



The Effect of Financial Risk and Enterprise Internal Management on Enterprise Performance of Automotive and Automotive Part Industry in Thailand

Received: 22 March 2022

Revised: 3 August 2022

Accepted: 26 October 2022

Piya Thirapanmethee¹ Tiyadah Pichayasupakoon^{2*} and Nilubon Bootchai³

Abstract

The main objective of this study is to examine factors affecting financial risk management and enterprise internal management on enterprise performance of automotive and automotive parts industry in Thailand using empirical data. The sample was chosen from companies in automotive parts manufacturing industry in Thailand. The questionnaires were distributed to 334 respondents. The statistics were descriptive statistics, confirmatory factor analysis and structural equation model. The results show that the conceptual model aligned with the empirical data. ($\chi^2=121.331$, $p = .279$, $\chi^2/df = 1.074$, $GFI = 0.962$, $AGFI = 0.936$, $CFI = 0.998$, $RMSEA = 0.015$) The findings indicated that financial risk management had positive impacts on enterprise internal management at significance level 0.01. Enterprise internal management had positive impacts on enterprise performance at significance level = 0.01. Furthermore, the outcome showed that financial risk management had direct and indirect impacts on enterprise performance at significance level = 0.01. which confirmed the relationship of factors that influenced enterprise performance in Thailand's automotive industry.

Keywords: Financial Risk, Enterprise Internal Management, Enterprise Performance, Automotive

*Corresponding author e-mail: tiyadah.p@ku.th

¹ Lecture, Computer Science Department, Faculty of Science and Technology, Rajamangala University of Technology Krungthep. e-mail: piya@mail.rmutk.ac.th

² Assistant Professor, Faculty of Management Science, Kasetsart University, Sriracha Campus. e-mail: tiyadah.p@ku.th

³ Lecture, Computer Science Department, Faculty of Science and Technology, Rajamangala University of Technology Krungthep. e-mail: nilubon.b@mail.rmutk.ac.th



Introduction

Thai government had given constant supports to Automotive and automotive parts industry. The early development of this industry focused on production to replace importing. Thai government also released policies to strengthen automotive and automotive parts industry, such as tax increase for automotive parts and assembled automobile, forcing usage of automotive parts manufactured in Thailand, promoting foreign investments, and driving passed-on knowledge of new technology from international firms to Thai firms. As a result, automotive and automotive part industry in Thailand had seen growth in the ratio of domestically manufactured automotive parts usage in automobile assembling as high as 80% (measured by total cost of automotive parts) (Yongpisanphob, 2020) However, there were many closely related risk factors especially during global recession, which were the result of trade war between China and the United States, and the change in structure of excise tax on Thailand's important trade partners (Thansettakij, 2020) In addition, COVID-19 outbreak greatly impacted global economic growth; global economy expanded less than 1% (Tamajai, 2020). International Monetary Fund (IMF) predicted that global economy would shrink by 3% in 2020. Many countries would face recession that affected supply chain system by labor shortage and raw materials (Chunthapong & Tonghui, 2020)

To adjust business strategy, enterprise internal management was among the most important factors, as it regulated operation guidelines (Jean, Sinkovics & Zagelmeyer, 2018, pp. 995-1026; Sritiprat, 2014, pp. 14-18) Financial risk management was also another important factor, since it was the result from currency fluctuation, production material cost fluctuation, industry's demand-supply fluctuation, employees' pay, financial regulation violation, and mistakes from bookkeeping (Quang & Hara, 2017, pp. 1369-1388) If the businesses in the said industry had good internal management and effective financial risk management, they should achieve their objectives and earned sustainable revenues (Angsuphan, 2019) Furthermore, effective financial risk management reflected effective overall enterprise management and administration, which was the foundation of continuous growth of business.

Global economy recession and COVID-19 outbreak inevitably affected enterprise operation in automotive industry. Governing relationships between financial risk management, enterprise internal management, and enterprise performance, hence, would play an important role in maintaining the overall enterprise competitiveness in current global situation.

Research Objective

1. To verify correlation of factors that affect financial risk management and enterprise internal management within enterprise performance of automotive and automotive parts industry in Thailand
2. To study direct impacts, indirect impacts, and overall impacts of financial risk management, enterprise internal management, and enterprise performance.

Scope of the Research

The scope of this research includes the aspect of population and content, detailed as follow:

Population: The sample consists of firm members of The Federation of Thai Industries, The Thai Automotive Industry Association (TAIA), Thai Auto-Parts Manufacturers Association (TAPMA) (Thai Autoparts Manufacturers Association, 2018, pp. 63-75), whose executive level officers provide answers to our questionnaire.

Content: This research studies financial risk management, enterprise internal management, and enterprise performance of the aforementioned firms.

Conceptual Framework

The variables in this research includes Exogenous Latent Variable, which is Financial Risk Management (FRM), and Endogenous Latent Variables, which are Enterprise Internal Management (EIM) and Enterprise Performance (EP). The concept framework is shown in Figure 1.

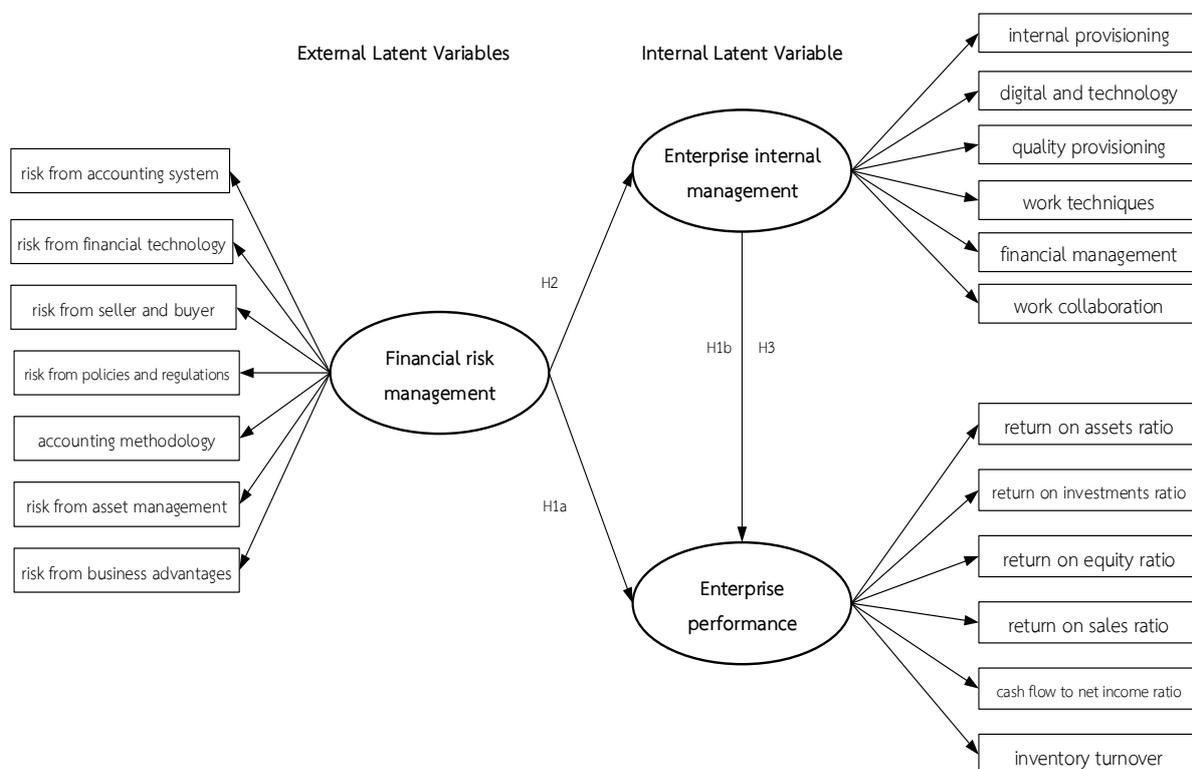


Figure 1 Conceptual Framework



This study consists of 3 the hypotheses, such as:

H1: Financial risk management directly and indirectly influences enterprise performance, which includes the secondary hypotheses, as follow

H1a: Financial risk management positively and directly influences enterprise performance.

H1b: Financial risk management positively and directly influences enterprise performance via enterprise internal management.

H2: Financial risk management positively and directly influences enterprise internal management.

H3: Enterprise internal management positively and directly influences enterprise performance.

Literature Review

Automotive Industry

Automotive and automotive parts industry plays important role in developing the country's economy. Thailand has policies for continuous development in this field. Starting from 1961, there was an official support on domestic automotive-part production and usage, to reduce the import counterpart (Thailand Automotive Institute, 2012, p. 1) Automotive industry helps improve economy in the aspects of production, marketing, employment, and development of technology. However, automotive industry is also at risk of the changes in production's structure and demands on automobile –especially, the demand from electric cars. If the automotive business owner cannot cope up with the changes, that could lead to a crisis of Thailand's automotive and automotive parts industry (GSB Research, 2019)

Financial Risk Management

Risk management is the result of the decisions under uncertainties, to protect the profits and promote goal fulfilment (Hwang, 2014, pp. 219–234; Mishra, 2019, pp. 162-188) These affect most stocks in stock market by way of inflation or interest rate, and gross domestic products (GDP), which in turn, affect cost of raw material, wage, assets, as well as product's price (Pavabutr, 2008, pp. 179-219; Sangsunt & Khongsawatkiat, 2009, p. 232) Financial risk management helps lead the organization's success, reduce obstacles from unlikely events that could affect organization's profit and operation, and prevent damage to resources (PricewaterhouseCoopers, 2004, pp. 1-5) Therefore, financial risk management is then correlated to accounting system, financial technology, seller and buyer, policies and regulations, accounting methodology, asset management, and risk from business advantages. (Tiyadah & Sawat, 2020, pp. 75-92)



Enterprise Internal Management

Enterprise internal management is a procedure in planning phase, which requires the executives of all levels to attend. A good enterprise internal management helps reduce loss from redundant tasks, clarify scopes and policies, which in turn help the executives prepare for the uncertainties in the future, and prevent conflicts within the organization. Strategy planning covers the scope of organization's activities, which must consider overall resources in the organization and environment condition prediction both inside and outside the organization (Attamana, 2002, p. 421; Sritiprat, 2014, pp.14-18) Enterprise internal management is an important factor for success and good relationship with stakeholders of all levels (Shin & Park, 2020, pp. 979-1006) Therefore, enterprise internal management is then correlated to internal provisioning, information system, quality provisioning, work techniques, financial management regarding recognition criteria of asset and measurement bases, and work collaboration. (Sawat & Tiyyadah, 2021, pp.78-89)

Enterprise Performance

The concept of enterprise performance is focused on concrete goal-oriented management, with clear and evaluable results. It is directed toward organization's goals (Chamnanchang, 2013, p. 55) Performance, hence, is the indicator of whether the organization has achieved its purposes and goals (Tantunsat, 2009, p. 39) In the past, the evaluation only focuses on controlling management, which often expects short-term performance. To sustainably improve the organization, there must be evaluation and assessment during work operation, so that the current circumstances are realized, and the executive systems are connected throughout, with the goal of systematic and constant development (Tongsokhowong, 2017)

Financial performance effectiveness could be evaluated by analyzing financial statement. Financial statement analysis is, therefore, a tool for risk evaluation, security, and success of the organization through correlation of numbers in the statement. If the performance is not effective, it could fatally impact the business (Guragai & Hutchison, 2020, pp. 429-447; Pipatanasern, 2011, pp. 75-77; Yossomsakdi, 2007, pp. 84-85)

Although nowadays many organizations use modern management tactics that evaluate the operation from different points of view to gauge enterprise performance, executives of different organizations give priorities to various aspects of enterprise performance differently. However, financial perspective is among the most important perspectives executives need to prioritize. Organization's performance is then considered from the return analysis as a part of financial risk analysis; it evaluates the organization's capability to make profit, showing the tendency of long-term gain which reflects organization's success or failure. Return analysis consists of return on assets ratio, return on investments ratio, return on equity ratio, return on sale ratio, cash flow to net income ratio, and inventory turnover. (Tiyyadah & Sawat, 2020, pp. 75-92)



Methodology

Population are firms that are parts of automotive and automotive part industry in Thailand: 50 member firms from the Federation of Thai Industries, 124 member firms from the Thai Automotive Industry Association, and 642 member firms from Thai Autoparts Manufacturers Association 816 firms in total (Thai Autoparts Manufacturers Association, 2018, pp. 63-75)

Samples are drawn from the executive officers of member firms of the Federation of Thai Industries, and member firms from Thai Autoparts Manufacturers Association. Also, since this study uses Structural Equation Model (SEM) to analyze data, we set the sample size according to the concept of statistical analysis equation model of Hair, Black, Babin & Asderson (2010, pp. 661-662) that suggests that sample size for equation analysis must be considered by Multivariate Normality, Estimation Technique, Model Complexity, Missing Data, and Average Error Variance of Indicators. The appropriate sample size is 300. Therefore, considering the above criteria and to prevent the Outliers, we set the sample size to 330 by Convenience Sampling.

The data collection is performed on the sample firms that consist of automobile manufacturers, automobile assemblers, and automotive part manufacturers that have obtained factory license and firms that import/export automobile parts or related machinery. The length of time used to collect the data is 4 months, from May 2019 – August 2019.

The method used in collecting data is delivering questionnaire to the sample firms via physical mail and e-mail, along with the letter asking for permission to collect data through point-of-contact persons in the firms. In addition, we also visit the firms to collect the data in person, and through phone calls. This study has sent the questionnaire to 816 firms and received the answers from 334 firms.

The tool used in data collection is a questionnaire with close-ended questions. There are 2 parts: Part 1 – general information about the responder; and Part 2 – evaluation on level of operations (scale of 7, 1 being the lowest and 7 being the highest).

Tool Quality Assessment is conducted in 2 manners. The first is Index of Item Objective Congruence (IOC). The second is Reliability Testing. For IOC, the tool (the questionnaire) is verified by 9 financial risk experts on the validity, the scope of the content, and the language. The result shows that the IOC has value 0.75 – 1.00 for financial risk management topic, 0.50 – 0.90 for enterprise internal management topic, and 0.90 for enterprise performance topic. All the topics has the IOC value 0.5 or higher, which implies that the tool's content is valid. The Reliability Testing is conducted by taking 30 firms in a sample and testing for Reliability value. The result shows that Cronbach's Alpha Coefficient on financial risk management is 0.937, enterprise internal management is 0.917, and enterprise performance 0.868. All the values are higher than 0.70, which implies that the tool is reliable. (Hair, Black, Babin & Asderson, 2010, p. 710)



Data analysis and statistics consists of Descriptive Statistics, used to describe general information of the sample on financial risk management level (FRM), enterprise internal management (EIM), and enterprise performance (EP). Inferential Statistics is used to in structural equation model, by verifying the assumptions on data analysis of multivariate statistics, namely outliers. To do that, Squared Mahalanobis Distance (D^2) is used to reject questions that have P-Value lower than 0.01, which implies that the data point is higher or lower than normal. We find 17 datasets that have higher value than the standard (Hair, Black, Babin & Asderson, 2010, p. 66), which implies abnormality of the data and is then rejected from the sample. That results in 317 datasets in total to be tested on Normality, Homoscedasticity, and Linearity. The result of the tests yields the data whose assumptions are verified. Then, the data is analyzed using Confirmatory Factor Analysis (CFA), tested on hypotheses, and analyzed for direct and indirect influence using Path Analysis.

Results

From general information, it is shown that most firms are in automotive and automotive parts manufacturers (142 firms, 42.5%), have been operating for more than 10 years (82%), whose trade partners are 174 firms that consists of Thai and foreign firms (52.1%), and most of major shareholders are Thai (62.3%).

Analysis on Financial Risk Management Level, Enterprise Internal Management, and Enterprise Performance

It is found that the opinion of the majority of the firms is Strongly Agree ($\bar{X} = 5.86$, $SD = 0.57$) to prioritizing enterprise performance, Agree ($\bar{X} = 5.71$, $SD = 0.71$) to enterprise internal management, and Agree ($\bar{X} = 5.55$, $SD = 0.69$) to financial risk management.

From Confirmatory Factor Analysis (CFA), it is found that First Order CFA on 3 variables, which are financial risk management (FRM), enterprise internal management (EIM), and enterprise performance (EP), could be measured by 1) Latent variable financial risk management (FRM) is measured from 7 observe variables, namely risk from accounting system (FRM1), risk from financial technology (FRM2), risk from seller and buyer (FRM3), risk from policies and regulations (FRM4), risk from accounting methodology (FRM5), risk from asset management (FRM6), and risk from business advantages (FRM7). 2) Latent variable enterprise internal management (EIM) is measured from 6 observe variables, namely internal provisioning (EIM1), digital and technology (EIM2), quality provisioning (EIM3), work techniques (EIM4), financial management (EIM5), and work collaboration (EIM6). 3) Latent variable enterprise performance (EP) is measured from 6 observe variables, namely return on assets ratio (EP1), return on investments ratio (EP2), return on equity ratio (EP3), return on sales ratio (EF4), and cash flow to net income ratio (EP5), and inventory turnover (EP6). The result on analysis of 19 observe-variable correlation matrix shows that the correlation value of 51 variable pairs are significantly distinct from zero at 0.01 statistical level. And from assumption verification, it is



found that correlation matrix of the 19 variables is not an identity matrix, which means the 19 variables are correlated and could be used in component analysis (Bartlett's Test of Sphericity: Approx. Chi-Square = 4680.907, df = 171, p = .000). When considering Measures of Sampling Adequacy (MSA) of the 19 variables, the values range from 0.897 – 0.980, which are all higher than 0.5. That means all the variables could be used for component analysis, which is shown in Table 1 and Figure 2.

Table 1 Correlation Coefficient of observe variables from financial risk measurement model Enterprise Internal Management and Enterprise Performance

| Observe Variable | FRM1 | FRM2 | FRM3 | FRM4 | FRM5 | FRM6 | FRM7 |
|------------------|---------|---------|---------|---------|---------|---------|---------|
| FRM1 | 0.933 | | | | | | |
| FRM2 | 0.542** | 0.923 | | | | | |
| FRM3 | 0.496** | 0.708** | 0.950 | | | | |
| FRM4 | 0.603** | 0.550** | 0.708** | 0.950 | | | |
| FRM5 | 0.450** | 0.531** | 0.650** | 0.653** | 0.924 | | |
| FRM6 | 0.423** | 0.499** | 0.591** | 0.656** | 0.778** | 0.928 | |
| FRM7 | 0.360** | 0.535** | 0.509** | 0.501** | 0.689** | 0.716** | 0.945** |

| Observe Variable | EIM1 | EIM2 | EIM3 | EIM4 | EIM5 | EIM6 |
|------------------|---------|---------|---------|---------|---------|-------|
| EIM1 | 0.935 | | | | | |
| EIM2 | 0.733** | 0.944 | | | | |
| EIM3 | 0.674** | 0.689** | 0.950 | | | |
| EIM4 | 0.653** | 0.689** | 0.642** | 0.980 | | |
| EIM5 | 0.651** | 0.626** | 0.707** | 0.656** | 0.951 | |
| EIM6 | 0.627** | 0.614** | 0.610** | 0.590** | 0.708** | 0.963 |

| Observe Variable | EP1 | EP2 | EP3 | EP4 | EP5 | EP6 |
|------------------|---------|---------|---------|---------|---------|-------|
| EP1 | 0.916 | | | | | |
| EP2 | 0.793** | 0.897 | | | | |
| EP3 | 0.614** | 0.650** | 0.956 | | | |
| EP4 | 0.531** | 0.649** | 0.640** | 0.922 | | |
| EP5 | 0.570** | 0.558** | 0.692** | 0.619** | 0.954 | |
| EP6 | 0.489** | 0.515** | 0.535** | 0.673** | 0.632** | 0.933 |

Statistical significance is 0.01, n = 334

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = 0.941

Bartlett's Test of Sphericity Approx. Chi-Square = 4680.907, df = 171, Sig.= 0.000

The diagonal value in the matrix is from The Measures of Sampling Adequacy (MSA) for each variable.

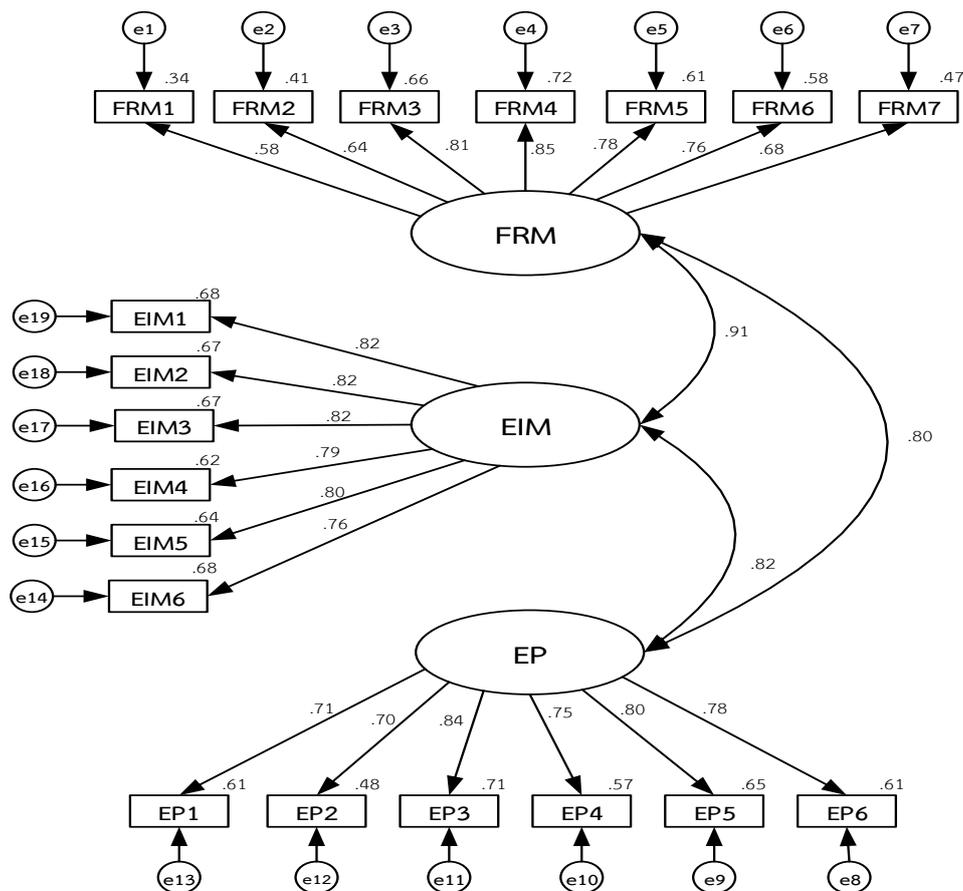


Figure 2 Financial risk measurement model of enterprise internal management and enterprise performance

The result of the First Order Confirmatory Factor Analysis of the financial risk measurement model (FRM), enterprise internal management (EIM), and enterprise performance (EP), referred to Figure 2, shows that the model is corresponding to empirical evidence, whose χ^2/df is 1.114, which pass the criteria for χ^2/df acceptance that specifies that the value must be lower than 5.0, p-value is 0.191. Goodness of Fit Index (GFI) is 0.961, Adjusted Goodness of Fit Statistic (AGFI) is 0.934, and Comparative Fit index (CFI) is 0.997. The GFI AGFI, and CFI are according to the acceptance criteria, which specifies that the value must be higher than 0.9. Root Mean Square Error of Approximation (RMSEA) is 0.019, which pass the criteria for acceptance at 0.08. The results show that the model corresponds to empirical evidence (Blunch, 2013, pp. 117-118; Byrne, 2016, pp. 122-123; Vanichbuncha, 2014, pp. 98-99). When considering factor loading in the model, it is found that the factor loading of the 19 observe variables are positive and is statistically significant at 0.001 for each variable. That means Confirmatory Factor Analysis model for 19 enterprise internal management and enterprise performance observer variables has construct validity.



Variable and Measurement Quality Assessment

This study verifies Convergent Validity by considering Average Variance Extracted (AVE). The result shows that AVE of variables financial risk management (FRM), enterprise internal management (EIM), and enterprise performance (EP) range between 0.583 and 0.702, which are higher than 0.5. That means indicator questions in this study has Convergent Validity. When considering Construct Reliability (CR), it is found that the values range between 0.857 and 0.873, which are higher than 0.7. The factor loading of each indicator questions ranges between 0.585 and 0.893, which is higher than 0.5. This means that the indicator questions of each variable have Construct Reliability (Hair, Black, Babin & Asderson, 2010, pp. 709-713). The details are shown in Table 2.

Table 2 Study results of enterprise internal management and enterprise performance level

| Factor / Measurement Item | | Mean | Standard Deviation | Factor Loading |
|---|------------------------------------|-------------------------|--------------------|----------------|
| Financial Risk Management (FRM) | | CR = 0.873, AVE = 0.583 | | |
| FRM1 | Risk from accounting system | 6.01 | 0.663 | 0.585 |
| FRM2 | Risk from financial technology | 5.45 | 0.677 | 0.649 |
| FRM3 | Risk from seller and buyer | 5.63 | 0.721 | 0.802 |
| FRM4 | Risk from policies and regulations | 5.74 | 0.749 | 0.844 |
| FRM5 | Risk from accounting methodology | 5.46 | 0.805 | 0.820 |
| FRM6 | Risk from asset management | 5.46 | 0.699 | 0.797 |
| FRM7 | Risk from business advantages | 5.20 | 0.782 | 0.811 |
| Enterprise Internal Management (EIM) | | CR = 0.857, AVE = 0.702 | | |
| EIM1 | Internal provisioning | 5.72 | 0.740 | 0.839 |
| EIM2 | Digital and technology | 5.54 | 0.686 | 0.860 |
| EIM3 | Quality provisioning | 5.51 | 0.696 | 0.820 |
| EIM4 | Work techniques | 5.56 | 0.660 | 0.771 |
| EIM5 | Financial management | 5.57 | 0.773 | 0.838 |
| EIM6 | Work collaboration | 5.59 | 0.751 | 0.893 |
| Enterprise Performance (EP) | | CR = 0.857, AVE = 0.593 | | |
| EP1 | Return on assets ratio (ROA) | 5.88 | 0.633 | 0.721 |
| EP2 | Return on investments ratio (ROI) | 5.88 | 0.628 | 0.695 |
| EP3 | Return on equity ratio (ROE) | 5.78 | 0.651 | 0.842 |
| EP4 | Return on sales ratio (ROS) | 5.84 | 0.620 | 0.758 |
| EP5 | Cash flow over profit ratio | 5.78 | 0.629 | 0.809 |
| EP6 | Inventory turnover | 5.73 | 0.673 | 0.784 |



Discriminant Validity Assessment is conducted by comparing \sqrt{AVE} of each variable to Correlation Coefficient of the variable and other variables. (Hair et al., 2010: p. 713) The result shows that \sqrt{AVE} of financial risk management variable (FRM), enterprise internal management (EIM), and enterprise performance (EP) are higher than Correlation Coefficient between variables, which means that the indicator questions have Discriminant Validity. The details are shown in Table 3.

Table 3 Result of Discriminant Validity Assessment

| Factor | CR | AVE | Correlation Coefficient | | |
|--------------------------------------|-------|-------|-------------------------|---------|-------|
| | | | FRM | EIM | EP |
| Financial Risk Management (FRM) | 0.873 | 0.583 | 0.764 | | |
| Enterprise Internal Management (EIM) | 0.857 | 0.702 | 0.640** | 0.838 | |
| Enterprise Performance (EP) | 0.857 | 0.593 | 0.556** | 0.642** | 0.770 |

Remarks: The bold and italic number in diagonal is \sqrt{AVE}

** Significant level 0.01

Analysis Result of Agreement of Structural Equation Model

Analysis of agreement of structural equation model of financial risk management (FRM), enterprise internal management (EIM), and enterprise performance (EP), against empirical evidence shows that the model is corresponding to the empirical evidence, as shown in Figure 3, whose χ^2/df is 1.074, which passes the acceptance criteria of χ^2/df at 0.5, p-value is 0.279. Goodness of Fit Index (GFI) is 0.962, Adjusted Goodness of Fit Statistic (AGFI) is 0.936, and Comparative Fit index (CFI) is 0.998. The acceptance criteria for GFI AGFI and CFI is 0.9. Root Mean Square Error of Approximation (RMSEA) is 0.015, which passes the acceptance criteria for RMSEA at 0.08, as shown in Figure 3 (Blunch, 2013, p. 120; Byrne, 2016, p. 98; Vanichbuncha, 2014, p. 116)

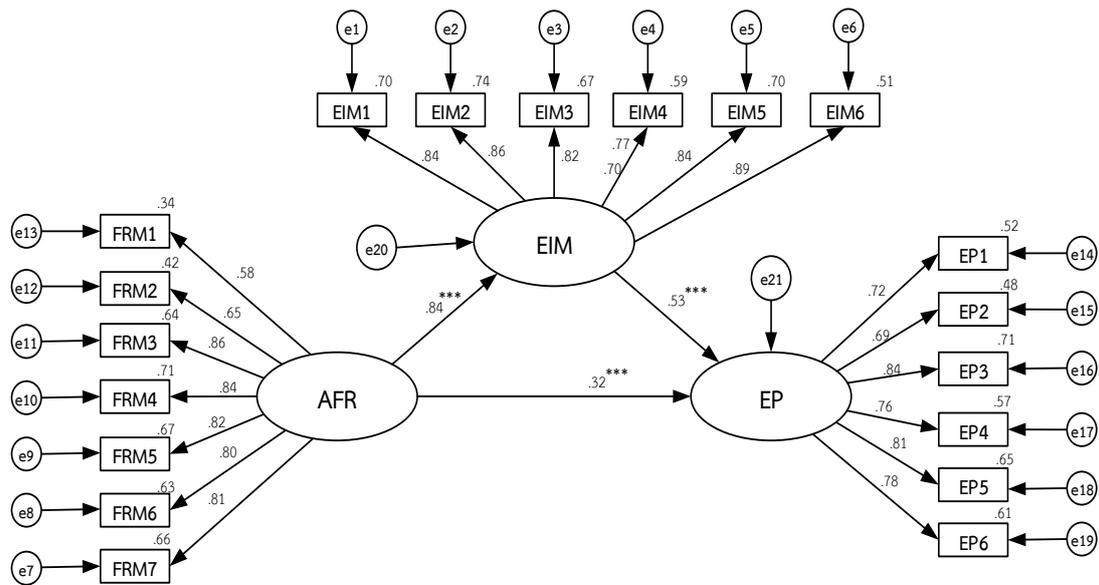


Figure 3 Structural Equation Model for financial risk management, enterprise internal management, and enterprise performance

Hypotheses Verification

Hypotheses Verification Result and Analysis on Influence of Causal Variables that Affect Enterprise Performance

The result of hypothesis H1a verification “financial risk management positively and directly influences enterprise performance” shows that the hypothesis is to be accepted at statistical significance value of 0.01, p-value is 0.00, and factor loading is 0.320.

The result of hypothesis H1b verification “financial risk management positively and directly influences enterprise performance via enterprise internal management” shows that the hypothesis is to be accepted at statistical significance value of 0.01, p-value is 0.00, and factor loading is 0.446.

The result of hypothesis H2 verification “financial risk management positively and directly influences enterprise internal management” shows that the hypothesis is to be accepted at statistical significance value of 0.01, p-value is 0.00, and factor loading is 0.838.

The result of hypothesis H3 verification “enterprise internal management positively and directly influences enterprise performance” shows that the hypothesis is to be accepted at statistical significance value of 0.01, p-value is 0.00, and factor loading is 0.532.

Analysis Result on Influence of Causal Variables that Affect Enterprise Performance

Path Analysis, consisting of Direct Effect (DE), Indirect Effect (IE), and Total Effect (TE), shows that financial risk management positively and directly influences enterprise internal management at factor loading value of 0.838, with statistical significance at 0.01. Positive-Direct Influence Path of financial risk management on enterprise performance shows that financial risk management directly and indirectly influences enterprise performance. Directly, the factor loading value is 0.320, with statistical significance value at 0.01. Indirectly, the factor loading value is 0.446, with statistical significance value at 0.01. For Influence Path of enterprise internal management, it positively and directly influences enterprise performance with factor loading value at 0.532, statistical significance value at 0.01, as shown in Table 4.

Table 4 Path Analysis Result

| Path Analysis | | DE | IE | TE | Hypotheses Verification |
|---------------|-------|-----------|----------|-----------|-------------------------|
| FRM | → EIM | 0.838 *** | - | 0.838 *** | Accept H2 |
| FRM | → EP | 0.320 *** | 0.446*** | 0.766 *** | Accept H1a |
| EIM | → EP | 0.532 *** | - | 0.532 *** | Accept H1b and H3 |

Conclusion

The structural equation model of factors affecting financial risk management, enterprise internal management, and enterprise performance in the said industry consists of components of latent variables that influences each other, namely 1) Financial risk management positively and directly influences enterprise internal management, 2) Financial risk management positively and directly influences enterprise performance, and 3) Internal management positively directly influences enterprise performance. The conclusion could be drawn: 1) Financial risk management factor (FRM) consists of 7 variables; the first 3 significant indicator weight values are risk from policies and regulations (FRM4) with factor loading at 0.844 and R^2 at 71.20%, risk from accounting methodology (FRM5) with factor loading at 0.820 and R^2 at 67.30%, and risk from business advantages (FRM7) with factor loading at 0.811 and R^2 at 65.80%. 2) Enterprise internal management factor (EIM) consists of 6 variables; the first 3 significant indicator weight values are work collaboration (EIM6) with factor loading at 0.893 and R^2 at 51.40%, digital and technology (EIM2) with factor loading at 0.860 and R^2 at 73.90%, and Internal provisioning (EIM1) with factor loading at 0.839 and R^2 at 70.40%. 3) Enterprise performance factor (EP) consists of 6 variables, the first 3 significant indicator weight values are return on equity ratio (ROE) (EP3) with factor loading at 0.842 and R^2 at 71.00%, Cash flow to net income ratio (EP5) with factor loading at 0.809 and R^2 at 65.40%, and inventory turnover (EP6) with factor loading at 0.784 and R^2 at 61.50%.



The result shows the empirical evidence that automotive and automotive parts manufacturers and traders in Thailand should support operations related to financial risk management and enterprise internal management, as they lead to effective enterprise performance.

For financial risk management, in addition to liquidity management of cash inflow and cash outflow of the enterprise, executives need to consider appropriate management of capital structure ratio to ensure the continuity of operation. Also, in enterprise internal management, there should be precise role specification that corresponds to the tactics of the department. For sustainable success, the specification should focus on balancing 4 core factors: enterprise development, finance, work process, and customers. Furthermore, using balance scorecard with internal control and risk management would yield benefits to the enterprise in a long run. (Wisuteewong & Rompho, 2015, pp. 127-134)

Contributions

This study provides the academical benefit as a guideline for confirmatory factor analysis of structural equation model. It also shows the confirmatory factor of causal relationship between accounting and financial risk management, enterprise internal management, and enterprise performance. Therefore, we offer suggestions regarding those factors as follow.

In the aspect of financial risk management, executives should promote accounting officers' constant deepening of knowledge to comply with accounting standards, so that accounting system and accounting methodology of the organization follow regulations. Executives should also prioritize operation evaluation for effectiveness to improve reliability of financial report. In the aspect of enterprise internal management, executives should promote the use of digital technology in work collaboration to foster new work techniques or creativity in product and service improvement, in response to customers' need. Additionally, executives should build work culture that focuses on quality of products and services by conducting quality control assessment. Executives should also focus on understanding the environment of business competition, to consider the right technology to bring in, and to increase effectiveness in raw material management, production, product management, as well as tracking customer's need.

Discussion

Financial risk management positively and directly influences enterprise internal management, corresponding to the research by Zhang, Nie, Huang & Chen (2016, pp. 764-768) that studied strategy for acquiring capital for supply chain in medium and small sized community enterprise. It was found that the strategy that includes collaborations responded better to the consumers, since distributor learned about consumers' need better than suppliers. Gao (2020) studied acquiring capital from banks for pricing regulation strategy for competition. It was found that the resulted capital and interest rate from the banks influenced production cost and enterprise internal management, but had no influence on pricing



regulation in retail. The reason was that the enterprise accepted the obligation from loans and interest rate as a part of enterprise internal management, which indicated that financial risk management influenced enterprise internal management.

Financial risk management positively and directly influences enterprise performance, which corresponds to Huijun & Jing (2016, pp. 1-4) studied working capital ratio of account receivable in supply chain of international enterprises; regarding credit risk that took impact from uncertainty in needs and fluctuation of currency exchange that influenced working capital in medium and small businesses, the currency exchange and compensation for contract termination influenced working capital ratio of medium and small businesses at high level. Similarly, Chunying et al. (2020) studied financial variables that influenced enterprise performance. The study proposed financial model to compare financial risk factors and enterprise accounting management when different financial agreements are used. It was shown to influence enterprise operation in regulating financial risk prevention factors, liability tracking, and guarantee regulation between trade partners. Huang, Yang & Tu (2020, pp. 1-12) studied financial decision-making model in supply chain under financial restrictions. The studied specified 3 models for financial decision-making: Trade Credit Financing (TCF), Credit Guarantee Financing (CGF) and Buyback Guarantee Financing (BGF), whose under restrictions found that, for loans to enterprises in supply chain, the loaner must accept risk in enterprise performance assessment and financial risk management of the loanee. This indicated that financial risk management is a factor that influenced enterprise performance.

Enterprise internal management positively and directly influences enterprise performance, which corresponds to Jabbour, Jabbour & Sarkis (2019, pp. 11-30) that conducted literature study on enterprise management model that influenced effectiveness and sustainability of supply chain. The enterprise internal management influenced effectiveness of enterprise operation, and impacted sustainability of the whole supply chain. Similarly, Babich & Kouvelis (2018, pp. 1-18) conducted literature study on interface of finance, operations, and risk management. Many research studies on marketing, international trading, and corporation management showed the correlation between finance, management, and risk management, which influenced product quality and enterprise performance. Correspondingly, Zimmer, Frohling, Breun & Schultmann (2017, pp. 96-109) found that enterprises that realized the importance of verification and tracking of enterprise operation and enterprise internal management could prevent risk from enterprise performance. Likewise, Yang & Birge (2018, pp. 3496-3970) studied financial investment risk sharing, specifically the guideline in expanding loan limits for enterprises that were parts of supply chain. Most investment through expanding loan limits relied on information from the prediction on future revenue, which was the result from consumer's demand assessment on the product, along with current financial status of the enterprise, as well as risk management and financial reliability of the enterprise. Since expanding loan limits required the investor to accept the risks together with the loanee, this implied that financial risk and enterprise internal management influenced enterprise performance.



Recommendations

For future work, studies for main activity group and service provider industry group should be conducted separately. Furthermore, risks regarding changes from internal combustion engine to electric engine should be studied, to find the relationship between cost of technology change and enterprise performance.

References

- Angsuphan, P. (2019). *Risk Management Report: Siam Steel Service Center Public Company Limited*. Retrieved March 28, 2019, from <http://www.ssscth.com/shearholder/2/243.pdf>.
- Attamana, S. (2002). *Organizational behavior, theory, and application*. Bangkok: Thammasat Univesrity Press.
- Babich, V., & Kouvelis, P. (2018). Introduction to the special issue on research at the interface, operations, and risk management (iForm): recent contributions and future directions. *Manufacturing & Service Operations Management*, 20(1), 1-18.
- Blunch, N. (2013). *Introduction to Structural Equation Modeling Using IBM SPSS Statistics and AMOS* (2rd ed.). Croydon: SAGE.
- Byrne, B. (2016). *Structural Equation Modeling with AMOS Basic Concepts, Applications, and Programming* (3rd ed.). New York: Routledge.
- Chamnanchang, K. (2013). *Knowledge audit, knowledge management and organizational performance: scg paper public company limited*, Thesis, Master of Business Administration, Faculty of Business, Economics and Communications, Naresuan University.
- Chunthapong, S., & Tonghui, T. (2020). *The Global economy and Thai economy post COVID-19*. Retrieved April 30, 2021, from https://www.bot.or.th/Thai/BOTMagazine/Pages/256303_CoverStory.aspx.
- Chunying, T., Songyam, C., Zhaobo C., & Ding, Z. (2020). *Why and How Does a Supplier Choose Factoring Finance?. Mathematical Problems in Engineering*, 2020,14. <https://doi.org/10.1155/2020/9258646>
- Gao, J. (2020). *Price Strategy of Competitive Supply Chain Based on Bank Financing. Mathematical Problems in Engineering*, 2020,13. <https://doi.org/10.1155/2020/3272348>.
- GSB Research. (2019). *Automotive industry*. Retrieved May 10, 2019, from https://www.gsb.or.th/getattachment/07c2aa6e-9bc2-4682-8a9e-90b057178223/motor_61_62.aspx.
- Guragai, B., & Hutchison, D. P. (2020). Financial performance following discontinued operations, *Review of Accounting and Finance*, 19(4), 429-447.



- Hair, F., Black, C., Babin, J., & Asderson, E. (2010). *Multivariate data analysis* (7th ed.). New Jersey: Prentice Hall.
- Huang, J., Yang, W., & Tu, Y. T. (2020). Financing mode decision in supply chain with financial constraint. *International Journal of Production Economics*, 220, 1-12.
- Huijun, H., & Jing, Z. (2016). Recourse accounts receivable factoring financing ratio research based on multinational supply chain. *2016 13th International Conference on Service Systems and Service Management (ICSSSM)*, (pp. 1-4). Institute of Electrical and Electronics Engineers (IEEE).
- Hwang, H. J. (2014). A proposal for an open-source financial risk model. *Journal of Financial Regulation and Compliance*, 22(3), 219–234.
- Jabbour, C., Jabbour, A., & Sarkis, J. (2019). Unlocking effective multi-tier supply chain management for sustainability through quantitative modeling: Lessons learned and discoveries to be made. *International Journal of Production Economics*, 217, 11–30.
- Jean, R., Sinkovics, R., & Zagelmeyer, S. (2018). Antecedents and Innovation Performance Implications of MNC Political Ties in the Chinese Automotive Supply Chain. *Management International Review*, 58, 995-1026.
- Mishra, K. B., Rolland, E., Satpathy, A., & Moore, M. (2019). A framework for enterprise risk identification and management: the resource-based view, *Managerial Auditing Journal*, 34(2), 162-188.
- Pavabutr, P. (2008). Foreign exchange crisis and financial competitiveness. *Academic Journal 60 Years: On the occasion of the 60th anniversary of the Faculty of Commerce and Accountancy Thammasat University*, 1(1), 179-219.
- Pipatanasern, A. (2011). *Accounting for Executives and Non-Accountants*. (2nd ed.). Bangkok: Dktoday.
- PricewaterhouseCoopers. (2007). *Risk management guidelines*. (2nd ed.). Bangkok: PricewaterhouseCoopers
- Quang, H., & Hara, Y. (2017). Risk and performance in supply chain: the push effect. *International Journal of Production Research*, 56(4), 1369-1388.
- Sangsunt, P., & Khongsawatkiat, K. (2009). *Fundamentals of corporate finance*. Bangkok: McGraw-Hill.
- Sawat, W., & Tiyyadah, P. (2021). Relation between logistics and enterprise performance of automotive industry in Thailand. *Silapakron University Journal*. 41(4), 78-89.
- Shin, H., & Park, S. (2020). The internal control manager and operational efficiency: evidence from Korea, *Managerial Auditing Journal*, 35(7), 979-1006.



- Sritiprat, T. (2014). *Leadership in the planning process Coordination and operations that affect the quality of working life in the organization. Case study: employees of Telecommunication Company in Bangkok*. Independent study, Master of Business Administration Program, Graduate School, Bangkok University.
- Tamajai, A. (2020). *Assess the economy post global epidemic COVID-19*. Retrieved March 30, 2020, from <https://www.bangkokbiznews.com/news/detail/870698>.
- Tantunsat, W. (2009). *The relationship between knowledge management and organization performance: A case study of Panomsarakham Hospital Chachongsao*, Thesis, Master of Public Policy and Public Management, Faculty of Graduate Studies, Mahidol University.
- Thai Autoparts Manufacturers Association. (2018). *Thailand Automotive Industry Directory 2018*. Samut Prakan: Phongwarin Printing Limited.
- Thailand Automotive Institute. (2012). *Automotive industry master plan 2012-2016*. Bangkok: Ministry of Industry
- Thansettakij. (2020). *Automotive industry hopes to sell 1 million vehicles in A.D.2020* . Retrieved February 20, 2020, from <https://www.thansettakij.com/content/417687>
- Tiyadah, P., & Sawat, W. (2020). The Causal Relationship of Risk in Accounting and Finance, Firm Internal Management, and Firm Performance within Supply Chain of Automotive and Automotive Parts Industry in Thailand. *Journal of Economics and Management Strategy*, 7(2), 75-92.
- Tongsokhowong, A. (2017). *Administrative Cost Accounting: Performance Assessment and Equilibrium Management*. Retrieved March 20, 2017, from <https://home.kku.ac.th/anuton/966232/Chapter16.pdf>.
- Vanichbuncha, K. (2014). *Analysis Structure Equation Model (SEM) with AMOS*. (2nd ed.). Bangkok: Samrada.
- Wisuteewong, G., & Rompho, N. (2015). Linking Balanced Scorecard and COSO ERM in Thai Companies. *Journal of Management Policy and Practice*, 16(2), 127-134.
- Yang, S. A., & Birge, J. R. (2018). Trade credit, risk sharing, and inventory financing portfolios. *Management Science*, 64(8), 3469-3970.
- Yongpisanphob, W. (2020). *Automobile Industry/Business Trends 2020 - 2065*. Retrieved January 15, 2020, from https://www.krungsri.com/bank/getmedia/a18aad1f-e16c-44d5-858f-df5e90fe8eab/IO_Automobile190805_TH_EX.aspx.
- Yossomsakdi, C. (2007). *Accounting for Administrators: A Basic Knowledge*. Bangkok: MT Press.



-
- Zhang, J. J., Nie, T., Huang, J. Z., & Chen, Y. (2016). Joint financing strategy for a cash-constrained supply chain. *2016 IEEE International Conference on Industrial Engineering & Engineering Management (IEEM)*, 764–768.
- Zimmer, K., Frohling, M., Breun, P., & Schultmann, F. (2017). Assessing social risks of global supply chains: a quantitative analytical approach and its application to supplier selection in the German automotive Industry, *Journal of Cleaner Production*, 149, 96-10.