational Training Practices			
TRI	3.75	0.69	Highly agree
Employee Working Skills			
SKW	4.01	0.57	Highly agree
SKM	4.07	0.55	Highly agree
SKL	4.02	0.54	Highly agree
Employee Performance			
PERP	4.07	0.57	Highly agree
PERW	4.06	0.59	Highly agree

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PERP: Personal Level Performance, PERW: Organizational Level Performance

From the above table, the study showed that the mean score of the organizational training, employee working skills and employee performance ranged from 3.75 – 4.07, which can inform that employees agreed on the related statements in high level.

**Table 2** Min, Max, Skew, Kurtosis and c.r. of studied variables

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Skew</b>	<b>c.r.</b>	<b>Kurtosis</b>	<b>c.r.</b>
TRI1	1	5	-0.599	-4.89	0.002	0.007
TRI2	2	5	-0.299	-2.444	-0.392	-1.599
TRI3	1	5	-0.508	-4.15	-0.037	-0.152
TRI4	1	5	-0.675	-5.514	0.125	0.508
TRI5	1	5	-0.531	-4.333	0.193	0.787
TRI6	1	5	-0.645	-5.265	0.139	0.568
SKW	1.6	5	-0.885	-7.226	1.956	7.985
SKM	1.2	5	-0.971	-7.925	3.287	13.419
SKL	1.4	5	-0.844	-6.892	2.447	9.991
PERP	1.4	5	-0.709	-5.792	2.168	8.851
PERW	1.2	5	-1.021	-8.34	3.556	14.518

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PERP: Personal Level Performance, PERW: Organizational Level Performance

From the above table, it showed that the skewness values were between -0.299 and -1.021. Meanwhile, the kurtosis values were between -0.002 and 3.556, which felt not far from the normal curve. This means that all data were distributed normally and appropriate in using for constructing the structure (Neawchumpa, Ponathong, & Skulkhu, 2016).

### **Correlation Study of Organizational Training, Employee Working Skills and Employee Performance**

In addition, before employed structural equation modeling in order to investigate the cause and effect relationship among the variables, the researchers examined the correlation of the variables by using Pearson's Correlation with the purpose to avoid the multicollinearity. The result is shown in the below table.

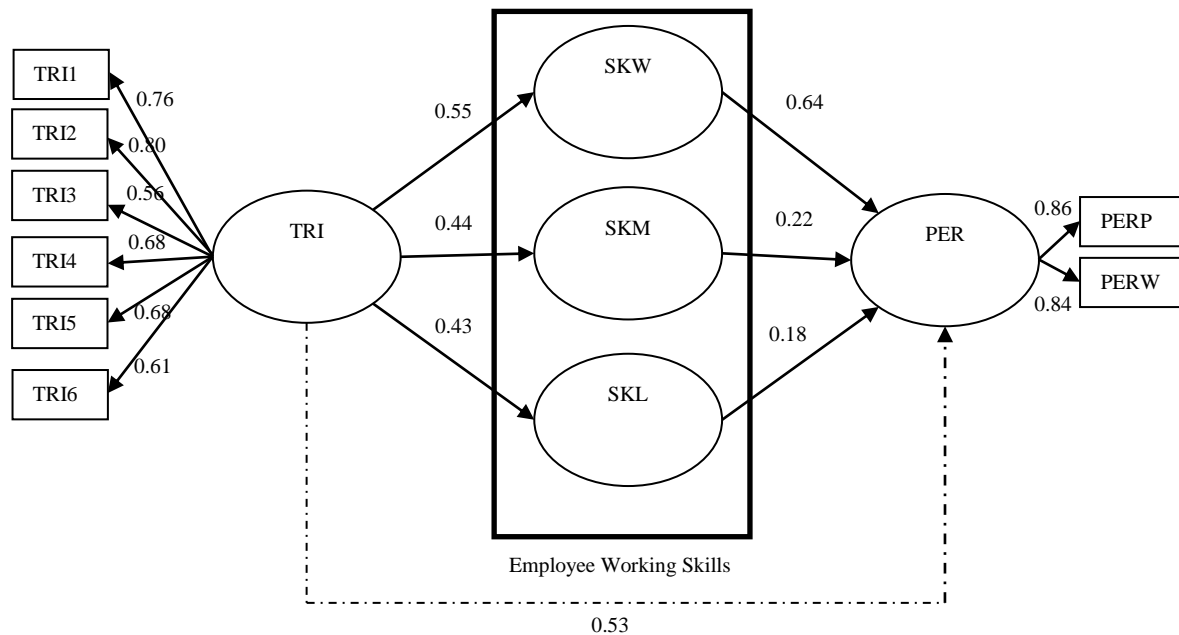
**Table 3** Correlation Study of Organizational Training, Employee Working Skills and Employee Performance

Variables	TRI	SKW	SKM	SKL	PERP	PERW
TRI	1					
SKW	.468**	1				
SKM	.422**	.646**	1			
SKL	.353**	.556**	.669**	1		
PERP	.435**	.595**	.644**	.594**	1	
PERW	.367**	.498**	.648**	.575**	.672**	1

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PERP: Personal Level Performance, PERW: Organizational Level Performance

From the above table, the result found that the variables have coefficient (r) between 0.353 and 0.672, which they are within the acceptable values (not higher than 0.90) as recommended by Tabachnick and Fidell (2001). With the acceptable values, the studied variables are usable for constructing the structural equation modelling.

### Model Test and Adjustment



**Figure 2** Final Model

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PER: Employee Performance, PERP: Personal Level Performance, PERW: Organizational Level Performance

**Table 4** Goodness Indices of Before and After Model Adjustment

Model	Cmin/df	df	p-value	GFI	AGFI	RMR	RMRSEA	TLI	CFI	NFI
Before adjusted	10.863	41	0.000	0.812	0.697	0.046	0.157	0.738	0.805	0.791
After adjusted	1.379	26	0.094	0.984	0.959	0.017	0.031	0.990	0.995	0.983

From the above table, the model-fit indices showed that the values of Cmin/df (10.863), df (41), p-value (0.000), GFI (0.812), AGFI (0.697), SRMR (0.046), RMRSEA (0.157), TLI (0.738), CFI (0.805) and NFI (0.791) were unacceptable because it was below the recommendation of model-fit indices. Due to the unfit values, the study employed the modification indices to modify the model. The model was modified until it become acceptable. After the model adjustment, the result indicated the acceptable values including Cmin/df (1.379), df (26), p-value (0.000), GFI (0.984), AGFI (0.959), SRMR (0.017), RMRSEA (0.031), TLI (0.990), CFI (0.995) and NFI (0.983).

**Table 5** Standardized Coefficient, Standard Error, Critical Value, p-Value of the Tested Model

Variables			Standardized Coefficient	S.E.	C.R.	P-value
TRI	--->	SKW	0.549	0.058	9.241	***
TRI	--->	SKM	0.439	0.056	7.469	***
TRI	--->	SKL	0.430	0.056	7.220	***
SKW	--->	PER	0.645	0.144	3.843	***
SKM	--->	PER	0.224	0.086	2.302	.021
SKL	--->	PER	0.178	0.057	2.832	.005

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PER: Employee Performance

From the above table, the study showed the positive summary of standardized estimate, standard error, critical value (t) as well as the p-value. This expressed that the direction of organizational training on employee skills in terms of working skills, managing skills and leading skills and direction of employee skills on employee performance were significant level at 0.05 with standardized coefficient ranged from 0.178 to 0.645. In addition, the standard error values were between 0.056-0.144 and critical values were ranged from 2.302 to 9.241.



## Hypotheses Examination

Next, the researchers tested the proposed hypotheses, which the results were displayed as follows.

*Hypothesis 1: Organizational training practices had a positive influence on employees working skills.*

From the study, the result indicated that organizational training practices had a positive influence on employees working skills with standardized coefficient as of 0.549, standard error as of 0.058 and critical value as of 9.241 at the statistically significant level as of 0.001. Therefore, the hypothesis is accepted.

*Hypothesis 2: Organizational training practices had a positive influence on employees managing skills.*

From the study, the result indicated that organizational training practices had a positive influence on employees managing skills with standardized coefficient as of 0.439, standard error as of 0.056 and critical value as of 7.469 at the statistically significant level as of 0.001. Therefore, the hypothesis is accepted.

*Hypothesis 3: Organizational training practices had a positive influence on employee leading skills.*

From the study, the result indicated that organizational training practices had a positive influence on employee leading skills with standardized coefficient as of 0.430, standard error as of 0.056 and critical value as of 7.220 at the statistically significant level as of 0.001. Therefore, the hypothesis is accepted.

*Hypothesis 4: Employees working skills had a positive influence on employee performance.*

From the study, the result indicated that employees working skills had a positive influence on employee performance with standardized coefficient as of 0.645, standard error as of 0.144 and critical value as of 3.843 at the statistically significant level as of 0.001. Therefore, the hypothesis is accepted.

*Hypothesis 5: Employees managing skills had a positive influence on employee performance.*

From the study, the result indicated that employees managing skills had a positive influence on employee performance with standardized coefficient as of 0.224, standard error as of 0.086 and critical value as of 2.302 at the statistically significant level as of 0.021. Therefore, the hypothesis is accepted.

*Hypothesis 6: Employees leading skills had a positive influence on employee performance.*

From the study, the result indicated that employees leading skills had a positive influence on employee performance with standardized coefficient as of 0.178, standard error as of 0.057 and critical value as of 2.832 at the statistically significant level as of 0.005. Therefore, the hypothesis is accepted.

**Table 6** Total Effect, Direct Effect and Indirect Effect

Variables	Total Effect				Direct Effect				Indirect Effect			
	SKW	SKM	SKL	PER	SKW	SKM	SKL	PER	SKW	SKM	SKL	PER
TRI	0.549	0.439	0.430	0.529	0.549	0.439	0.430	-	-	-	-	0.529
SKW	-	-	-	0.645	-	-	-	0.645	-	-	-	-
SKM	-	-	-	0.224	-	-	-	0.224	-	-	-	-
SKL	-	-	-	0.178	-	-	-	0.178	-	-	-	-

Note: TRI: Organizational Training Practices, SKW: Working Skills, SKM: Managing Skills, SKL: Leading Skills, PER: Employee Performance

From the table, the study revealed that TRI had total effect and direct effect on SKW, SKM and SKL with standardized-coefficient value as of 0.549, 0.439 and 0.430, respectively. In the meantime, TRI had indirect effect on PER with standardized-coefficient value as of 0.529. In addition, SKW, SKM and SKL had total and direct effect on PERP with standardized-coefficient value as of 0.645, 0.224 and 0.178, respectively at the significant level as of 0.001.

## Conclusions

According to the study of “Creating Employee Working Skills and Performance through Organizational Training Practices in Tire Manufacturing Company”, the researchers can discuss the result based on the study objectives as follows.

*Objective 1: To study organizational training, employee working skills and employee performance in Tire Manufacturing Company.*

Regarding the study, the points indicated that employees in the tire manufacturing company located in Pathumthani Province had opinion towards the organizational training practices, employee working skills and employee performance in the high level. This is because is very crucial for the organization to use the knowledge and skills in working in the manufacturing company which it requires specific knowledge, skill and competence such as working standard, safety policy and method, chemical safety in usage, and technology change and implementation so that the employees in the organization can update their knowledge and capability. The study also corresponds with the study done by Pattanaik, Mishra and Dash (2017), who study about the training for development: a comparative analysis of employees on service and industrial sector and found that the manufacturing companies requires different training and development characteristics comparing to servicing companies (Pattanaik, Mishra, & Dash, 2017). Piñol, Porta, Arévalo, and Minguella-Canela (2017) demonstrated examples of manufacturing training practices including product and process design and manufacturing training, production management and logistics training, automated and robotized manufacturing training, manufacture, technologies training of the industry, and languages

communication training. When the employees feel that they can fulfill their necessary work knowledge and ability, they will feel more confidence in working, create work quality and work quality and build string interpersonal relationship among their organizational members. This then can also create the organizational performance such as customer satisfaction, organizational competitiveness, organization innovation, organizational learning and organizational growth (Ipe, 2003; Vinesh, 2014).

*Objective 2: To investigate the cause-effect relationship of organizational training on employee working skills and employee performance in Tire Manufacturing Company.*

From the study, the result revealed that organizational training practices had total effect and direct effect on employees working skills, managing skills and leading skills and had indirect effect on employee performance both in terms of personal level performance and organizational level performance. This is because is that the knowledge, especially in the field related to works and assigned responsibility, is very important for all employees in the organization that they must keep learning (Rodriguez & Walters, 2017). It can be said that the more the employees in the organization can learn, the more the skills of working and related knowledge increased. In addition to the changing world where the technology is advanced and more competition driving organization's competence, many organizations including manufacturing companies are required to improve their capital employees, updating their knowledge and re-skilling their skills (Ongori, & Nzonzo, 2011). From this study, the result revealed that the knowledge and skills to be used in this kind of tire manufacturing works can be related to risk management, accident notification and avoidance, safety working standard related to chemical substances, technology usage such as Barcode, TAG, and Lift Truck as well as first aid assistance in the organization. Moreover, after the understanding of knowledge and practices of related workshop was provided by the company, the employees had expressed their confidence in working, performed the works according to company goals as well as inspired their colleagues to work harder and better. The result of this study corresponds with the study done by Piñol, Porta, Arévalo, and Minguella-Canela (2017), who studied about the training needs of industrial companies in the Barcelona area and proposal of training courses and methodologies to enhance further competitiveness and the result mentioned that manufacturing training practices can include product and process design and manufacturing training, production management and logistics training, automated and robotized manufacturing training, manufacture, technologies training of the industry, and languages communication training. The study also advocated that the right training program can create the better employee performance and organization performance (Piñol, Porta, Arévalo, & Minguella-Canela (2017).

*Objective 3: To investigate the cause-effect relationship of employee working skills on employee performance in Tire Manufacturing Company.*

In the respects to the study, the result revealed that employees working skills, managing skills and leading skills had a positive effect on employee performance both in terms of personal level performance and organizational level performance. The result was revealed in this way because working in the manufacturing companies where practical knowledge and skills, especially related to

working on the assigned works, managing risks, conflicts and working plan, as well as leading and inspiring colleagues, are required to accomplish the target works, goals and plans collaboratively. When the employees' related knowledge and working, managing and leading skills are formed, the employees' ability, confidence, interpersonal relationship as well as competence can produce work quality, quantity and efficiency. Finally, they can achieve their working objectives and reach the organizational production place which can then serve the customers on time with the right quantity and quality, leading to creating organizational reputation. The result of this study corresponds with Katz (1974) who identified that the right training can create the right skills, which it can classify into technical, interpersonal, and abstract thinking skills covering ability to accomplish the job, have a good relationship with others and work with creative ideas. In addition, Rodriguez and Walters (2017) indicated another where the skills can be created covering technical, mental and functional skills. This can help employees achieve the production and service activities from the right and strategic training. When the employees obtain the skills created by the organizational training, they can then perform the work well, satisfying the customers and creating organizational growth and others (Hameed, & Waheed, 2011; Nda, & Fard, 2013).

## **Recommendation**

### **For practitioners**

According to the study discovering that organizational training practices had a direct effect on working skills, managing skills, and leading skills and an indirect effect on employees' performance, and the working skill, managing skill and leading skill had a direct effect on employees' performance, the study recommendation can be therefore detailed several implications. Firstly, the company and managers in similarity of the tire manufacturing company can prepare the training practices and contents such as working standard, safety policy and method, chemical safety in usage, and technology change and implementation, for the employees in the organizations. Secondly, the organizations should emphasize and prioritize the importance on working skill, managing skill and leading skill such as how to work, how to use technology, how to inspire subordinates, how to manage the conflicts, how to build good relationship among the organizational members by establishing the organizational training policy matching with organizational objectives, mission, characteristics and values.

### **For future study**

There are some limitations on this study; therefore, the future research execution can focus following points. Firstly, the future research can extend the study area into another industry since this study emphasized on tire manufacturing company only. Secondly, the data obtained in this study was derived from only single company, which it may limit the study result generalization because some variables such as organizational culture, product characteristics and organizational characteristics, are

limited. Thirdly, the next research should also apply another research approaches such as qualitative or mix method by implementing in-depth interview or focus group, in order to obtain the insights regarding organizational training practices since this study applied only quantitative approach with utilizing questionnaire survey as a data collection tool. Lastly, other extended variables such as organizational motivation, working environment, personality traits and characteristics as well as corporate identification can be listed of possible areas that can act as antecedent or moderate factors affecting employees' performance.

## References

- Ackah, D. (2014). The impact of motivation on employee performance in the manufacturing industry in Ghana. *Global Journal of Management Studies and Researches*, 1(5), 291-310.
- Agarwal, H., & Agarwal, R. (2017). First Industrial Revolution and Second Industrial Revolution: Technological differences and the differences in banking and financing of the firms. *Saudi Journal of Humanities and Social Sciences*, 2(11), 1062-1066.
- Arbuckle, J. L. (2011). *Amos 20 user's guide*. Chicago, IL: SPSS Inc.
- Chaimongkol, N., Chienwattanasook, K., Onputtha, S., Sookwilai, N., & Pongwang, N. (2018). Employees' Job Satisfaction and Employees' Desirable Behavior Affecting Employees' Work Performance: A Case of Christiani & Nielsen (Thai) Public Company Limited. *Journal of Interdisciplinary Research: Graduate Studies*, 7(2), 105-117.
- Hajiar, S. T. (2014). A statistical study to develop a reliable scale to evaluate instructors within higher institution. *WSEAS Transactions on Mathematics*, 13, 885-894
- Hameed, A., & Waheed, A. (2011). Employee development and its affect on employee performance a conceptual framework. *International journal of business and social science*, 2(13), 224-229.
- Hans, V. B. (2019). Global Business and Cross-Cultural Diversity: Globalisation and Business Changes and Values. *NOLEGEIN-Journal of Global Marketing*, 18-31.
- Hills, R. L. (1970). Sir Richard Arkwright and his patent granted in 1769. *Notes and Records of the Royal Society of London*, 24(2), 254-260.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Ipe, M. (2003). Knowledge sharing in organizations: A conceptual framework. *Human resource development review*, 2(4), 337-359.
- Katz, R. L. (1974). Skills of an effective administrator. *Harvard Business Review*, 52(5), 90-102.
- Nda, M. M., & Fard, R. Y. (2013). The impact of employee training and development on employee productivity. *Global journal of commerce and management perspective*, 2(6), 91-93.
- Neawchumpa, N., Ponathong, C., & Skulkhu, J. (2016). A Factor Analysis of Scientific Attitude of Science Students of Public Universities in Bangkok. *Veridian E-Journal, Silpakorn University*, 9(3), 1676-1691.

- Ongori, H., & Nzonzo, J. C. (2011). Training and development practices in an organisation: an intervention to enhance organisational effectiveness. *International Journal of engineering and management sciences*, 2(4), 187-198.
- Pattanaik, B. K, Mishra, S. & Dash M. (2017). Training for Development: A Comparative Analysis of Employees on Service and Industrial Sector. *International Journal of Economic Research*, 14(10), 1-5.
- Piñol, T. C., Porta, S. A., Arévalo, M. R., & Minguella-Canela, J. (2017). Study of the training needs of industrial companies in the Barcelona Area and proposal of Training Courses and Methodologies to enhance further competitiveness. *Procedia Manufacturing*, 13, 1426-1431.
- Rodriguez, J., & Walters, K. (2017). The importance of training and development in employee performance and evaluation. *World Wide Journal of Multidisciplinary Research and Development*, 3(10), 206-212.
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological science in the public interest*, 13(2), 74-101.
- Sukortpromme, S., Onputtha, S., & Manorah, P. (2019). Relationship between Technological Service Quality and Employees' Work Performance: A Case of an Electronics Manufacturing Solutions Provider Located in Pathum Thani, Thailand. *8th National and 1st International Conference on Innovative Management Science for Sustainable Society* on 8th February (p. 384-393). Nakhon Sawan: Nakhon Sawan Rajabhat University.
- Sukortprommee, S. (2013). *The Effect of Corporate Brand Personality on Customer-Contact Employee's Prosocial Behavior and the Mediating Effect of Brand Identification in Japanese Automotive Service Sector*, (Doctoral dissertation, Rajamangala University of Technology Thanyaburi)
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (Vol. 5). Nedham Heights, MA: Allyn & Bacon.
- Tann, J., & Breckin, M. J. (1978). The International Diffusion of the Watt Engine, 1775-1825. *The Economic History Review*, 31(4), 541-564.
- Teryima, S. J., Timothy, A. T., Faajir, A., John, E., & Vivien, U. (2016). Motivational factors as determinants of employee commitment and performance enhancement in profit oriented firms: A survey of selected brewery manufacturing companies in Nigeria. *International Journal of Business and Economic development*, 4(2), 112-129.
- Vinesh, K. (2014). Role of training & development in an organizational development. *International Journal of Management and International Business Studies*, 4(2), 213-220.
- Yamane, Taro. (1973). *Statistics: An Introductory Analysis*. 3rded. New York: Harper and Row Publications.

# **THE EFFECT OF DEMOGRAPHIC FACTORS ON PEOPLE'S MOTIVATION IN EXECUTING HOUSEHOLD ACCOUNTING**

**Attapong Teerakanon<sup>1</sup>**

Department of Accounting and Finance, Faculty of Business Administration,  
Rajamangala University of Technology Thanyaburi

## **Abstract**

This research aimed at 1) studying the people's demographic factors and motivation for household accounting execution and 2) comparing the motivation in household accounting execution classified by people's demographic factors in Thanyaburi District, Pathum Thani province. The samples were of 137 people living in Thanyaburi municipality, Pathum Thani. The data collection employed questionnaires with purposive sampling and convenience sampling method. The statistics used in data analysis included descriptive statistics covering frequency, percentage, mean, and standard deviation and inferential statistics covering the Independent Sample t-test and One-Way ANOVA at the statistical significance level of 0.05.

The results showed that most respondents were female, aged 20 - 29 years old, were student, graduated from bachelor's degree, earned between 10,001 - 15,000 baht and expensed between 5,000 and 10,000 baht. People had opinion about motivation in household accounting execution in terms of benefits, patterns and methods and support from government agencies and others in high level. After hypothesis testing, the study revealed that people with different demographic factors in terms of age, education, monthly household income and monthly household expenditure had motivation toward benefits, patterns and methods and support from government agencies and others differently at the statistically significant level as of 0.05.

**Keywords:** Demographic Factors, Motivation, Household Accounting Execution, Governmental Support

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<sup>1</sup> Rajamangala University of Technology Thanyaburi, 39 Moo 1, Klong 6, Khlong Luang Pathum Thani, 12110  
E-mail: attapong\_t@rmutt.ac.th

## **Introduction**

Household accounting is to record daily incomes and expenses in each day, week, month, and year in order that it can view the overall family income and expenses. Indeed, successful household accounting requires a learning process, which consists of being aware of problems and finding the related solution. In order to execute the household accounting successfully, the learning process should be adopted (Wutchindanon, 2016). When the household accounting was successfully conducted, the household accounting conductor will know and update sources of income and expenses. It can finally enable to analyze the financial situation of the family (Thananawat, 2013), leading to reduce expenses, increase income, save environmental resources (Wichian, 2016). However, household accounting also encounters with obstacles in the preparation of household accounting conduction because there is a lack of understanding in executing the household accounting (Tonrub, 2008) being consistent with Mongkol (2009). Most people in the communities do not record household accounts because of lack of understanding in household accounting and lack of motivation about household accounting as well as lack of a good attitude towards accounting (Chanthanon et al., 2018). In addition, it also lacks the support from the government and related agencies (Thananawat, 2013). Less household accounting will lead to a lack of financial management plans, which will result in increasing household debt. Based on the survey of current household debt problems, it was found that 74.80% of households have debts. Most of the debts is from assets purchased (36.90 percent) and 32.20 percent for daily expenses (The Economic Forecasting Center Exploration and Business University of the Chamber of Commerce, 2014).

From this, it is very important to study the motivation for setting up household accounting because motivation is a force that drives people to behave in response to stimuli and to set directions and goal. People with high motivated behavior will try to do various things and achieve the goal. In this research, the result will show motivation for setting up household accounting, which it finally can contribute the guideline and direction to promote the household execution in the villages and communities, being beneficial for family, community, society as well as nation.

## **Objectives**

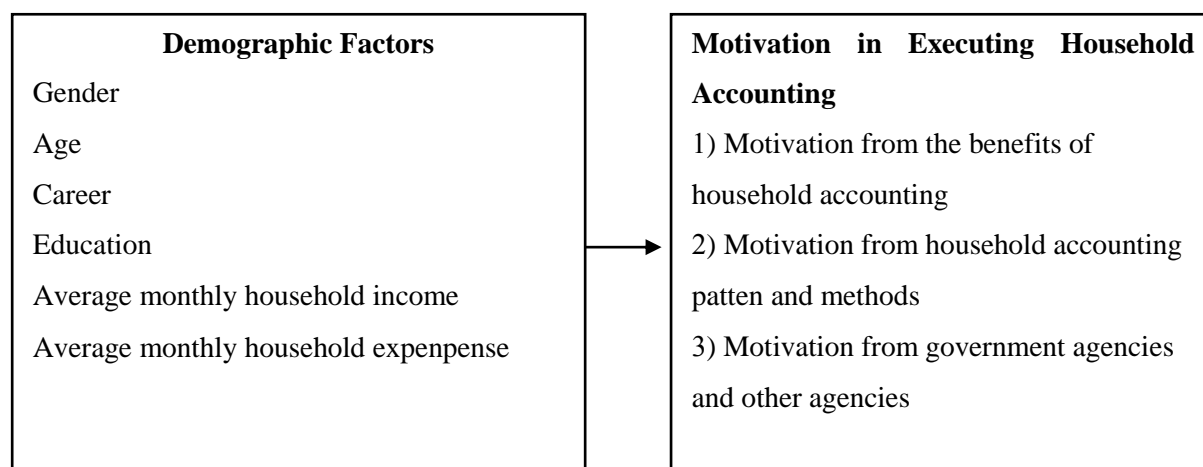
1) to study demographic factors: gender, age, career, educational level, average monthly household income and average monthly household expense, and motivation to execute the household accounting in terms of benefit, pattern and method and support from the governmental agencies.

2) To compare differences in motivation to execute household accounting of people in Pathum Thani Province categorized by demographic factors: gender, age, career, educational level, average monthly household income and average monthly household expense.



## Conceptual Framework and Hypotheses

### Conceptual Framework



**Figure 1** Research Conceptual Framework

### Hypotheses

Hypothesis 1: People in Thanyaburi district, Pathum Thani Province with different gender had different motivation in executing household accounting.

Hypothesis 2: People in Thanyaburi district, Pathum Thani Province with different age had different motivation in executing household accounting.

Hypothesis 3: People in Thanyaburi district, Pathum Thani Province with different career had different motivation in executing household accounting.

Hypothesis 4: People in Thanyaburi district, Pathum Thani Province with different education level had different motivation in executing household accounting.

Hypothesis 5: People in Thanyaburi district, Pathum Thani Province with different average household income per month had different motivation in executing household accounting.

Hypothesis 6: People in Thanyaburi district, Pathum Thani Province with different average household expense per month had different motivation in executing household accounting.

### Concepts, Theories, and Related Research

#### Concepts of household accounting

Accounting means the collection of financial information, which starts from recording, classifying, analyzing, and then creating various financial reports in order to use the information from these reports for further management and decision making (Sinnpinya, 2011). A household accounting is a record of personal income and expenditure, which also include the cost of production of small businesses in order to be aware of expenditures and incomes of the people or operators (Sinnpinya, 2011), which is consistent with Chanthanon et al. (2018) who advocated that household

accounting is to regularly record daily income and expenses in each day, week and month in order to see the movement in terms of how, why and when income and expenses are used. The Federation of Accounting Professions under the royal patronage (2014) mentioned that the result of accounting is to provide financial information that is useful for decision making. Indeed, the household accounting is necessary to consider the learning process for household accounting, which consists of being aware of problems and finding a way to fix it. The family needs to know the problems of household accounting execution by analyzing the problems that occur in the family and after that they need to find a solution to the problem. The solution can include household accounting training in order to how to execute and assess the effective household accounting (Wutchindanon, 2016). The benefits of household accounting are numerous, such as knowing the source of income and expenses that occur and then analyze the financial situation of the family (Thananawat, 2013), with an appropriate approach (Khotcharat, 2012) that can reduce expenses and increase income as well as conserve valuable resources (Wichian, 2016). Nevertheless, conducting the household accounting encounters with obstacles in the preparation of various household accounting, such as people lacking understanding of household accounting (Welcoming, 2008), consistent with Mongkol (2009) advocating that most of communities do not record household accounts because of lack of understanding in household accounting. Meanwhile, Chanthanon et al. (2016) said that the obstacles in creating household accounts are the behavior of the people that are still not cooperating in the preparation of their own household accounting since it is considered complicated and difficult. This is in accordance with Lomchimplee (2014) which stated that the preparation of household accounts was complicated. In addition, households do not want to disclose income and expense information as well as they cannot remember their income and expense transaction.

### **The concept of motivation in executing household accounting**

Motivation is the power to motivate people to behave in response to the temptation and to set the direction and goal of such behavior. People with high motivation will try to do various things, to achieve the goal without abandoning. However, people with low motivation will not show behavior for keeping their goals or sometimes they will stop their work. In addition, motivation also means the desire to do something. Motivation can be divided into two parts: positive motivation and negative motivation (Robbins & Everitt, 1996). The motivation has important components: 1) needs, which is a state of scarcity, 2) driving, which means impulse or momentum that occurs both from the inside and the outside. The inside or internal motivation means the motivation arises internally from reasons within one's self, which is the motivation for self-satisfaction, not because of the fear caused by that, but it can also be a reward from self's action or behavior. In the meanwhile, the external motivation refers to external factors that entice or inspire self's action to complete or achieve the goal. A persons who was motivated by external factor will be inspired by reward distribution or they will receive something in return when they can reach a curtain goal. The motivation has resulted in behavior in the preparation of household accounting consuction (Poomcharoen, 2016), which may include

understanding and attitude about household account management (Thippayasothi, 2016). Household accounting according to the sufficiency economy approach for sufficient life can enable the family to have a better quality of life (Thananawat, 2013). Preparation of household accounting can also help save money and help be aware of financial transactions including income and expense (Lomchimplee, 2014), which it was promoted (Silaparasamee, 2015). In addition, the household accounting can create the solution for poverty (Sawangwarodom, 2014) as well as accounting can be sustainable (Wutchindanon, 2017).

### **Research Methodology**

The population used in this study were people who conducted household accounting in the area of Thanyaburi district, Pathumthani Province. By employing Yamane (1973) by determining the confidence level at 95 percent and error level at 5 percent, there were 137 people, representing 43.22 percent, being selected. Purposive sampling and convenience sampling method were employed for the study. In data collection, the questionnaires with 2 parts were used as the research tool. Two parts of questionnaire can be divided into 2 parts including demographic factors: gender, age, career, education, monthly income per month and household expenditure per month, and motivation in executing household accounting: received benefits, pattern and process and governmental agency and support. The question items related to demographic factors were based on multiple choices with ordinal or nominal. In the meantime, motivation factors in executing household accounting were based on rating scale with scale. The rating scale included 5 levels: strongly agree, agree, moderate, disagree and strongly disagree.

In terms of data validity and reliability, the researcher used the Index of Item-Objective Congruence (IOC) by sending the question items to three experts in the fields in order to inspect the data validity. In the meantime, the researcher used coefficient of Conbach's Alpha in order to test the reliability of the research questionnaire derived from 30 sets of questionnaire distribution, which the coefficient of Conbach's Alpha should be higher than 0.70. After the study, the study revealed that the questionnaire had total coefficient of Conbach's Alpha as of 0.937. When separating by each dimension, motivation in executing household accounting: received benefits, pattern and process and governmental agency and support had Conbach's Alpha as of 0.855, 0.830 and 0.937, respectively. When the score is greater than 0.7, meaning that this set of questions can be used to analyze the data in order to have further analysis.

For data analysis, the researcher used descriptive statistics such as frequency, percentage, mean, and standard deviation as well as used inferential statistics such as the Independent Sample t-test and One-Way ANOVA with a statistical significance of 0.05 or 95% confidence level.

## Study Results

### Study of demographic factors

The results showed that from 137 respondents, most of them were female (94 persons, accounting for 68.6 percent), aged between 20 - 29 years old (55 people, accounting for 40.1 percent), were students (34 people, accounting for 24.8 percent), graduated from bachelor degree education (78 people, accounting for 56.9 percent), had average household income between 10,001 - 15,000 baht (32 people, accounting for 23.4 percent), and had average household expenses between 5,000 - 10,000 baht (37 people, accounting for 27 percent).

### Study of People's Motivation in Executing Household Accounting

The results of the study revealed that people in Thanyaburi, Pathumthani Province, had opinions towards motivation in executing household accounting in terms of benefits from household accounting in high level with mean score as of 3.76 (S.D. = 0.60) by giving importance to the question "Household accounting can help update income - expenditure status". Meanwhile, people had opinion towards motivation in executing household accounting in terms of pattern and process in high level with mean score as of 3.65 (S.D. = 0.60) by giving importance to the question "Having knowledge and understanding about household accounts can make household account accounting more accurate". Lastly, people had opinion towards motivation in executing household accounting in terms of governmental agency and support in also high level with mean score as of 3.46 (S.D. = 0.87), giving importance to the question "Obtaining the opportunity to invest some business".

### Hypothesis test results

The researcher will use the results from the model to test the equation as specified. The details are as follows.

**Table 1** Shows the results of hypothesis testing.

Demographic Factors	Motivation in Executing Household Accounting			
	Overall	Received Benefits	Pattern and Process	Governmental Agency and Support
<b>Gender</b>	t = -0.516 Sig. = 0.607	t = -0.558 Sig. = 0.578	t = -0.455 Sig. = 0.650	t = -0.354 Sig. = 0.724
<b>Age</b>	F = 3.082 Sig. = 0.018*	F = 2.727 Sig. = 0.032*	F = 3.027 Sig. = 0.020*	F = 2.624 Sig. = 0.038*
<b>Career</b>	F = 2.024 Sig. = 0.057	F = .816 Sig. = 0.576	F = 2.888 Sig. = 0.008*	F = 3.182 Sig. = 0.004*
<b>Education</b>	F = 4.646 Sig. = 0.000*	F = 6.053 Sig. = 0.001*	F = 4.974 Sig. = 0.000*	F = 2.873 Sig. = 0.008*
<b>Monthly income per month</b>	F = 2.548 Sig. = 0.023*	F = 1.914 Sig. = 0.083	F = 2.041 Sig. = 0.065	F = 3.212 Sig. = 0.006*

**Table 1** Shows the results of hypothesis testing. (Cont.)

Demographic Factors	Motivation in Executing Household Accounting			
	Overall	Received Benefits	Pattern and Process	Governmental Agency and Support
Household expenditure per month	F = 2.931 Sig. = 0.007*	F = 1.125 Sig. = 0.351	F = 4.039 Sig. = 0.000*	F = 4.062 Sig. = 0.000*

From the Table 1, it was found that people with different age, education, Monthly income per month and household expenditure per month had different overall motivation in executing household accounting. When considering into each dimension, it was found that people with different age and education had different motivation in executing household accounting in terms of received benefits. Meanwhile, people with different age, career, education, and household expenditure per month had different motivation in executing household accounting in terms of pattern and process. Lastly, people with different age, career, education, monthly income per month and household expenditure per month had different motivation in executing household accounting in terms of governmental agency and support at the significant level as of 0.05.

## Conclusion and Discussion

From the study of demographic characteristics, it was found that a total of 137 questionnaires, most of them were female (94 persons, accounting for 68.6 percent), aged between 20 - 29 years old (55 people, accounting for 40.1 percent), were students (34 people, accounting for 24.8 percent), graduated from bachelor degree education (78 people, accounting for 56.9 percent), had average household income between 10,001 - 15,000 baht (32 people, accounting for 23.4 percent), and had average household expenses between 5,000 - 10,000 baht (37 people, accounting for 27 percent). This because most people who conducted the household accounting were housewives or their daughter who have more time, knowledge and know how much that have been spent per day. Also, people in Thanyaburi District Pathum Thani Province are also working as private employees, farmers and students since this area of Pathumthani consisted of industrial zones, universities from public and private sectors and farms. Even though Pathumthani has more industrial zones, and universities zone, but the cost of living is not high, which people can spend less money to get certain things.

The results of the study of opinions regarding the motivation for household accounting, in terms of benefits, format and methods in conducting household accounting and motivation from governmental agencies in high level. This means that most people in the studied area have knowledge in conducting household accounting since it can be beneficial for household members to accurately trace their income and expenses. However, there should be a support from the governmental agencies

or business corporations to create some events or activities to motivate people to be interested in having household accounting.

From the study of demographic factors identifying whether people who have different characteristics will have different motivation for conducting household accounting, the result indicated that different demographic factors including age, education level, average household income per month, average household expenditure per month affected different motivation for continuous household accounting. This is because people with different age, education level, average household income per month, average household expenditure per month will have different opinions towards the financial usage. In addition, the older people will understand that there should be the right time to keep the information of income and expenses in order to save money to be used for other purposes. However, people with different gender, and occupation will have no different motivation for having household accounting. This is because gender and occupation factors do not have a significant influence on the motivation that leads to conduct the household accounting, which corresponds to Robbins and Everitt (1996) who mentioned that motivation is important for making one action successful. For the motivation, it can consist of 1) needs and 2) motivation, which are will be differed by each person characteristics such as age, education level, and household income. In addition, it is consistent with Thippayasothi (2016) who found that knowledge and understanding about household account management arising from individual households is a factor that results in motivation to conduct the household accounting. Finally, motivation from government agencies is also an important incentive for household accounting, such as the promotion of household accounting (Silaparasami, 2015).

### **Recommendation from research**

From the said study results, involved community responsible persons, governors from government agencies, or education from schools or universities should present the benefits of household accounting and how-to knowledge by proving such as training to do simple accounting to community so that they can know how to execute the household accounting. Related to the study result, it is recommended that people who are working as agriculturalist, and students and private employees are more willing to learn how to about household accounting execution. In addition, people who have higher education level (bachelor's degree) are recommended to do household accounting.

### **Recommendation for future study**

For future studies, the interested researchers firstly may have expanded the sample size in order to provide more clear information. Secondly, the researchers should collect additional data by using in-depth interviews in order to received insight related to household accounting conduction. Thirdly, the researchers should study the problems and obstacles conducting the household accounting

in the villages because there are still few people interested in setting up household accounting in their house. Lastly, the researchers should study about how to use the technology such as mobile phone applications, computers, tablets and others since now it is the era of technology and digitalization, which finally can help create more conduction of household accounting.

## References

- Chanthanon, J., Kulakul, S, Nuengsittha, N., & Rueangchan, N. (2018). Factors affecting household accounting in Huay Yang Subdistrict, Mueang Sakon Nakhon District, Sakon Nakhon Province. *Academic Journal of Suvarnabhumi Institute of Technology*, 3(2). 153-167
- Economic and Business Forecasting Center, University of the Chamber of Commerce. (2014). Status of household debt.
- Federation of Accounting Professions under the royal patronage. (2014). *Conceptual framework for financial reporting (adjusted 2014)*. Accessed on 15 July 2015 from [http://www.fap.or.th/images/column\\_1359010309/framework\\_clean-PostWeb\\_Up\\_031057.Pdf](http://www.fap.or.th/images/column_1359010309/framework_clean-PostWeb_Up_031057.Pdf).
- Khotcharat, P., Ratniyom, O., Cheychit, R., Fuangfuulskul, P., Wongrattanachai, T., & Satanuwat, W. (2012). *An analysis of household income and expense accounts, Ongkarak Sub-district, Ongkarak District, Nakhonnayok Province* (Research Report). Bangkok: Srinakharinwirot University.
- Lomchimplee, K. (2014). *Factors affecting public house accounting in Ban Pak Khlong, Bang Pho Nuea Community, Pathum Thani Province*. (Master's thesis, Rajamangala University of Technology Phra Nakhon).
- Mongkolsamai, W. (2009). *Accounting knowledge management based on sufficiency economy concepts* (Research report), Chiang Mai: Chiang Mai Rajabhat University.
- Phumcharoen. P. (2016). *Factors affecting farm income and expense accounting and guidelines for promoting farmers to have an appropriate income and expense accounting*. (Master's thesis, Thammasat University).
- Robbins, T. W., & Everitt, B. J. (1996). Neurobehavioural mechanisms of reward and motivation. *Current opinion in neurobiology*, 6(2), 228-236.
- Rueangsinpinya, P. (2011). Household accounting, a near story, but is overlooked. *Journal of Management Science and Information Science Naresuan University*, 7(1), 20-28.
- Sawangworot, A. (2014). Guidelines for creating household accounts for solving the poverty of villagers in Huai Chorakheam District, Mueang District, Buriram Province. *Journal of Research and Development Buriram Rajabhat University*, 9(2), 30-39.
- Sillaparasami, K. (2015). *The study of household accounting promotion organization: A case study of rubber plantation farmers in Bang Khan Subdistrict, Bang Khan District, Nakhon Si Thammarat Province*. (Master's thesis, Dhurakij Pundit University).

- Thananawat, P. (2013). *Household accounts according to the sufficiency economy guidelines for sufficient lives* (Research Report), Phra Nakhon Si Ayutthaya: Phra Nakhon Si Ayutthaya Rajabhat University.
- Thippayasothi, N. (2016). Understanding and attitude of people in household accounting, Phra Nakhon Si Ayutthaya Province. *The 1st Rajamangala University of Technology Suvarnnabhumi National Conference* (pp. 941-952). Phra Nakhon Si Ayutthaya: Phra Nakhon Si Ayutthaya Rajabhat University.
- Tonrub, S. (2008). *Household Accounting for Farmers, Bank for Agriculture and Agricultural Cooperatives Clients in Chiang Mai Province* (Research Report). Chiang Mai: Chiang Mai University.
- Wichian, D. (2016). Effectiveness of household account management of Phunphin District, Surat Thani Province. *Journal of Nakhon Ratchasima College*, 10(1), 295 – 311.
- Wutchindanon, S. (2017). A study of learning processes for sustainable household accounting for farmers. *Journal of Community Development Research (Humanities and Social Sciences)*, 10(3), 61-69.
- Yamane, T. (1973). *Statistics: An introductory analysis*. 2nd Ed., New York: Harper and Row.



# **STUDY TO DRIVING BEHAVIOR OF MOTORCYCLE SAFETY IN THE CITY OF RATCHABURI PROVINCE, THAILAND**

**Weerawan Pinchumpholsang<sup>1</sup>**

Industrial Management Department, Doctor of Business Administration,  
Rajamangala University of Technology Rattanakosin, Thailand

## **Abstract**

This research aimed to study factors related to the behavior of motorcyclist safety of residents in the city of Ratchaburi Province. The samples in this research were people who ride a motorcycle in the city of Ratchaburi Province. The questionnaire was used to collect data. The statistics used for data analysis include the frequency, percentage, mean, standard deviation, independent sample -test and One-way ANOVA. The results showed that most of the samples were male, graduated from elementary /secondary education level, aged between 21-40 years old, were single, lived in the city of Ratchaburi Province. Most people concern on awareness of accident prevention behaviors, which consisted of enforcement and legal regulation, behavior for motorcycle riding and risky behavior, and perceived level. hypothesis testing found that difference in gender, education, and period of license or driving license affected different level of awareness of accident prevention behavior at the statistically significant level as of 0.05.

**Keywords:** Safety Drive, Motorcycle Riding, Ratchaburi Province

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<sup>1</sup> Rajamangala University of Technology Rattanakosin, 96 Moo 3 Thanon Phutthamonthon Sai 5 Salaya, Phutthamonthon, Nakhon Pathom 73170 E-mail: Veerawanp75@gmail.com, Weerawan.pin@RMUTR.ac.th

## **Introduction**

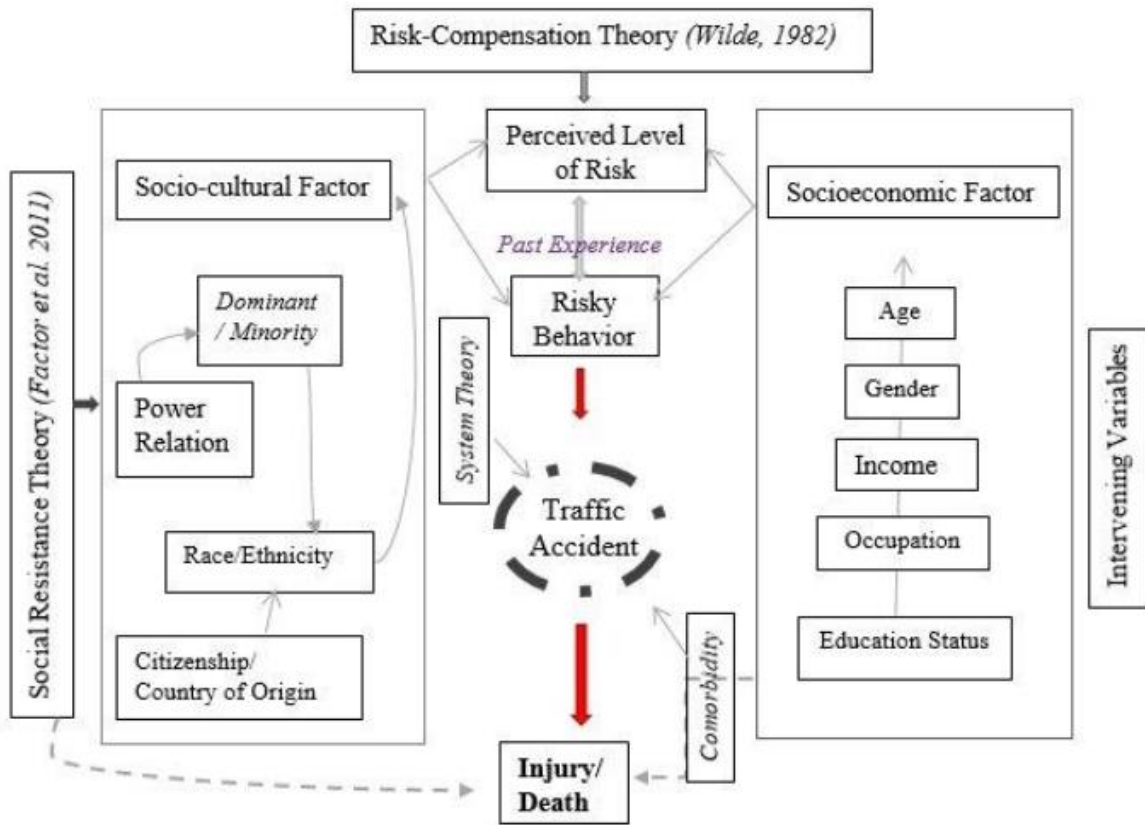
Accidents are the loss of Thailand that has increased rapidly and continuously. In particular, road traffic accidents are the number-one cause of death for all accidents. The statistics of road traffic cases in Thailand in 2014 have reported property damage caused by an accident in Thailand worth up to 1,241 million baht. In addition, the Medical Coordination Office, Department of Medical Affairs said that the loss of traffic accidents that often occur at a young age. Thailand Development Research Institute (TDRI) has calculated the loss of property, income and production of the deceased and disabled throughout life expenses for medical treatment and income lost during medical treatment and recuperation appears that Thailand has an economic loss of approximately 61,079 to 92,290 million baht per year or an average of 7-10 million baht per hour. Statistical data in various fields and from a preliminary study on motorcyclist behavior of people in Mueang District, Ratchaburi Province, Thailand, found interesting information that, in each year, there are 12 - 15 cases per year have accidental deaths from motorcycle; about 40 percent slightly injured from motorcycle and 90 percent received hospital treatment.

According to the aforementioned information, the researcher envisaged the importance study about the safe driving behavior to find the factors related to safe motorcycle driving behavior. The study was conducted in Mueang District, Ratchaburi. The result obtained from this study can help related persons to obtain the factors that finally can prevent and reduce the number of accidents derived from motorcycle riding.

## **Literature Review**

### **Concept of Risk- Compensation Theory**

This study uses two complementing theories to understand fatal road accident in relation to inter-group risk. Figure1 presents how sociocultural and socioeconomic factors are associated with road traffic accident and the resultant outcomes, and death/injury. Risk-compensation theory developed by a Canadian psychologist (Wilde, 1982). The acceptable risk was based on some predetermined cost and benefit of their action. Factors of impulsivity, sensation-seeking and attitudes toward dangerous driving but dissipates with age (Richer & Bergeron, 2012). The theory proposed that most minority groups tend to act unlawfully, and they develop everyday resistance practices that include various unhealthy behaviors. As it appears in Figure 1, some behaviors such as breaking traffic laws, abuse of drug and alcohol are common resistance practices among non-dominant minorities. Risk culture varies geographically among countries and within a country. Sociologist defined culture as the 'knowledge, beliefs, art, ethics, law, and all other abilities and habits necessary for a person to be a member of society' (Factor, Mahalel, & Yair, 2007). Cultural background influences how people behave in a society. Past studies affirmed that cultural differences among drivers have varying implications in terms of driving behavior and accident risk (Hayakawa, Fischbeck, & Fischhoff, 2000; Herrero-Fernández et al., 2016; Özkan, et al., 2006).



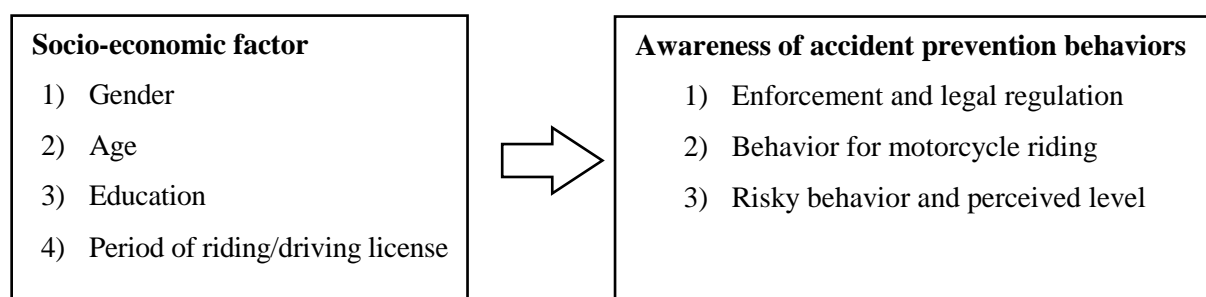
**Figure 1** Road Traffic Accident Framework using Social Resistance Theory and Risk-compensation Theory.

### Concept of Traffic Accidents

Traffic accidents are considered one of the most important problems in society today which has been causing impacts on economy, society and public health. From the study of the cause of the traffic accident analyzed and classified according to gender, date, time and location, as well as behavior of the injured persons, found that the accident is not a coincidence to has summarized the 2 causes of accidents; (1) Unsafe act is including various behaviors such as carelessness, teasing of inappropriate things and violation of regulations laid down. Especially, this cause has a resulted from the character or attitude each person who is awakened, buried, or taught in a different environment. The effected of accident is causing different levels of precaution for the safety of each person; (2) Unsafe Condition has environment for traffic that may cause accidents, such as slippery roads, insufficient lighting along of curves road, rough roads and broken rear light of car. These are for example Unsafe conditions are physical causes of an accident that can be resolved more easily than behavioral problems (Lukjunyabarn, 1995; Lin, & Kraus, 2009; Moskal, Martin, & Laumon, 2012; Chumpawadee et al., 2015). Accident prevention and control guidelines have 3E consist of; (1) Education is a process of behavior modification that leads to safety. By properly educating about

safety in order to create conceptual values attitude leads to safe behavior; (2) Engineering is an operation involving technicians, the use of technology and various modern devices becomes to safe; (3) Enforcement and Legal regulation effort to decrease accident (Downing, & Iskandar, 1997). Research Literature is studying behavior modification in order to prevent motorcycle accidents by volunteer friends. The results show that the operation of health education by training a group of volunteers to change behavior preventing accidents from motorcyclists by theory of patterns of health beliefs and competence to determine activities. They change perception of decline the risk of accidents due to motorcycle accidents and good recognition results for implementation of recommendations. Expectations of one's own ability act in order to better than prevent accidents from driving motorcycle (Juthaphonkun, 1995). Mental variables and driving situations related to safe driving behavior of private motorists in Bangkok (Ariyapinyo, 1996). The results found that whether the driver has knowledge about safe driving and get more flexibility from traffic conditions or the condition of convenient roads to be affected for good attitudes towards safe driving behavior. Those driving behavior will have more careful than who are less awareness for safe driving behavior. Risk behavior for motorcycle accidents in Phuket Province found that 97.70% had risky behavior from motorcycle accidents such as talking mobile phone between driving, having more than 1 person sitting behind the motorcycle, wearing black overcoat while to drive at night. The factors that were found to be related to risk behaviors are gender, age, marital status, occupation, motorcycle accident from closely family members. Factors risk behaviors such as order of arrests, the frequency of drinking while driving, knowledge about traffic rules affected to driving accidents. Factors that do not correlate with risk behavior such as monthly income, driving experience, severe motorcycle accident of the rider and personality (Nakra, 1996). There is other study about preventing accidents from motorcyclists in Chonburi Province, Thailand (Lukjunyabarn, 1995). The results of the study revealed that knowledge and attitudes regarding accident prevention were at a medium level. The operation was good. Knowledge and practice compared the preventing motorcycle accidents between people who have had an accident and people who have never had an accident to be found that no difference. Both groups had knowledge and attitude is not different.

### Research Framework



**Figure 2** Using Theory adapt into Road Traffic Accident Framework at Ratchburi, Thailand

## **Methodology Research**

The population used in this research is general people who live in the Mueang District Ratchaburi Province. There is a total of 199,603 people can drive motorcycles (the Bureau of Forecasting Statistics National Statistical Office, 2014). The sample size used in the study was based on the concept of Yamane (1990, cited in Apomakon, 1996) at a 95% confidence level. Herewith there were 150 samples selected to be used in the study since the limitation of time and spending.

The instrument used in this research was a questionnaire which the researcher created by dividing the questionnaire into 4 parts as follows; 1) general information about the people with check list items, 2) motorcycle safe driving behavior with a Likert scale in 4 levels : routine, frequent, infrequent, never having positive and negative actions, 3) attitude of riding a motorcycle safely with a Likert scale with 3 levels: agree, unsure, disagree, and 4) awareness of accident prevention behaviors for safe motorcyclists with a Likert s scale of 5 levels: the highest, high, moderate, less, the least.

The questionnaires were created as a research tool by following the steps: 1) study criteria and methods for creating questionnaires and test the relevant documents, researches and theories based on the study objectives, 2) set dependent and independent variables by adapting the framework from the Road Traffic framework at Ratchaburi, Thailand, 3) bring the questionnaires to experts who are involved and have experiences in researches about safe driving behavior in order to score the validity of the questionnaire which the score of index of congruence was 0.93, 4) make corrections according to the comments from the experts in order to clarify the question items in the questionnaires, and 5) test the reliability of the questionnaires by using Coefficient Cronbach's Alpha.

In order to analyze the collected data, the researcher employed independent sample t-test and One-way ANOVA to compare their opinions towards motorcycle riders' behavior in terms of enforcement and legal regulation, behavior for motorcycle riding, and risky behavior and perceived level categorized by the factors related to gender, age, education and period of driving license. The result will be displayed in descriptive and tabulated form.

## **Results**

### **General information of respondents**

There were 150 samples taken into the study. As a result, the information can be displayed that most of the samples were male, graduated from elementary /secondary education level, aged between 21-40 years old, were single, lived in the city of Ratchaburi Province.

### **Motorcycle safe driving behavior**

From 150 questionnaires given to the sampled motorcycle riders, the result of the study related to riding motorcycle behavior can be given below. There are 79 persons or 52.70 percent having safe driving behavior by surveying the road condition before using the motorcycle. About 86 persons or 57.30 percent wear helmets and use straps while driving motorcycles regularly. About 59

persons or 39.30 percent rides motorcycle with more 1 pillion person. About 74 persons or 49.30 percent stop the motorcycle to let people walk across the street. About 67 persons or 44.70 percent use horns to signalize for continuing riding on the road when there are more motorcycles and cars. There are 74 persons or 49.30 percent slowing down the car to stop seeing the signal lights at the intersection turning yellow. There are 76 persons or 50.70 percent regularly slowing the motorcycle down to let the waiting car leave before. About 67 persons or 44.70 percent lowering the lights while driving motorcycles at nighttime. There are 79 persons or 52.70 percent giving light signals or hand signals when turning. About 83 persons or 55.30 percent riding slower when there is heavy rain. Before parking or stopping on the side of the road, there are 79 respondents or 52.70 percent giving a warning signal the cars which follow on the way. There are 62 respondents or 54.70 percent slowing down when arriving at separate way. About the 51 persons or 34.00 percent wear white shirts if they had to drive motorcycles at night.

### **Opinion towards awareness of accident prevention behaviors**

From the study associated with opinion towards awareness of accident prevention behaviors in terms of enforcement and legal regulation, behavior for motorcycle riding and risky behavior and perceived level, the study result indicated that the motorcycle riders agree on the mentioned dimension in the moderate level. When considering into significant point, motorcycle riders in Mueang District Ratchaburi had the highest score to agree with the safety motorcycle driving by correctly wearing a helmet when riding motorcycle to be reduce accident on the road average of 2.95 and the lowest score to agree with requesting a motorcycle driver's license may not be necessary for skilled riders with average of 2.37.

### **Result of Hypothesis Testing**

In order to oversee the comparison study about the motorcycle riders' behavior in terms of enforcement and legal regulation, behavior for motorcycle riding, and risky behavior and perceived level categorized by the factors related to gender, age, education and period of driving license, the researcher then employed independent sample t-test and One-way ANOVA. These two statistics can display the variables compared by each other's. The detail of the study can be displayed below.

**Table 1** Shows test results comparing T-test and F –test statistics.

	T-test		F-Test (One – way ANOVA)	
	Gender	Age	Education	Period of license or driving license
<b>Awareness of accident prevention behaviors</b>				
<b>Enforcement and legal regulation</b>				
1. Riding a motorcycle with more than 1 person is more likely to result in an accident than riding alone.	✓			
2. Driving a motorcycle by passing and crossing other vehicles immediately may cause an accident easily.	✓			
3. Riding monocycle with dressing sloppily or wearing long pants can lead to the accident easily because the cloth can easily get into the wheels of the vehicle.				
4. Motorcycle rider who ride the motorcycle through the red light can cause fatal accidents.			✓	
5. To prevent accidents from riding a motorcycle, the rider should follow the traffic rules.				
<b>Behavior for motorcycle riding</b>				
6. The fact that motorcycle riders can remove some of their motorcycle equipment, such as turn signals, rear-view mirrors, may be at risk of accidents.			✓	✓
7. Driving without pushing other vehicles can reduce the accidents.			✓	
8. Accident from driving a motorcycle can lead to the brain injury if the head get attack.	✓		✓	
9. Riding a motorcycle closely behind a truck may cause a serious accident.			✓	
10. Riding a motorcycle with higher speed can lead to accident than riding a motorcycle with lower speed.				

**Table 1** Shows test results comparing T-test and F –test statistics. (Cont.)

Awareness of accident prevention behaviors	T-test		F-Test (One – way ANOVA)	
	Gender	Age	Education	Period of license or driving license
<b>Risky behavior and perceived level</b>				
11. The accident related to motorcycle can affect the mental injury and family's sadness.			✓	
12. To prevent accidents, motorcycle rider should not ride when feeling of tired or drowsy.				
13. Riding a motorcycle should have only 1 ride pillion person because it makes the rider more stable and safer to drive than many pillion people.			✓	
14. To prevent accidents, alcohol should be avoided before driving a motorcycle.			✓	
15. While driving a motorcycle, the rider should not use a mobile phone because of the risk of accidents.			✓	✓
<b>Total</b>			✓	

From Table 1 showed that female had awareness of enforcement and legal regulation and behavior for motorcycle riding more than male. Motorcycle rider with higher education level had awareness all of enforcement, legal regulation and behavior for motorcycle and risky behavior and perceived level more than motorcycle rider with lower education levels. Motorcycle rider with highly experienced driving license had awareness behavior for motorcycle riding and risky behavior and perceived level more than the one with less experienced driving license. Lastly, motorcycle rider with difference in age had awareness behavior for enforcement and legal regulation, behavior for motorcycle riding and risky behavior and perceived level indifferently.

## Discussion

From the study, the researcher can discuss as following. Firstly, motorcycle riders with different gender had different awareness of accident prevention behaviors in term of behavior related to enforcement and legal regulation and behavior for motorcycle riding. This is because the characteristics and risk perception of male and female are different. Female is more likely to perceive the risk and avoid the risk, meanwhile the male is more likely to accept the risk and thriving for the



risk. This can be seen from various accidents that occur in Thailand which the number of getting accidents involved with male (Office of Transport and Traffic Policy and Planning, 2018). In fact, getting into risk sometime is good. For example, doing business and demanding to be successful requires people with risk perception and risk acceptance (Baird, & Thomas, 1985). However, it is not good when using with riding the motorcycle because it can create the death occurrence for themselves (Hayakawa, Fischbeck, & Fischhoff, 2000).

Secondly, motorcycle riders with different education level had different awareness of accident prevention behaviors in terms of enforcement and legal regulation, behavior for motorcycle riding and risky behavior and perceived level. The study also indicated that motorcycle rider with higher education level had awareness all of enforcement, legal regulation and behavior for motorcycle and risky behavior and perceived level more than motorcycle rider with lower education levels. This is because education can provide crucial information and knowledge related to the motorcycle accidents. Every school and educational institute always pinpoints the accidents and severity of the accidents which finally can create the motorcycle rider's mindset to be aware of the accident. In fact, not only school and educational institute, but also the other associated agencies of motorcycle accidents also play import roles in preventing and reducing the accidents from the motorcycle riding (Juthaphonkun, 1995; Lukjunyabarn, 1995; Lin, & Kraus, 2009; Moskal, Martin, & Laumon, 2012; Chumpawadee et al., 2015).

Thirdly, the motorcycle riders with different period of license or driving license had had awareness towards the behavior for motorcycle and risky behavior and perceived level. This is because the period of driving license can reflect the skills of riding as well as the experience in riding the motorcycle. They may know about how the accidents look like and they are more be aware of being such a person in that accidents. Therefore, the person with higher period of driving license perhaps aware of removing some of their motorcycle equipment, such as turn signals, rear-view mirrors or using a mobile phone during the time of riding the motorcycle because it can create the risk and accidents.

Fourthly, motorcycle rider with difference in age had awareness behavior for enforcement and legal regulation, behavior for motorcycle riding and risky behavior and perceived level indifferently. This is because the age may not be the variables that can frankly inform the behavior of the riding since it is needed to consider together with the other variables such as gender, education or period of riding license. For example, people with higher age, but they do not have any knowledge about how to ride the motorcycle or experience in seeing getting closer to the accidents, may not be as aware as the person who had more information or experiences with getting into the accidents. However, the older person will understand about their values and generally spend their lives with health care consciousness (Lukjunyabarn, 1995).

## **Recommendations**

### **Recommendation from the research**

From the study, the researcher can recommend the ways to reduce and prevent the accidents from motorcycle riding. The first is that there should be a focus on giving the more information and knowledge related to the motorcycle rider. This is because the more the motorcycle rider know about the law and regulation, they would behavior more awareness when riding the motorcycle. Secondly, there should be a focus on providing knowledge and information as well as approaching the motorcycle rider by considering their gender. The campaigns or events, especially related to enforcement and legal regulation and behavior for motorcycle riding, should be prioritized and designed base on the gender of the rider because different rider's gender had different awareness of accident prevention behaviors. Thirdly, in order to create the mindset to prevent the motorcycle accidents, there should be a consideration in creating activities related to issuing driving license such as driving training, brochure giving information about driving and others. This is because motorcycle rider with different period of driving license is more aware of accident prevention behaviors in terms of accident prevention behavior and accident perception.

### **Recommendation for the future study**

The researcher can recommend for further study in the following points. The first that the study is mainly based on the quantitative research which lacks in-depth information on how truly the motorcycle riders are aware of motorcycle accidents. Therefore, there should be a study that employs the qualitative method by interviewing or focused group in order to obtain the insight. Secondly, the study primary aimed at studying in single city in one province, which the behavior of the motorcycle rider is differed from the other area. Therefore, the study should be extended to other areas such as in Bangkok, outskirt provinces of Bangkok and remote area so that the study can compare and generalize the contents from the study. Thirdly, this study limited to only general personal factors including gender, age, education, and period of license or driving license. The other variables such as riding behavior, frequency of riding, purpose of riding, heath conscious and others should be also taken into account so that the study result can cover related variables affecting accident prevention behaviors in terms of riding motorcycle.

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## References

- Ariyapinyo, W. (1996). *Mental body and driving situations related to safe driving behavior of personal motorists in Bangkok*. (Master's Thesis, Srinakharinwirot Prasarnmit University).
- Baird, I. S., & Thomas, H. (1985). Toward a contingency model of strategic risk taking. *Academy of management Review*, 10(2), 230-243.
- Chumpawadee, U., Homchampa, P., Thongkrajai, P., Suwanimitr, A., & Chadbunchachai, W. (2015). Factors related to motorcycle accident risk behavior among university students in northeastern Thailand. *Southeast Asian J Trop Med Public Health*, 46(4), 805-21.
- Downing, A., & Iskandar, H. (1997). Engineering Approach to Accident Prevention and Reduction. *the 5th Konferensi Regional Teknik Jalan (KRTJ-5)* (p. 1-25). Yogyakarta: Indonesia.
- Factor, R., Mahalel, D., & Yair, G. (2008). Inter-group differences in road-traffic crash involvement. *Accident Analysis & Prevention*, 40(6), 2000-2007.
- General information of Ratchaburi province. (2016). *Ratchaburi Province Office Information searching method*. Retrieved from: <http://www.ratchaburi.go.th/datass/ratchaburi.pdf>. (15 March 2016).
- Hayakawa, H., Fischbeck, P.S. & Fischhoff, B. (2000). Traffic accident statistics and risk perception in Japan and the United States. *Accident Analysis & Prevention*, 32(6), 827-835.
- Herrero-Fernández, D. et al. (2016). Risky behavior in young adult pedestrians: Personality determinants, correlates with risk perception, and gender differences. *Transportation Research Part F: Traffic Psychology and Behaviour*, 36(1), 14-24.
- Iyanda A. (2018). Inter-Group Disparities in Fatal Road Traffic Accident in Texas, *European Scientific Journal*, 14(17), 61-79.
- Juthaphonkun, W. (1995). *Behavior Modification for Preventing Motorcycle Accidents Phetchabun province*. (Master's Thesis, Mahidol University).
- Lin, M. R., & Kraus, J. F. (2009). A review of risk factors and patterns of motorcycle injuries. *Accident Analysis & Prevention*, 41(4), 710-722.
- Lukjanyabarn, U. (1995). *Preventing accidents from motorcyclists in Chonburi Province*. (Master's Thesis, Chulalongkorn University)
- Moskal, A., Martin, J. L., & Laumon, B. (2012). Risk factors for injury accidents among moped and motorcycle riders. *Accident Analysis & Prevention*, 49, 5-12.
- Nakra, P. (1996). *Risk behavior of motorcycle accidents in Phuket Province*. (Master's Thesis, Mahidol University).
- Office of Transport and Traffic Policy and Planning. (2018). *Accidents situation occurrence on road by Transportation Ministry*. Retrieved from <http://www.otp.go.th> accessed on 30 May 2020.
- Özkan, T, et al., (2006). Cross-culture differences in driving behaviors: A comparison of six countries. *Accident Analysis & Prevention*, 38(5), 1011-1018.

- Population statistics of Ratchaburi province. (2016). *National Forecasting Bureau of Statistics Information searching method*. Retrieved from: [https://en.wikipedia.org/wiki/Ratchaburi Province](https://en.wikipedia.org/wiki/Ratchaburi_Province). (18 March 2016)
- Richer, I & Bergeron, J, (2012). Differentiating risky and aggressive driving: Further support of the internal validity of the Dula Dangerous Driving Index. *Accident Analysis & Prevention*, 45, 620-627.
- Statistics of motorcycle accident accidents in Ratchaburi province. (2016). *National news agency Public relations department Information searching method*. Retrieved from <http://thainews.prd.go.th>.
- The highest accident statistics are motorcycle. (2016). *Department of Land Transport. Information searching method*. Retrieved from <http://www.dlt.go.th>.
- Theory about the causes of accidents. Safety Engineering. (2016). *How to search the Saraset*. Retrieved from <http://thaisafetyengineer.blogspot.com>.
- Wilde, G. J. (1982). The Theory of Risk Homeostasis: Implications for Safety and Health. *Risk Analysis*, 2(4), 209–225.
- Yamane, T. (1990). *Determine the samples used in the study study, in the determination of the samples and research variables*, 1996, p. 59-161.

# **THE SECOND ORDER CONFIRMATORY FACTOR ANALYSIS FOR KNOWLEDGE MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES IN NAKHON PATHOM PROVINCE**

**Wisit Rittiboonchai<sup>1</sup>**

Faculty of Management Science, Nakhon Pathom Rajabhat University

## **Abstract**

This research article aimed at investigating second order confirmatory factor analysis for knowledge management in small and medium enterprises in Nakhon Pathom Province. The samples were 376 small and medium entrepreneurs. The convenience sampling method was employed to collect the data and the data collection used questionnaires. The study result indicated that knowledge management in small and medium enterprises in Nakhon Pathom Province was comprised with knowledge exchange, knowledge storage, and knowledge utilization. In addition, knowledge management in small and medium enterprises in Nakhon Pathom Province was also statistically significant. The research result can contribute the guideline for the enterprise to develop their knowledge management. Also, the future research was also suggested.

**Keywords:** Second Order Confirmatory Factor Analysis, Knowledge Management, Small and Medium Enterprises

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<sup>1</sup> Nakhon Pathom Rajabhat University, 85 Malaiman Road, Muang, Nakhon Pathom 73000 Thailand  
E-mail: mbakru1@gamil.com

## Introduction

The era of globalization has changed the society pattern to become more knowledgeable, emphasizing on information and knowledge. This does not only affect the society pattern, but it also has an impact on the industrial sectors, which is necessary to adapt themselves to be more dependent on knowledge and to build economic based knowledge (Chareonwongsak, 2008). However, this is a good point because the knowledge can contribute to the nation's development and innovation.

Indeed, knowledge can create national competitiveness, which the knowledge based economic characteristics include four dimensions: innovation and technological change, human resource development, information technology and business environment (Wichianpanya, 2004). However, the knowledge can be sustainable and beneficial requires effective knowledge management. Viriyapinit (2011) advocated that knowledge is very important for the organization and it would be continuously utilized when it has been effectively managed. The good knowledge management can include the good usage of human resources in order to obtain the knowledge and experience and integrate it with the prompt technological systems, which can help transfer knowledge to other people and also open the access from other people. Inchan and Inchan (2018) added that the strength of financial status of small and medium enterprises are perhaps not depending on the good management of business accounting and finance, but it can be because of good knowledge management. For example, if entrepreneurs know how to utilize the provided information and data from various reliable sources such as governmental agencies, banks, or universities, they will be able to manipulate all possible risks, problems and obstacles as well as enable effective decision making.

Recently, small and medium enterprises (SMEs) have a great role in contributing national economic development of Thailand. In 2013, there were more than 2.74 SMEs spreading over Thailand and contributing the huge impact on Thai gross domestic products (GDPs). In the report in 2012, SMEs generated approximately 4,211,262 million baht, accounted for 37.0 of country's GDPs (Napao, 2013).

For Nakorn Pathom Province, it is the center of commercial activities in western areas and hub of transportation that moving various industrial and agricultural products into Bangkok. Interestingly, Nakorn Pathom Province has its potentials including social development, agricultural product development and good infrastructures such as railways, roads, and water ways, which it then creates forward investments on and from agricultural products and plants. In terms of SMEs situation in Nakorn Pathom Province in 2015, SMEs itself had about 897 new registers, and overall value of registration were 2,113 million. In addition, there were overall 6,200 SMEs, employing 202,221 employees. Regarding small enterprises with less than 20 employees, there were 4,587 registered enterprises, employing 27,918. In the meantime, there were 5,208 medium enterprises with 20-299 persons, and there were 126,908 employees. Accordingly, it can be seen that SMEs is significant for Nakorn Pathom Province as well as for Thailand.

Two main problems that SMEs always encounter are lack of human and knowledge management in the organization. This is because that SMEs have fewer working people that it creates necessary to have people with high quality in working and more ability to manage the work effectively. However, to obtain such a quality works, SMEs must have knowledgeable people which knowledge management in the organization then plays an important role. Knowledge management does not only benefit for empowering and enhance people's working quality, but it also contributes the success of the organization in terms of business operation and keeping updated with dynamic world. Therefore, it can be mentioned that the knowledge management is significant for the business. In accordance, the researchers are then interested in studying knowledge management in SMEs in Nakorn Pathom Province by using confirmatory factor analysis in to order to identify five knowledge-management dimensions: Knowledge seeking, knowledge creation, knowledge storage, knowledge exchange, and knowledge utilization. After the study, the result can be advantageous for SMEs entrepreneurs to operate their business, responding the dynamic business competition.

### **Objectives of the study**

This study aimed at analyzing second confirmatory factor analysis of five knowledge-management dimensions: knowledge seeking, knowledge creation, knowledge storage, knowledge exchange, and knowledge utilization.

### **Literature Review**

#### **Theories, Concepts and Related Research of Knowledge Management**

Wipawin (2004) defined the knowledge management as the strategy, process, and technology that has been being used for identifying, creating, managing, and exchanging knowledge to achieve the organizational goals. However, the achievement needs the collaboration of people and integration of working process. In the meantime, Bunyakit et al. (2005) proposed that knowledge management is the process that utilizes existing knowledge for the organization. The process can include creation, collection, exchange, and implementation. Runchareon (2007) defined the knowledge management as the tool to achieve three goals of the organization, which these include work development, human resource development, and organizational learning development. In studying about knowledge management, Buameeroob (2004) found that knowledge management is important and useful for making training and development programs, which it can help the organization members to identify the problems and exchange the way to solve the problems. Yodnoppaklao (2005) also studied about knowledge management in the hospital in Mueng District, Surin Province and the result indicated that medical staffs agreed that the hospital managed the knowledge in terms of finding the way to development the service for the patients; searching information for new knowledge to respond the performance of the organization in according to the organizational goal, mission and vision; filtering knowledge in the hospital in order to develop work practices; and transferring implicit knowledge into

explicit knowledge. In addition to Yodnoppaklao (2005)'s study, medical staffs with different age, experience, position do not have different opinion towards knowledge management in the hospital. Lastly, Keyser (2004) researched about the relationship between knowledge management and employee's work performance by surveying 1,870 employees in Tennessee State Electric Company and the study result indicated that besides managing knowledge by middle and top management level, the operational level staff must also understand and implement it since the knowledge management by operational staff can be positively related to organizational performance significantly. Nevertheless, the perception towards knowledge management in the organization is significantly differed among the organizational members since they are in the different department and work types.

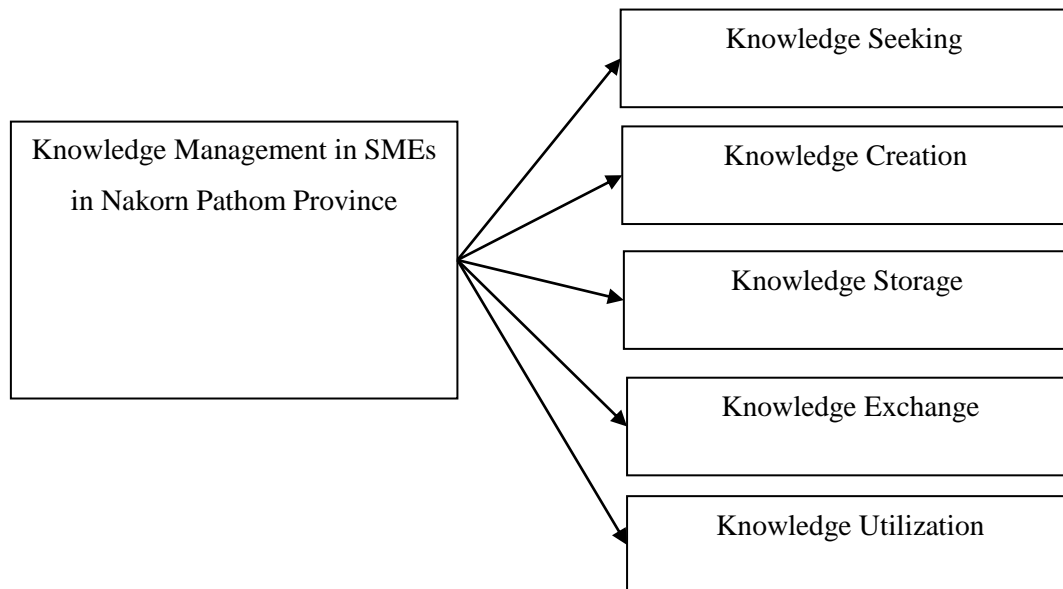
### **Theories, Concepts and Related Research of Small and Medium Enterprises (SMEs)**

Small and Medium Enterprises (SMEs) means the business that has been owned by the private persons and is not the subsidiary of any business or organization. In SMEs, there are few employees, and the investment is low. Indeed, there are three types of small and medium enterprises, which they include production, trade, and service. Normally, the size of the enterprises can be divided by using the number of employee or the amount of investment (Kanchanaburi Chamber of Commerce, 2016). Significantly, SMEs can contribute the huge impact for the country by increasing the job opportunities leading to create income for many people. In addition, SMEs can also create many large companies in the future because the large companies must start from being a small and medium enterprises. Lastly, SMEs help create new products and services since the small and medium enterprises must release innovative products and services to interest particular people and area, which the large companies do not dare to invest in.

### **Conceptual Framework**

The researchers applied the concepts of knowledge management of Turban and Aronson (2004) proposing the knowledge management processes including knowledge creation, knowledge storage and collection, knowledge selection, knowledge dissemination, knowledge utilization, and knowledge inspection. In addition, Marquardt (2011) proposed that the knowledge management consists of Knowledge seeking, knowledge creation, knowledge storage, knowledge exchange, knowledge utilization, and knowledge transfer. Similarly, Lorsuwanrat (2009) proposed that knowledge management depends on knowledge creation, knowledge analysis, and knowledge dissemination. Panich (2005) knowledge management requires processes to manage and develop continuously the knowledge, which it can be the tools to achieve individual goals, organizational goal, team support, and knowledge exchange among the organizational members. In a line with the reviews of related literature, the conceptual model can be drawn as follow.





**Figure 1** Conceptual Framework

## Research Methodology

### Population and Samples

Population were 6,200 entrepreneurs of small and medium enterprises in Nakorn Pathom Province. To obtain the samples, Yamana's formulation with 5-percent error was used and the samples were 376 ones to be selected as the study. The selection was based on convenience sampling technique.

### Study area

The researcher limited the study by focusing small and medium enterprises in Nakorn Pathom Province as the study area. The data of SMEs were derived from Information and Communication Information Group, Nakhon Pathom Provincial Office (2016). The characteristics of SMEs were referred to Revenue Department (2017), describing SMEs as the business that owned by the entrepreneurs, who can be general person; party; ordinary partnership that is not a juristic person; limited company or joint venture, which produce, service or trade products and services. In addition, the size of the SMEs can be categorized by using number of employees. Small enterprise consists of less than 20 employees meanwhile medium enterprise contains of more than 20 employees.

### Research Tool

The tool used to collect the data was questionnaire. The content validity was performed to inspect the questionnaires' validity. In the questionnaire, there are five latent variables and 58 observed variables. The name of symbols of latent and observed variables were given below.

**Table 1** Symbols of latent and observed variables

Latent Variable Name	Symbol
1. Knowledge seeking	acquisition
2. Knowledge Creation	building
3. Knowledge Storage	storage system
4. Knowledge Exchange	sharing.
5. Knowledge Utilization	Utilization
Knowledge Management	KMSME
Observed Variable Name	
1. Knowledge seeking	ACQ1-17
2. Knowledge Creation	BUL1-13
3. Knowledge Storage	SS1-8
4. Knowledge Exchange	SHA1-11
5. Knowledge Utilization	UTL1-9

### Data analysis

The researcher analyzed both descriptive and inferential statistics. The descriptive statistics included frequency and percentage. In the meantime, the inferential statistics included confirmatory factor analysis, which computed by LISREL 8.52 to indicate second order of confirmatory factor analysis. In addition, the multicollinearity was also examined. The examination result indicated that the model had no multicollinearity.

## Results

### Characteristics of small and medium enterprises

**Table 2** Characteristics of small and medium enterprises

Size	Frequency	Percentage
1. Small Enterprises (Less than 20 employees)	200	53.19
2. Medium Enterprises (Between 20-299 employees)	176	46.81
Type		
1. Production	100	26.60
2. Retail and Wholesale Business	151	40.16
3. Services	125	33.24

The above table showed that most of the respondents were in small enterprises that occupied less than 20 employees (200 persons or 53.19 percent). In addition, most of the respondents were in retail and wholesale business (151 persons or 40.16 percent).

**Table 3** Correlation between latent variables

	ACQ	BUL	SS	SHA	UTL
ACQ	1	0.76**	0.49**	0.45**	0.37**
BUL		1	0.49**	0.48**	0.35**
SS			1	0.78**	0.73**
SHA				1	0.77**
UTL					1

The above table showed that the latent variables did not produce multicollinearity because the coefficient values were not over than 0.8. Therefore, the variables were able to be performed by the second order of confirmatory factor analysis.

**Table 4** First order of knowledge management of small and medium enterprises in Nakorn Pathom Province

Latent Variables	Lamda Y	t-value	R <sup>2</sup>
1. Knowledge Seeking	0.50	9.03**	0.25
2. Knowledge Creation	0.49	8.81**	0.24
3. Knowledge Storage	0.95	15.88**	0.90
4. Knowledge Exchange	0.99	17.41**	0.99
5. Knowledge Utilization	0.92	15.87**	0.85

\*\* p-value < 0.01

The above table showed that there were three dimensions: knowledge storage, knowledge exchange and knowledge utilization, can contribute to create knowledge management of small and medium enterprises in Nakorn Pathom Province. However, all dimensions: Knowledge seeking, knowledge creation, knowledge storage, knowledge exchange, and knowledge utilization, were significantly correlated.

**Table 5** Second order of knowledge management of small and medium enterprises in Nakorn Pathom Province

Observed variables	Lamda Y	t-value	R <sup>2</sup>
<b>1. Knowledge seeking</b>			
1.1 Seeking knowledge from websites related to the work.	0.54	-	0.54
1.2 Seeking knowledge from documents, textbooks, and training manuals, to increase professional experience.	0.63	15.45**	0.61
1.3 Seeking knowledge from experts' experiences such as customers, or partners.	0.64	15.92**	0.64

**Table 5** Second order of knowledge management of small and medium enterprises in Nakorn Pathom Province (Cont.)

Observed variables	Lamda Y	t-value	R2
1.4 Seeking additional knowledge from training or seminars.	0.60	15.31**	0.60
1.5 Seeking additional knowledge from reading research.	0.63	15.39**	0.60
1.6 Seeking knowledge by accumulated experienced expertise.	0.61	14.90**	0.57
1.7 Seeking knowledge through various printed media and technologies.	0.61	15.67**	0.62
1.8 Seeking knowledge from exchanging, and sharing ideas and problem solving.	0.65	15.32**	0.60
1.9 Consistently seeking knowledge from various sources.	0.63	15.24**	0.59
1.10 Seeking needed knowledge is significant and should be corresponding to SMEs variety.	0.64	15.51**	0.61
1.11 Seeking knowledge from gathering from knowledge exchange from additional training.	0.57	14.45**	0.54
1.12 Seeking knowledge that is related to business owner.	0.62	15.13**	0.58
1.13 Seeking knowledge from modern communication channels.	0.63	15.48**	0.61
1.14 Updating new knowledge from both government and private sectors.	0.63	14.96**	0.57
1.15 Seeking knowledge from websites of relevant government agencies	0.64	14.45**	0.54
1.16 Seeking knowledge through family business inheritance.	<b><u>0.66</u></b>	<b><u>15.38**</u></b>	<b><u>0.60</u></b>
1.17 Seeking knowledge from related network professional.	0.55	13.41**	0.47
<b>2. knowledge creation</b>			
2.1 Creating knowledge by using experience in doing business.	0.63	-	0.54
2.2 Creating knowledge by gaining new knowledge from major government agencies.	0.66	14.85**	0.57

**Table 5** Second order of knowledge management of small and medium enterprises in Nakorn Pathom Province (Cont.)

Observed variables	Lamda Y	t-value	R2
2.3 Creating knowledge from collecting problem solving methods from various legal problems.	0.60	14.07**	0.51
2.4 Creating knowledge from talking and discussing problem solving within the organization.	0.63	14.25**	0.53
2.5 Creating new knowledge from learning from direct experience.	0.64	13.75**	0.49
2.6 Creating knowledge by making agreements with educational personnel when there is a university visit	0.63	15.49**	0.61
2.7 Creating new knowledge from advices provided by consultants.	0.72	16.07**	0.65
2.8 Creating knowledge from knowledge collection from studying from work experience.	0.67	15.88**	0.64
2.9 Creating knowledge and understanding about partnership for each partners.	0.67	15.53**	0.62
2.10 Creating knowledge from studying legal details.	0.70	16.26**	0.67
2.11 Creating knowledge through knowledge synthesis or integration experienced from storytelling.	0.76	15.63**	0.62
2.12 Creating knowledge from the collection of specific job characteristics.	<b><u>0.78</u></b>	<b><u>16.17**</u></b>	<b><u>0.66</u></b>
2.13 Creating important knowledge by creating a knowledge database.	0.53	11.67**	0.36
<b>3. Knowledge storage</b>			
3.1 There is a systematic storage of knowledge.	0.60	-	0.55
3.2 There is a system to store various knowledge for employees to learn.	0.65	15.88**	0.63
3.3 There is a system to store the knowledge obtained from attendance in training and seminar.	0.63	16.38**	0.66
3.4 There is a systematic storage categorizing the knowledge.	0.67	16.32**	0.66
3.5 There is knowledge gathering in order to create manual documents.	0.69	16.43**	0.67
3.6 There is an information storage related to customer registration.	0.68	16.14**	0.64

**Table 5** Second order of knowledge management of small and medium enterprises in Nakorn Pathom Province (Cont.)

Observed variables	Lamda Y	t-value	R2
3.7 There is a knowledge storage about SMEs.	0.70	16.80**	0.69
3.8 There is a safety system for storing knowledge.	<b><u>0.72</u></b>	<b><u>17.63**</u></b>	<b><u>0.75</u></b>
<b>4. Knowledge exchange</b>			
4.1 There is an establishment of related matter club or association in order to exchange knowledge among the members or build informal relationship.	0.67	-	0.59
4.2 There is a forum for discussion and exchange of experiences, both for successful and failure business operations.	<b><u>0.70</u></b>	<b><u>17.53**</u></b>	<b><u>0.67</u></b>
4.3 There is an exchange of knowledge by telling the story to the colleagues.	0.65	16.65**	0.62
4.4 There is knowledge exchange by using information technology as a tool.	0.61	16.77**	0.63
4.5 There is exchange of knowledge during work.	0.58	15.32**	0.54
4.6 There is an exchange of knowledge to create good attitudes towards work.	0.59	16.31**	0.60
4.7 Building a personnel network to occasionally exchange knowledge about solutions to problems in the work.	0.61	15.64**	0.56
4.8 There is an exchange of knowledge in a family business society.	0.63	16.51**	0.61
4.9 There is an exchange of learning from arguments about business operations.	0.63	16.68**	0.62
4.10 There is learning exchange from attending seminars.	0.61	16.44**	0.61
4.11 There is knowledge exchange through social interaction.	0.60	15.05**	0.52
<b>5. Knowledge utilization</b>			
5.1 Applying knowledge to solve work problems.	0.63	-	12.79
5.2 Applying knowledge to plan and manage SMEs' business operation.	0.65	15.31**	0.57
5.3 Applying knowledge to profit the business.	0.68	16.22**	0.63
5.4 Integrating and adapting different knowledge into work.	0.71	17.06**	0.68

**Table 5** Second order of knowledge management of small and medium enterprises in Nakorn Pathom Province (Cont.)

Observed variables	Lamda Y	t-value	R2
5.5 Applying knowledge to develop self-roles in accordance with good governance principles.	<b><u>0.71</u></b>	<b><u>17.36**</u></b>	<b><u>0.70</u></b>
5.6 Applying knowledge from problem analysis in each business to develop their own businesses.	0.71	16.86**	0.67
5.7 Applying knowledge to increase business performance.	0.70	16.23**	0.63
5.8 Finding new knowledge in order to be used in benefiting their SMEs.	0.67	16.49**	0.64
5.9 Standardizing knowledge management in order to gain knowledge, understanding, and expertise in business.	0.65	16.33**	0.63

\*\* p-value < 0.01

From the above table, the second order of confirmatory factor analysis of small and medium enterprises indicated as follows.

1. Regarding knowledge seeking dimension, it was found that “Seeking knowledge through family business inheritance” was the most important factor (ACQ16: Lamda Y = 0.66).

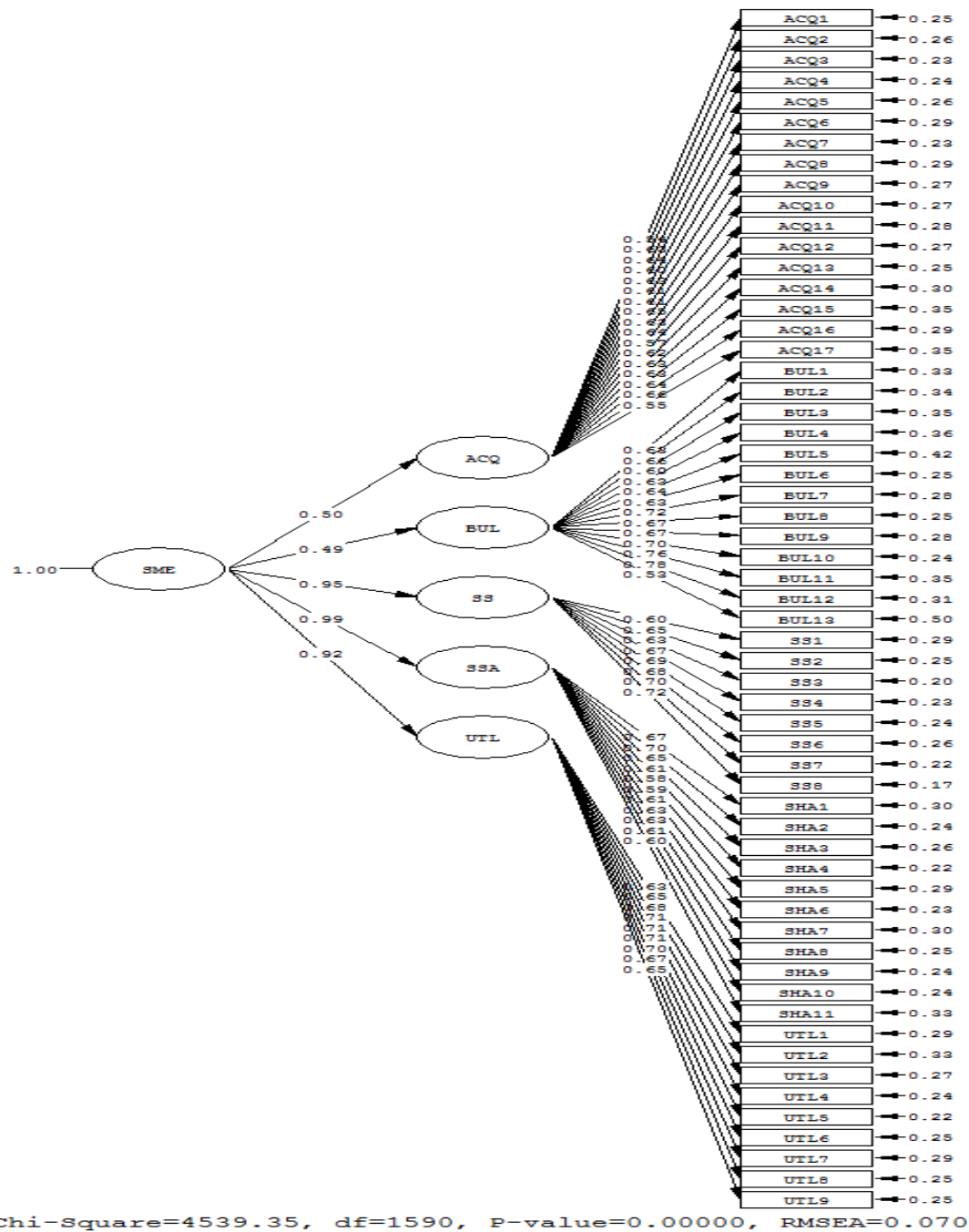
2. Regarding knowledge creation dimension, it was found that “Creating knowledge from the collection of specific job characteristics” was the most important factor (BUL12: Lamda Y = 0.78).

3. Regarding knowledge storage, it was found that “There is a safety system for storing knowledge” was the most important factor (SS8: Lamda Y = 0.72).

4. . Regarding knowledge exchange, it was found that “There is a forum for discussion and exchange of experiences, both for successful and failure business operations” was the most important factor (SHA2: Lamda Y = 0.70).

5. Regarding knowledge utilization, it was found that “Applying knowledge to develop self-roles in accordance with good governance principles” was the most important factor (UTL5 : Lamda Y = 0.71).

The analysis of second order of confirmatory factor analysis revealed the knowledge management model for small and medium enterprises in Nakorn Pathom province as follow.



**Figure 2** Second order confirmatory factor analysis of knowledge management model of small and medium enterprises in Nakorn Pathom Province.

## Discussion

From the study, it was found that it is very important for the small and medium enterprises in Nakorn Pathom Province to manage the knowledge the knowledge in the organization in order to sustain the business operation as well as human resource development. The knowledge management must be composed from different aspects: knowledge seeking, knowledge creation, knowledge storage, knowledge exchange, and knowledge utilization. In terms of knowledge seeking dimension,



the entrepreneurs emphasized on seeking knowledge through family business inheritance because it was the easiest way that the enterprise can utilize the unique knowledge to continue running the business. Meanwhile, creating knowledge from the collection of specific job characteristics can provide the sources of working knowledge because it can reflect and present the direct experiences related to the work. Additionally, safety system in storing knowledge was also significant for the safety system for storing knowledge because certain information and data was especially confidential. Next, the knowledge management also relied on knowledge exchange, which focus on sharing knowledge related to successful and failure business operations through creating knowledge exchange stage because the discussion stage can provide a great opportunity for the members in the enterprises can raise their problems, solution and related matters. Lastly, regarding knowledge utilization, it was found that “applying knowledge to develop self-roles in accordance with good governance principles” was the most important factor because it was the best way that the members in the enterprises can apply the useful knowledge from the management into their daily working life and role. When all of them apply related knowledge, the enterprises which were reflected as a collective concept can then have better performance. The study presented herewith was correspondent with Lorsuwanrat (2009), who proposed that knowledge management must depend on combination from various aspects. In addition, the study also matched with the study done by Panich (2005), who proposed that managing knowledge should focus on 2-3 tools, which are not complicated, as well as the value of each knowledge must be able to be assessed.

## **Recommendations**

### **Recommendations for policy**

The entrepreneurs of small and medium enterprises emphasize on knowledge exchange, knowledge storage, and knowledge utilization, which they lack of important focus on knowledge seeing and knowledge creation implying that they need to be more on seeking new knowledge and creating new knowledge. This can help the entrepreneurs to have their own knowledge that can be utilized into their own business. In order to do that, the entrepreneurs should develop enterprise's members to have more skills, knowledge and opportunity to learn new things, experience and knowledge from various existing sources such as books, posts, article journal, researches, news, and so on from library websites, or governmental sources provisions. In addition, the entrepreneurs should provide training and development programs in order to train the employees in the enterprises to have skills related knowledge collection, analysis, and synthesis so that they can make use of the knowledge that they found.

### **Recommendations for future research**

From the study, there are various limitations that can contribute the opportunity for numbers of future research. Firstly, there should be an implementation of mixed method of research

methodology in order to obtain the in-depth information and data since this study relied on only questionnaire survey. The methods can be, for instance, focus group, in-depth interview, and others. Secondly, there should be an extension of the study area where Nakorn Pathom Province was only single area in this study. It is believed that the entrepreneurs in different geographical area perhaps behave about knowledge management due to the technology provision and knowledge opportunity. Thirdly, there should be a separation of the product and service types of small and medium enterprises, which the way to manage the knowledge in the enterprises perhaps different. In line with this, the related organizations being responsible for SMEs development can directly and particularly enhance enterprises' knowledge management.

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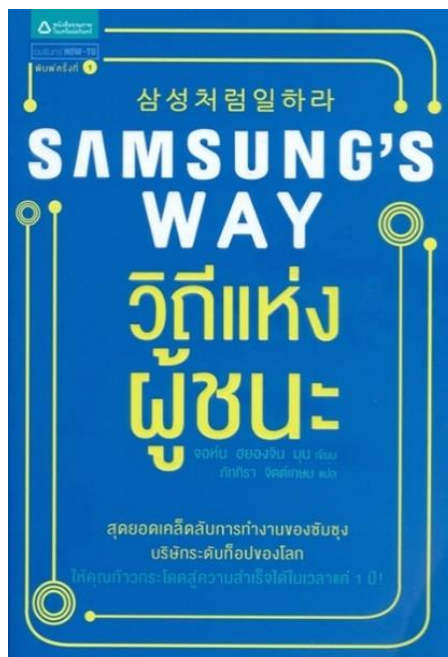
### **References**

- Buameeroob, S. (2004). *Knowledge management in organizations: a case study of the Metropolitan Waterworks Authority*. (Master's thesis, National Institute of Development Administration).
- Bunyakit, et al. (2005). *Knowledge management from theory to practice*. Bangkok: Se-Education.
- Chareonwongsak, K. (2008). *Learning: Use information like winners*. Bangkok: Success Media Publisher.
- Information and Communication Information Group Nakhon Pathom Provincial Office (2016). *Briefings of Nakhon Pathom Province*. Retrieved From [http://www.nakhonpathom.go.th/files/com\\_news\\_describe/2016-06\\_abd0f2a5f6240e7.pdf](http://www.nakhonpathom.go.th/files/com_news_describe/2016-06_abd0f2a5f6240e7.pdf).
- Inchan, S. & Inchan, R. (2018). Accounting hiring and weakness of financial strength of small and medium enterprises: a case study of Nakhon Pathom Province. *Journal of Management Science, Nakhon Pathom Rajabhat University*. 5(1), 143-151.
- Kanchanaburi Chamber of Commerce. (2016). *Information of SMEs*. Retrieved From [http://kanchamber.com/wizContent.asp?wizConID=384&txtmMenu\\_ID=7](http://kanchamber.com/wizContent.asp?wizConID=384&txtmMenu_ID=7).
- Keyser, R. L. (2004). *Assessing the relationship between knowledge management and plant performance at the Tennessee Valley Authority*. (Doctoral dissertation, The University of Alabama in Huntsville).
- Lorsuwanrat, T. (2009). *Knowledge Organization: From Concept to Practice*. (4th edition). Bangkok: Zat Printing Printing.
- Marquardt, M.J. (2011). *Building the learning organization: Achieving strategic advantage through a commitment to learning* (3rd ed.). Boston: Nicholas Brealey.

- Napao, B. (2013). Competency in accordance with international education standards for accounting professionals and work efficiency: a case study of SMEs business accountants in Nonthaburi province. *Journal of Business Administration Association of Higher Education Institutions of Thailand*, 2(2), 1-9.
- Panich, W. (2005). *Knowledge management and Thai public administration*. Bangkok: Institute for Knowledge Management for Society.
- Revenue Department (2017). *Characteristics of SMEs*. Retrieved From <http://www.rd.go.th/publish/38056.0.html>.
- Runcharoen, T. (2007). *Professionalism in Educational Management and Management of Educational Reformation Era*. Bangkok: Sorghum.
- Turban, E., & Aronson, J. E. (2004). *Information technology for management*. Hoboken, NJ: John Wiley and Son.
- Viriyapinit, M. (2011). *Learning organization and knowledge management*. Bangkok: Song Siam Publishing.
- Wichianpanya, P. (2004). *Knowledge management: fundamentals and applications*. Bangkok: Export Publisher.
- Wipawin, N. (2004). *Knowledge Management and Knowledge Base*. Bangkok: SR Printing.
- Yodnoppaklao, N. (2005). *Knowledge management, Khon Kaen University, Ruam Phaet Hospital, Mueang District, Maha Sarakham Province*. (Master's thesis, Mahasarakham University).

## BOOK REVIEW

### SAMSUNG'S WAY



Author: John Hyungjin Moon

Reviewed by: **Pariyapa Lapanant<sup>1</sup>**

Samsung, a South Korean multinational company, has increasingly globalized its activities and becomes a powerful influence on South Korea's economic development. This book reveals various secrets of Samsung's success that make it be one of the best performing companies in the world. Besides business strategies, Samsung's culture which is in the bloodstream of every employee can make a major difference.

John Hyungjin Moon, the author, narrated his experiences through facts, logic and his creativity. This book shows the attitude of Samsung's management and employees. The secrets of how Samsung encourages its employee to work as if they were the president of the company, how to satisfy its customers professionally, and its business etiquette are clearly explained.

This book is highly recommended. Not only the management or employees of an organization, but students who are going to start their career should learn from this book. Readers will see the arts of how to work effectively, how to solve problems, how to negotiate, how to win, and how to make a change through Samsung's lens.

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<sup>1</sup> Department of Management, Faculty of Business Administration, Rajamangala University of Technology Thanyaburi E-mail: [pariyapa\\_1@mail.rmUTT.ac.th](mailto:pariyapa_1@mail.rmUTT.ac.th)