THE INFLUENCE OF RISK PERCEPTION AND PROACTIVE BEHAVIOR ON PERFORMANCE OF FIRMS IN THE STOCK EXCHANGE OF THAILAND: THE MODERATING ROLES OF ORGANIZATIONAL UNITS AND TYPES OF FIRMS

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ABSTRACT

Title of Dissertation	THE INFLUENCE OF RISK PERCEPTION AND PROACTIVE BEHAVIOR ON PERFORMANCE OF FIRMS IN THE STOCK EXCHANGE OF THAILAND: THE MODERATING ROLES OF ORGANIZATIONAL UNITS AND TYPES OF FIRMS
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Research on the role of risk perception and proactive behavior on firm performance has gained importance, but little is known about how the types of firm and different roles of managers might influence the outcomes of firm performance when they perceive risk and take proactive actions. This study aimed to investigate the effects of firms' perceived risk on managers and their proactive behaviors and the effects of firm managers' proactive actions on firm performance in terms of financial performance and risk management concepts. Using a questionnaire survey and financial database, data from 488 respondents representing 231 firms listed on the SET (The Stock Exchange of Thailand) was collected. Results from ordinary least squares regressions found a significant associations among risk perception, proactive behavior, and firm performance. The roles of the type of firm and organizational units significantly moderated the relationships among risk perception, proactive behavior, and firm performance. These findings suggest that 1- perceived risk tends to increase proactive behavior in managers who work at below average target firms and work in line function units and 2- that the proactive behavior of firm managers who work in firms with a formal risk management department and work in line function units tends to enhance firm performance and mitigate risk. In terms of organizational implications, our findings would suggest that establishing risk management systems will enhance firm performance in terms of financial performance and risk management concepts.

Keywords: risk perception, proactive behavior, firm performance, type of firm, organizational units

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Sippavit Wongsuwatt

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ABBREVIATIONS

Abbreviations	Equivalence
CFA	Confirmatory Factor Analysis
CRO	The Chief Risk Officer
CSP	Corporate Social Performance
EBITDA	Earnings before Interest, Taxes, Depreciation and Amortization
EFA	Exploratory Factor Analysis
EP	Employee Productivity
FRMD	The Formal Risk Management Department
GR	Growth in Revenues
MAI	The Market for Alternative Investment
MB	Market-to-Book
OLS	Ordinary Least Squares
P/E	Price-to-Earnings
PMT	The Protection Motivation Theory
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SEC	The Security Exchange Commission
SET	The Stock Exchange of Thailand
VaR	Value at Risk
VIF	The Variance Inflation Factor

CHAPTER 1

INTRODUCTION

1.1 Background

Risk perception, which is presently one of the tool for managing risk for businesses, is still a relatively new concept for firms in Thailand, especially with regard to holistic risk management. The consequences for firms if they do not adequately perceive their risks and promptly take action to mitigate them is an issue that has not been popular because the knowledge of enterprise risk management 10 or 20 years ago was focused on actions to respond to what had already happened (Fraser, Simkins, & Narvaez, 2014, p. 628). For example in respect to perceived risk in the context of firms in Thailand, global economic crisis in 2009 caused the Thai export sector contracted significantly which, in turn, caused knock-on impacts affecting manufacturing production and business confidence, as well as domestic consumption and investment (Monetary Policy Group, 2010). The cost of damage was hard to estimate, and led to the bankruptcy of many businesses across the globe, including Thai firms (Krungsri Research, 2009). At that time, in Asia, many countries were faced the risk of recession and their industrial outputs experienced the weakest growth rates in several years. With overcapacity in many industries, firms had to scale back production and lay off workers.

In 2011, Thailand faced major flooding that led to an insufficient level of production and revealed the downside risks of just-in-time procurement to the firms which failed to take into consideration the potential sources and impacts of risks and to assess them systematically (Chongvilaivan, 2012). The perceived risks to a firm refers to how firms can perceive and predict the impact of a risk and its consequences which may affect the key business operations of the firm and, eventually, become critical problems, such as insufficient turnover, discontinuity in business, and bankruptcy. Thus, the key problem for firms is that, while most firms are focused on

efforts to improve production efficiency, they downplay the downside risks related to business operations. The concept of risk, which considers the potential of an occurrence along with its potential consequences, is an idea that widely applies but frequently misunderstood (Goerlandt & Montewka, 2015). Moreover, what is considered to be a risk depends on the perception of the person and how they assess the risk attributes and define an occurrence and its potential consequences. Fundamentally, the assessment and identification the sources of risk need to be carried out systematically. It is difficult for firms to manage risk without accurate information about their risks. According to this reason, perception of risks is necessary for them to know the potential of an occurrence along with its potential consequences. Not only do small businesses and entrepreneurs need to adjust themselves, but a large firms and mass production firms also have to cope with several types of risks.

The issues currently related to risk management must be evaluated with an understanding of how they have evolved over time. First, many firms familiar with risk management have traditionally viewed it as a specific point of risk relevant only to that unit and would not share risk information with others in the same firm. They were focused on their unit's specific risks and try to solve any problems by themselves. Thus, historically, the risk management perspective of many firms was a basic viewpoint toward an organizational risks (Gordon, Loeb, & Tseng, 2009). Next, firms tended to take a more holistic viewpoint of risk management, for example approaching risk assessment collaboratively with other departments in the same firm or using partnership methods to manage organizational risks. Finally, most firms now apply risk management concepts comprehensively and coherently as an instrument to improve their firm's performance (Bromiley, McShane, Nair, & Rustambekov, 2015).

One significant component of risk management is risk perception, which will allow firms to recognize risks and understand their potential impact. When firms can perceive risks well enough, then they can create methods to manage the risks effectively. Risk perception, the implicit evaluation of occurrence and consequences (Sjöberg, Moen, & Rundmo, 2004), is associated with several negative outcomes from probabilities estimation (Montibeller & Von Winterfeldt, 2015). Understanding the value of risk perception leads to serious considerations for an organization's

management. With regard to businesses, not only should the business owner understand what types of risk impact the business, but all of the employees in an organization have to be able perceive these risks and contribute to managing them.

In this study, the researcher focuses on firms registered to be members of the Stock Exchange of Thailand (SET) that increased from 462 in 2007 to 712 in 2019. There are 8 types of industries included 1) Property and Construction, 2) Financials, 3) Agro & Food Industry, 4) Technology, 5) Services, 6) Consumer Products, 7) Industrials, and 8) Resources (Stock Exchange of Thailand, 2019). Presently, firms face more complicated operations to conduct their business, complex situations while carrying out their business, multifunctional processes related to manufacturing products, and collaborative strategies to deal with competitors. The factors that influence firms include changes, technologies, innovations, competitors, and external factors. Firms in each industry face specific risks that are key factors which can harm firms in several ways. For example, firms in the service industry have a serious risk related to customer trends that cannot be accurately predicted or forecasted; technology firms have serious risks related to technological changes that may reduce business opportunities and competitiveness; firms in the property and construction industry face significant risks associated construction which may affect neighboring community and the environment.

One of the main purposes of a firm is finding ways to advance the returns on business operations, such as using mass production, promoting differentiation, or creating a competitive advantage. Moreover, the returns of firm can be indicated by looking financial aspects, such as Return on Assets (ROA), Return on Equity (ROE), Sales, Profit Margin on Sales, Growth of a firm, or the Market Value of a firm (Atoom, Malkawi, & Al Share, 2017; Kanapickienė & Grundienė, 2015; Meriç, Kamışlı, & Temizel, 2017; Penman, 2015). Most of firms listed on the SET had positive performance results, such as good profitability, growth, or market value: whereas some had negative results that were represented by volatility and uncertainty about the firm's performance. How firms listed on the SET that cannot maintain positive performance indicators react to negative circumstances and manage the risks to create a more positive outcome must be taken into account, as well.

One of primary factors driving business to achieve goals (Rosemann & vom Brocke, 2015) is the key role employees play in meeting any unusual occurrences the firm encounters and solving of the related problems, especially first line managers who directly face the risks and needed to make decisions immediately. Moreover, all managers should understand how to calculate the likelihood that an incident may take place and, it is does, its possible future consequences. It is argued by Wilde, Robertson, and Pless (2002) that a person simply does not have sufficient ability, knowledge, or intent to change their behavior to keep risk at stable level. Also, it may influence managers' decision making behavior.

In this study, the researcher focuses on working behaviors, called "proactive behaviors", which prompt employees to initiate opportunities and act on them. J. Michael Crant (2000) stated that proactive behavior, an action in alignment with the direction of organizational behaviors, depends on two broad aspects; individual differences and contextual factors. This perspective refers to characteristics of their work, where in workers try to create conditions that lead to favorable environments. However, Parker, Williams, and Turner (2006) considered proactive behavior as having two dimensions. The first one being implementing proactive ideas to improve the workplace by either voicing the idea to others, or self-implementing the idea. Their second dimension is proactive problem solving to prevent the reoccurrence of a problem by either addressing its root cause, or solving it, in an unusual and nonstandard way. Proactive behaviors from employees may generate a wide range of benefit to firms (Elizabeth Wolef Morrison & Milliken, 2000). Engaging in proactive behavior refers to taking control and making things happen, rather than passively watching things happen (Parker, Bindl, & Strauss, 2010). Capability to correctly make risk assessments of an event, or an actions' results, operates at the individual qualitative level and is dependent on the individual's own risk perception competency. It requires managers to be more proactive in performing their duties, which has increasingly become an essential job performance component (J. Michael Crant, 2000). New demands on corporations to analyze unexpected issues are the focus of this study to examine the mechanisms and relationships among perceived risks and the proactive behaviors of mangers in working in relation to firm performance in terms of both financial performance and risk management concepts.

In regard understanding the perspective of the firms listed on the SET related to these issues, the researcher crafted the following four research questions. First, what is the effect of risk perception on proactive behavior of managers who are responsible for focusing on functional operations, monitoring tasks, leading subordinates, solving problems, and decision making in the operations of the firms listed on the SET? Second, what is the effect of proactive behavior on firm performance? Next, how do the type of firm and organizational unit moderate the effect of risk perception on proactive behavior? Finally, how do the type of firm and organizational unit moderate the effect of proactive behavior on firm performance?

1.2 Significance of the Study

The findings of this study will benefit of the Stock Exchange of Thailand (SET) by promoting important issues about risk management for their members by clarifying and encouraging the use of risk management concepts in business operations, which can be a crucial instrument for firms to manage unexpected occurrences and mitigate their negative consequences. Additionally, it will provide encouragement for the SET's members to improve firm performance in terms of financial performance and risk management concepts by promoting improved risk perception and working behavior of their employees. Furthermore, the SET listed firms can use employee behavior and firm performance concepts to expand their knowledge about measuring financial performance and risk management approaches based on the results, as well as increasing their alternatives for sustaining firm performance in terms of risk and return. Managers will find behavioral guidance on what they should do to perceive risks and take proactive actions to support the firm's business operations because they need to make decisions to solve problems in the workplace when they are perceived, or recognized, to avoid negative occurrences that might impact their firms. For researchers, the study will help them uncover potential areas of investigation, such as other elements of risk management process, other working behavior perspectives, and other perspectives of performance indicators, in need of further academic research. Moreover, the stakeholders of firms listed on the

SET can use the findings as information to be considered when assessing the context of firms listed on Thailand's SET.

1.3 Statement of the Problem

The problem of volatility in a firm's business operations is a critical factor affecting an organization's the main functions. One example is cash flow volatility, which is costly, as it affects a firm's investment policy by increasing both the likelihood, and the costs, of having to raise external capital (Minton & Schrand, 1999). This problem also affects many firms listed on the SET because of changes, technologies, competitors, innovations, and external factors which, sometimes, are unforeseeable and uncontrollable factors. Thus, firms face problems related to volatility which, in turn, might lead to business continuity problems and, eventually, to declining investor confidence. If firms can not accurately perceive the cause of the problems and their consequences, they will have to reactively cope with several types of risk, which, in turn, becomes another risk factor endangering the firm's performance improvement. Moreover, if firms face problems related to their employees' ability to perceive risks that are directly related to the firm's operation, it will directly lead to risks going undetected. When firms cannot discern the volatility in their business operations, they may fail to discern important information about their risks and the issues that should be their main priority. They also face problems regarding financial performance in terms of profitability, growth, and market value, which lead to internal problems such as failing to achieve expected outcomes, fluctuations in profitability, volatility of their market value, and other undesirable situations affecting business operations. These issues affect firm performance and are big problems, or risks, for firms listed on the SET, and they are also big issues of concern for the firms' stakeholders.

Secondary data on the organizational structures of firms were analyzed and presented by the researcher to determine which firms had formal risk management departments to manage firm wide risks simultaneously and efficiently. Firms were separated into two groups; those with, and those without, risk management departments. On the one hand, 49.52 percent of the firms listed on the SET had formal

risk management departments in their organizational structure. The remaining 50.48 percent of firms listed on the SET did not have a formal risk management department. In addition, the researcher analyzed return on asset of the firms establish their financial performance based on whether their ROA status was stable (the return on assets was stable indicated as lower value than an average variance of ROA of industry) or unstable (return on assets fluctuated indicated as higher value than an average variance of ROA of industry). According to the results, 80.47% of firms with a formal risk management department had stable ROA, whereas is the other 19.53% were considered unstable. Conversely, only 64.75% of firms without formal risk management departments were found have stable ROA, with the remaining 35.25% being considered unstable. The summary of industries, as shown in figure 1.1, shows that most firms with formal risk management departments in their organizational structure have been maintaining stable ROA. This condition supports the statement of the problem and implies that it is important for firms the occurrence of risk as important and to make risk awareness a priority. However, the results of a firm's return on assets is dependent on many related factors.

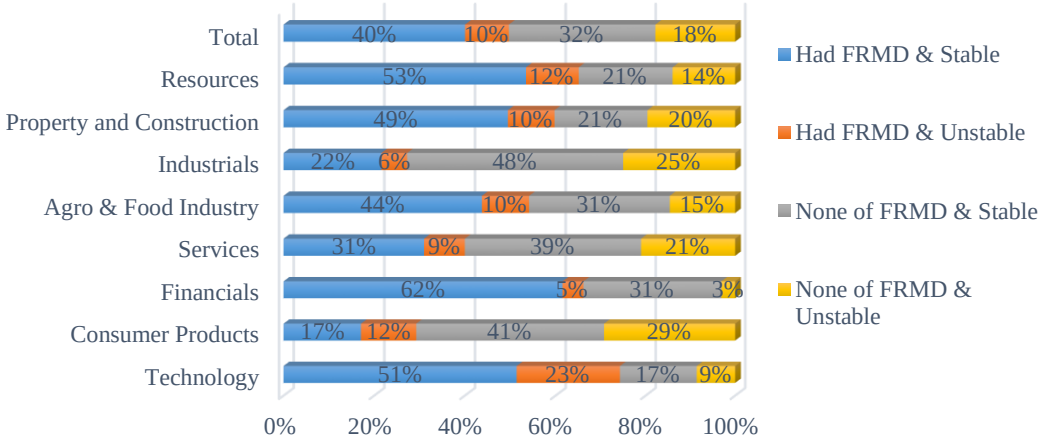

Figure 1.1 The Summary of Firms and the ROA Status classified by Industry

Source: https://www.set.or.th/set/commonslookup.do

FRMD: Formal Risk Management Department

In this study, the researcher proposed to examine perceived risk and employee behavior factors that have an impact on business operations. The researcher employed quantitative approaches to gather both primary and secondary data and information with the objective of investigating firms' performance using financial performance concepts, risk management concepts, staff behavior, and encouraging firms' knowledge of holistic risk management. Many factors influence firm performance, which can make it difficult for firms to perceive risks and their consequences. Some of firms listed on the SET may face hard times and flounder for survival, even though they are one of the largest firms in Thailand. Firms have to enhance the confidence of the stakeholders who are directly related to the firm's operations, such as shareholders, investors, employees, suppliers, and customers. Thus, one way of improving firm performance in terms of both financial performance and risk management concepts would be the important issue of firm in considering appropriated approaches. In this study, the elements of improving this performance includes the risk perception and proactive behavior of manager that may influence and enhance a firm's performance in terms of financial performance and risk management concepts.

1.4 The Objectives of the Study

The main objective of this study is to investigate firms' performance using financial performance, risk concepts, staff behavior, and encouraging firms' knowledge about holistic risk management. In order to achieve this main objective, the following sub-objectives were formulated:

1.4.1 To investigate the relationship between firms' managers' perceived risks and their proactive behaviors.

1.4.2 To investigate the relationship between firms' managers proactive behavior and the firms' performance in terms of financial performance (consisting of profitability, growth, and market value) and risks to firm performance (measured by using variation of financial performance).

1.4.3 To investigate moderating role played by the type of firm and the organizational units of the manager in regard to the relationship between the firms' managers' perceived risks and their proactive behaviors.

1.4.4 To examine moderating effect of the organizational units of the managers and the type of firm on the relationship between the firms' managers' proactive behavior and the firms' performance.

1.5 The Scope of the Study

This study dealt mainly with the performance of firms in which are members of the Stock Exchange of Thailand (SET) and those firms' managers in terms of perceived risk and their behavior. It seeks to understand how the managers' risk perception and proactive behavior influences their firms' performance in terms of financial performance and risk management concepts.

The researcher focused on firms in the Stock Exchange of Thailand (SET) as the unit of analysis for this study. Furthermore, the researcher chose managers of those firms as respondents to complete questionnaires. Afterwards, the researcher developed the assessment processes whereby the data collected was analyzed and interpreted. The firms' information consists of 1) financial information data for the last 5 years (2013 – 2017), including profitability information, firm growth information, and market value information, and 2) the setting up of a formal risk management department. Conducting this study was limited by the obtainability of the actual data provided by the respondents in the questionnaires and the firms' annual reports.

1.6 The Benefits of the Study

This study was conducted to gain an understanding of how managers' risk perception and proactive behavior influenced their firms' performance. The results from this study provide benefits for the following:

1.6.1 The Stock Exchange of Thailand can use this study to campaign for, and promote the benefits of, risk management, risk perception, and proactive behavior in

the workplace that holistically supports firm performance and risk management issues, which are significant components for firms listed on the SET to use in determining their firm strategies.

1.6.2 Firms listed on the SET can use this information to enhance the firms' perspective on risk management concepts that may create alternatives for the firm to develop their internal elements and improve performance in terms of financial performance and risk management. In addition, these results can also help firms to evaluate their human resource viewpoints regarding their employees' behavior in the workplace, such as developing or promoting perceived risk and proactive working skills that are crucial factors to the firms' operation. Moreover, it can help firms to understand, in respect to managerial level, why managers need to be skilled in perceiving risks and how the proactive behavior of managers can improve their performance.

1.6.3 For managers can use this information to guide how they perceive risks and the benefits of proactive behavior in their work. Managers can also improve their capabilities and effectiveness in managing the firm's risks by focusing on how to respond to ensure continuity of business operations with the least amount of interruptions possible and how to shift from loss prevention to revenue protection and generation. Therefore, the results also have implications for managers who are directly responsible for individual and organizational risks by enhancing their understanding of risk perception and proactive behavior on the job.

1.6.4 Firm stakeholders can use this information to guide the industry by comparing the firms' general viewpoints on business operations with regard to short term and long term planning to improve firm performance.

CHAPTER 2

LITERATURE REVIEW, THEORETICAL FRAMEWORK, AND PROPOSED MODEL FOR ANALYSIS

2.1 Literature Review

In the introduction we explained that the main objective of this study is understanding firms' performance using financial concepts, risk concepts, staff behavior, and encouraging firms' knowledge of holistic risk management. The literature review in this chapter reviews the main content consisting of 1) risks faced by firms listed on the SET, 2) risk perception, 3) manager roles in the firm, 4) proactive behavior, 5) firm performance, 6) types of firms, and 7) types of organizational units.

2.1.1 Risks Faced by Firms Listed in the SET

The Stock Exchange of Thailand (SET) had 712 firms in the SET database in 2019, classified into eight industry groups consisting of 1) Property and Construction, 2) Financials, 3) Agro & Food Industry, 4) Technology, 5) Services, 6) Consumer Products, 7) Industrials, and 8) Resources (Stock Exchange of Thailand, 2019). The objective of sorting listed firm by industry is to integrate similar operational functions of firms into the same group which can assist investors in with gathering appropriate investment information and making comparisons among the listed firms. The differences in the industries lead to differences in organizational structure, operational functions, types of employees, firm profitability, firm performance, and, especially, risks faced by the firm. The researcher focused on the different risks that may influence firms in each industry as follows.

2.1.1.1 Property and construction industry

The researcher collected data about risk factors from the 2017 annual reports of 94 firms listed in the property and construction industry via the SET

website, face significant market risks related to the volatility of the firm's returns (Haliza-Asat, Nik-Wan, Haron, Jaafar, & Hassan, 2017). This unpredictability may change because of changes in the economy or business environment (Pang & Yang, 2015). This is followed by operational risks involved in constructing a building, house, condominium, or townhouse that arise from unqualified builders, poorly made prebuilt components, uncertain presales, and highly competitive markets. In addition, a major issue of concern for property and construction firms is the unavailability of an adequate numbers of skilled laborers (Zou, Zhang, & Wang, 2007). Other risks in the construction industry also influence firms, such as strategic risk related to unexpected events happening, compliance risks related to operating under the wrong set of regulations, liquidity risks related to experiencing a cash flow shortage, and foreign exchange risks related to existing surpluses in foreign currencies (Chileshe & John Kikwasi, 2014; Guo, Yiu, & González, 2016; Hildebrand, 2015; Holla, Sudhanvakrishna, Shetty, & Rao, 2018; Jitwasinkul, Hadikusumo, & Memon, 2016; Renuka, Umarani, & Kamal, 2014).

2.1.1.2 Financials industry

Data about risk factors from the 2017 annual reports of 55 firms listed in financial industry group was collected by the researcher via the SET website. The primary risk for firms in the financial industry is credit risks which are caused by several factors, such as the concentration of loans, non-compliance of counterparties, and obligations outside the statement of financial position (SET, 2019). This is followed by market risks, interest rate risks, and liquidity risks that arise from the uncertainty of the firm generating positive returns (Diebold & Yılmaz, 2014; Konishi & Yasuda, 2004). Other related risks in the financial industry that influence firms include strategic risks, systemic risks, operational risks, reputational risks, staff risks, technological risks, and emerging risks (Begley, Purnanandam, & Zheng, 2017; Disyatat, 2011; Fiordelisi, Soana, & Schwizer, 2014; Singh, 2017).

2.1.1.3 Agro & Food Industry

The researcher collected data about risk factors from the 2017 annual reports of 48 firms listed in the agro & food industry sector via the SET website. Strategic risks are the most crucial factor facing firms in the agro & food industry, and they are related to price volatility, operations and investments in foreign countries,

and services of key management (Bank of Thailand, 2010). This is followed by operational risks (including supply chain and production disruption), financial risks related to the unpredictability of net returns to equity owners (including factors such as exchange rate volatility, liquidity risks, interest rate volatility, and goodwill impairment risks), and compliance risks (including factor like legal and compliance issues, and government intervention) (Dary & James Jr, 2018; Fogarasi, Doman, Lámfalusi, & Kemeny, 2015; Nyamah, Jiang, Feng, & Enchill, 2017; Rueda, Garrett, & Lambin, 2017).

2.1.1.4 Technology industry

Firms in technology industry sector dwell on rapid adjustment to ensure the survival of their business operations. Information about their risk factors was obtained from the 2017 annual reports of 35 firms listed in the technology industry sector which were collected by the researcher via the SET website. Business risk is the crucial factor for firms in the technology industry and it is related to external changes in factors such as the economy, technology, prices, and competition (Casper & Whitley, 2004; Yanadori & Marler, 2006). This is followed by operational risks (including things like crashing of their information system and reliance on key persons), financial risks (which include exchange rates, interest rates, credit, and liquidity), sourcing risks (arising from raw material and inventory availability), and disaster risks (including natural disasters) (Chiou, Wu, & Hsu, 2002).

2.1.1.5 Services industry

Information about risk factors from the 2017 annual reports of 98 firms listed in service industry sector was collected by the researcher via the SET website. There are several types of business in the service industry, therefore, the main risks of the firms in this industry are dependent on type of business. For example, hospitality firms are faced by uncertain economic and tourism situations in Thailand that influence the occupancy rate of hotels and resorts. Firms in media and publishing business face rapid consumerism changes that influence future income and firm performance. In general, firms in the service industry have performance risks that directly impact customer loyalty and the firm’s sales (Echchakoui, 2015). Other risks related to the service industry that influence firms include operational risks related to the quality of service, financial risks related to the discrepancy of funds and capital,

and competitive risks arising from fierce market competition (Carballo-Penela & Castromán-Diz, 2015; Das, Verburg, Verbraeck, & Bonebakker, 2018; Desyllas, Miozzo, Lee, & Miles, 2017; Moulaert & Swyngedouw, 2015; Ozturk, 2016).

2.1.1.6 Consumer Products industry

Firms operating in the consumer product industry are faced with significant risks related to a possible economic crisis that would affect the volatility of customers' purchasing. The researcher collected data about risk factors from the 2017 annual reports of 41 firms listed in consumer product industry sector via the SET website. Other related risks in the consumer product industry having an influence on firms include strategy risks related to the quality of materials and financial risks that arising from the price of materials (Forsythe & Shi, 2003; Johnson, 2001; H. L. Lee, 2002; Tate, Ellram, & Kirchoff, 2010).

2.1.1.7 Industrials industry

Information about the risk factors in this sector were collected from the 2017 annual reports of 69 firms listed in industrial sector by the researcher via the SET website. The most influential risks for firms in the industrial sector is industrial risks related to uncertainties related to the production process, such as fluctuations in production and raw material prices, raw material procurement, and balancing demand and supply (Garetti & Taisch, 2012; Mirzapour Al-E-Hashem, Malekly, & Aryanezhad, 2011). Other related risks in the industrial sector affecting firms include financial risks, liquidity risks, market risks, and operational risks (Gebauer, Ren, Valtakoski, & Reynoso, 2012; Gray, Roth, & Leiblein, 2011; Koyuncugil & Ozgulbas, 2012; Rehman, 2013; Tang & Yan, 2010).

2.1.1.8 Resources industry

The researcher collected data about risk factors from the 2017 annual report of 43 firms listed in resource industry sector via the SET website. Business risks related to environmental changes, such as restricted resources, fluctuating prices, and reliance on purchases, are the most vital variable faced by firms in the resources industry (Kemp, 2010). Other related risks effecting the resource industry include operational risks, financial risks, market risks, and external risks (Kemp, Bond, Franks, & Cote, 2010).

In terms of business, success and failure were ultimately determined by three categories of risk (Everett & Watson, 1998). Firstly, there are economy based risks that are related to the chance of the firm's investments being affected by macroeconomic conditions, such as political stability, exchange rates, or government regulations, in the region where the firm is located. Secondly, there are industry based risks that are related to the influence industrial policy in the firm's sector has on. Thirdly, there are firm based risks that are related to the risks unique to that specific firm.

Beja (1972) separated risks into two categories: systematic risks and unsystematic risks. The former is uncontrollable, undiversified, and market specific risks which are caused by general factors such as economic, political, or social factors (Siregar & Maksum, 2018). The latter is controllable, or diversifiable, risks which are unique to a firm or industry (Sharif, Hamid, Usman Khurram, & Zulfiqar, 2016). The nature of systematic risk is widely known a factor considered by investors in making an investment. Investors, managers, and researchers are required to pay attention and find ways to recognize and effectively manage this type of risk. After minimizing unsystematic risks through diversification, systematic risks are the main ones faced by firms (Chatterjee & Lubatkin, 1990).

According to this perspective on classifying the types of risks, there are two main groups based on whether the risk arises from internal factors or external factors. The former, the internal or controllable risks of a firm, are caused by intrinsic factors such as employees, technology used, operations, and physical conditions. The latter, the external or uncontrollable risks of a firm, arise from by extrinsic factors, such as economics, natural phenomena, politics, competition, emergent technologies, and changes in the environment. The risks faced by SET listed firms were defined and characterized based on the nature of the industry sector that the representative firms operate in. The same risk, when faced by firms in different industries, may have different risk indicators and impacts on the firm. For example, firms in the technology industry are faced with business risks primarily related to external factors, such as changes in the economy, technology, prices, and competitors. Whereas, firms in the resource industry face the same risks, they arise from restricted resource availability

or purchases. Therefore, it is difficult for the researcher to standardize the risk factors facing firms listed on the SET to a single definition for that particular risk.

In this study, the researcher focused on the risk factors that can be the standardized for all of the firms listed in the SET, regardless of the industry sector they are operating in. There following four main types of risks could be appropriately defined in general terms that would apply to all of the firms listed on the SET.

- Strategic Risks refers to risk factors affecting losses and exposure to loss caused by from the firms' defective or inappropriate business strategies and strategic objectives.
- Operational Risks refers to obstacles to executing a firm's goals arising from inadequate or failed processes, inadequate or failed people, inadequate or failed systems, and external events.
- Financial Risks refers to the possibility of the firm defaulting on its financial methods, which may impair its ability to produce adequate returns.
- Compliance Risks refers to the exposure to legal penalties and the threats caused by financial forfeitures and material losses when they fail to act in accordance with industry laws and regulations.

The same risks that posed obstacles for all of the firms listed on the SET arose from strategic risks, operational risks, financial risks, or compliance risks related to crucial factors threatening the firm. The concepts of the risks refers to the different perspectives related to the factors creating the uncertainty and variability in earnings, and the factors affecting the firm's profitability. Therefore, in general terms, the risks associated with operating a business will also depend on the perceptions of those risks by each firm.

2.1.2 Risk Perception

Risk perception involves the associations by individuals who are aware about various hazards (Adger, Quinn, Lorenzoni, & Murphy, 2016; T. M. Lee, Markowitz, Howe, Ko, & Leiserowitz, 2015; Slovic, 1987). Due to a lack of a consensus among scholars and the complexity of the topic, it is not easy to define what risk perception is. However, Sjöberg et al. (2004) defined it as the assessing of the subjective occurrences and consideration of the potential consequences by individuals. In other

words, risk perception refers to the attitudes and beliefs toward a risk (Slovic, Fischhoff, Lichtenstein, & Roe, 1981). Furthermore, perceiving risk is involved in likelihood estimation, probability assessment, and predicting negative outcome consequences (Montibeller & Von Winterfeldt, 2015; Smith, Chein, & Steinberg, 2014). Slovic and Peters (2006) stated that risk is perceived then acted on by humans in compliance with two main principles. On the one hand, risk, if viewed as a feeling, is related to the instincts of a person and their intuitive reactions to danger. On the other hand, risk, if viewed as a factor to be analyzed, becomes something to be met with reason, logic, and scientific deliberation to establish risk management strategies. Risk perception is used at the program level of risk management to rank risks and set organizational priorities (Long & Fischhoff, 2000), and it is related to three sets of value judgments, including criteria for the acceptability, or tolerability of risks; interactions among these tolerability criteria; and approaches for managing unknown risks (Renn, 1998).

Reliance on risk as a feeling can be explained as being “the heuristic affect”, which refers to allowing people to quickly making decisions and efficiently solve problems (Finucane, Alhakami, Slovic, & Johnson, 2000; Keller, Siegrist, & Gutscher, 2006; Siegrist & Sütterlin, 2014; Slovic & Peters, 2006). However, this is hardly a universal definition for risk perception (Ahsan, 2011). Risk perception has a strong influence on the adoption and usage of new products, services, or marketing communication channels (Laukkanen, 2016; Thakur & Srivastava, 2014). Thus, to manage risks in the context of business, critical managers who need to directly perceive risks from many sources must understand the key sources of risks and perceive them in the same way as the (Bunn, 1994; Mitchell, 1995, 1998). There are multiple quantitative and qualitative characteristics of risk factors related to risk perception by both general and professional people (Schwing & Albers, 2013). In general, risk perception is associated with several quantitative outcomes based on probability estimation (T. K. Das & B.-S. Teng, 2001). However, in terms of its qualitative aspects, these are highly related to the thoughts, beliefs, and concepts of person perceiving the risk (Sjöberg, 2000b).

Barki, Rivard, and Talbot (1993) suggested that risks in an organizational environment are associated with task complexity, resource insufficiency, potential

loss magnitude, and the extent of change. From a cognitive point of view, the study of risk perception is mainly focused on the perception of a cognitive process (Sjöberg, 1996). The psychometric paradigm foundation of risk perception is formed by approach and, according to this paradigm, people can understand risk as the risk objects' general properties' functions (Sjöberg, 1996). Objects have certain hallmarks causing people to rate them as risky or not.

In terms of this study, risk perception is the ability by managerial staff which are directly responsible for perceiving risks to discern, be aware of, concerned about, assess, or estimate the negative consequence a risk that may affect a firm. In particular, the ability of managers to perceive the four main types of risks (including strategic risks, operational risks, financial risks, and compliance risks) were emphasized in this study because they are the general risk factors all firms listed on the SET had in common. Next, the role of a firm's managers in perceiving risks will be described.

2.1.3 Manager Roles in the Firm

In the traditional view, managers who do not tolerate risks in their work are "reduced to a routine function" (Knight, 2013). Generally, defining a person's work role refers to their position and responsibilities, whereas role performance is a function focused on the work being performed (Joshi, Son, & Roh, 2015; Mellado, 2015). According to managerial perspectives, functions are the responsibilities that a manager is responsible for core duties based on their job description, while managerial roles are based on the established expectations of actions to accomplish various functions (Dumitru, Motoi, & Budică, 2015; Pulakos, Hanson, Arad, & Moye, 2015). Management research accentuates the importance of middle managers who have strategic functions in the context of leadership and management (Ahearne, Lam, & Kraus, 2014; Helfat & Peteraf, 2015; Hornsby, Kuratko, & Zahra, 2002; Wooldridge & Floyd, 1990). Extensive competencies in such areas as strategic planning, human resources, and technical tasks are required of middle managers (Hautz, Seidl, & Whittington, 2017; Liang, Howard, & Leggat, 2017).

Floyd and Wooldridge (1992) stated that managers play a proactive role in the context of both bottom up (such as championing strategic alternatives) and top-down

(such as implementing deliberate strategy). In delegating authority, middle managers can contribute to the firm's significant decisions and the essential goals related to lower-level employees. Moreover, failing to consider the behaviors of middle its managers, a firm may be influence the validity of the firm's performance (McNulty & Ferlie, 2004). Middle managers contribute and obligate assured strategies for tolerating whole operational performances of firm to become the positive results (Mannan, Mentzer, & Zhang, 2013; Parnell, 2008). Based on their roles as task organizers, managers are required to able and allocate both internal and external resources needed to generate positive outcomes for firm performance, especially an innovative firm (Teece, 2014).

According to risk homeostasis theory, managers tend to take more risks when they have a greater sense of security. It can also be said that the level of risk-taking behavior is adjusted by people up to the level of the safety measures that are in place (Wilde, 1994). It is argued by Wilde et al. (2002) that individuals seem to have insufficient ability, knowledge, or attention regarding adjusting behavior a in order to keep the level of risk stable. Thus, the this study focused directly on risk perceiving managerial staffs' risk perception in the organization when considered in relation to their work behaviors. Managers who are responsible for continuing entire effective performances and accomplishing firm goals by engaging in proactive behavior and decision their work were sought out as respondents in the selection stage.

2.1.4 Proactive Behavior

There are several approaches that are bound in a common thread for the proactivity study, all of which are related to the action-oriented organizational behaviors (Phipps, Prieto, & Deis, 2015; Schmitt, Den Hartog, & Belschak, 2016). From this perspective, employees take an active role through their work behavior in forming favorable conditions and creating situations (DeVaney, 2015). This is in contrast to people exhibiting more passive behavior in a reactive pattern. Proactive people actively seek out information and opportunities to act that can lead to improvement and do not passively wait for those opportunities to come to them (Gulyani & Bhatnagar, 2017; Hwang, Al-Arabiat, Shin, & Lee, 2016; W. Jiang & Gu, 2015). For instance, as described by Frese and Fay (2001), the personal initiative

concept involves a self-starting and active working approach. It is argued by Bateman and Crant (1993) that environmental change is actively created by proactive individuals, while less proactive people tend to use a more reactive approach to doing their jobs.

Proactive behavior, as stated by J. Michael Crant (2000), is complicated by phenomena with multiple causes that are reasonably essential to determining the consequences to the individual and the firm. This requires employers to improve the abilities of their employees to understand the risks, their causes, and potential outcomes, as well as ensuring that the employees understand how to be proactive within the acceptable standards of the organization (Albrecht, Bakker, Gruman, Macey, & Saks, 2015; Carballo-Penela & Castromán-Diz, 2015; Parker & Bindl, 2016). The more critical determinants there are for proactive and initiative behaviors to create successful a successful outcome for a firm, the more dynamic and decentralized generating new ideas within the firm becomes (Burgers & Covin, 2016). For instance, the introduction of new management approaches can lessen the functions of surveillance and lead the firm to rely more on personal initiative for addressing and solving problems (Frese, Fay, Hilburger, Leng, & Tag, 1997; Herrmann & Felfe, 2014; Hogan & Coote, 2014). Also, employees prefer having the freedom to look beyond their assigned tasks and display their initiative and capabilities to address risks that they perceive in a flexible work environment (Frese & Fay, 2001; Miron-Spektor & Beenen, 2015).

Proactive behavior seems to be a high-leverage concept, rather than merely another management inclination, as it can lead to greater effectiveness for the firm (Bateman & Crant, 1999). For instance, the redefining the focus of one's efforts in fulfilling their role in the firm, such as pursuing activities related to career management and engaging employees, would allow them to have opportunities to change the scope their job or to move toward the business division of the firm (Albrecht et al., 2015). This has been stressed by some researchers to arise from the personal characteristics of the employees which predispose them toward being more proactive (Bateman & Crant, 1993; Frese, Kring, Soose, & Zempel, 1996), whereas, the rest remain with the conclusion that this is more a function of situational cues creating proactive behavior (Elizabeth Wolfe Morrison & Phelps, 1999). In addition,

some researchers claim that common proactive concepts are displayed widely throughout organizational behavior, such as having workers with proactive personalities and the influence they have on outcomes, exhibited, for example, through perceptions about leadership, job performance, team effectiveness, and career outcomes (J Michael Crant, 1995; J Michael Crant & Bateman, 2000; Deluga, 1998; Seibert, Crant, & Kraimer, 1999).

In terms of employee performance, proactive behavior is the actions of an employee taking an active role in order to create the preferred conditions for their career progression, which can be separated into two broad categories. Firstly, there are general actions that are comprised of identifying opportunities, challenging the status quo, and forming favorable conditions that can be seen in any work related context (J. Michael Crant, 2000). The second is comprised of context-specific behaviors, or particularly proactive behaviors, that take place within a limited domain and consist of feedback seeking, innovation, planned proactive socialization, issue selling, coping with stress, and career management.

2.1.4.1 Identifying opportunities is defined as the capability to address a good idea and transform the opportunities it provides into a business concept (or other concept that can improve the existing venture) through adding value to the firm's clients or society. Then, this is used to generate new streams of revenue (Karimi, Biemans, Lans, Chizari, & Mulder, 2016; Lumpkin & Lichtenstein, 2005). Addressing opportunity has long been accepted as a major step in the entrepreneurial processes (Ozgen & Baron, 2007). In reality, there cannot be entrepreneurship if there is a lack of an ability to identify business opportunities (Short, Ketchen Jr, Shook, & Ireland, 2010).

2.1.4.2 Challenging the status quo means the employees, who are informed about and discuss the problems that impact their work groups, tend to speak up about those problems (Seibert, Kraimer, & Crant, 2001). These are employee behaviors that consist of being open to taking chances or taking risks and brave enough to take steps to initiate changes, and having an open mind to enable them to learn continuously (Ohly & Fritz, 2007).

2.1.4.3 Forming encouraging environments for employees refers to fostering a common connection, togetherness, and connection among employees in

the work unit, and throughout the whole organization (Harrington 2004). Good working conditions in a firm can be established via proactively addressing disciplinary issues like discrimination (Edelman, 2016; Vellema & van Wijk, 2015). It is also practical to create a safe working environment from the beginning, rather than waiting until is a problem that must be addressed. According to this perspective, providing an optimistic and good work environment should be pursued by meticulous employers beyond simply being in compliance with the related laws (Buys et al., 2017). Making the safety and satisfaction of employees a core principle can influence a firm's performance because of the improvement in the quality of work by the employees (Singhapakdi, Lee, Sirgy, & Senasu, 2015).

2.1.4.4 Socialization refers to the process of how a newcomer learns about the necessary attitudes and behaviors to effectively integrate into the organization (Ashforth, Sluss, & Saks, 2007; Fisher, 1986; Griffin, Colella, & Goparaju, 2000). Firm's role in the socialization process is the primary focus of training programs and formal orientations for new employees. However, in recent research has acknowledged that a more active role can be assumed by newcomers who are able adjust to work and become comfortable with their new roles. It was theorized by V. D. Miller and Jablin (1991) that the likelihood for each proactivity tactic to be used was related to the newcomers' uncertainty related to information, source target assessment, and beliefs about the associated potential social costs for using each tactic. Thus, the risks to one's social image are explicitly incorporated in this socialization process model.

2.1.4.5 Feedback seeking is a valuable resource since it can help individuals achieve their goals (Huang, 2012; Lam, Huang, & Snape, 2007). Thus, an individual may proactively seek information through feedback when faced with uncertain conditions (Ashford & Cummings, 1985). The evidence uncovered by Ashford (1986) showed the extent of its effect when there is a positive association with the value of employee feedback and how often the employee actively inquires about the perceptions and evaluations of others with regard to their behavior (Saks, Gruman, & Cooper-Thomas, 2011). In regard to business, managers who actively seek negative feedback will gain more correct knowledge about how others assess their work (Ashford, Blatt, & Walle, 2003; Z. Chen, Lam, & Zhong, 2007; Millward,

Asumeng, & McDowall, 2010). Additionally, others will seek the perspectives of their compatriots to determine the most effective course of action. Conversely, seeking positive feedback could diminish the opinion of others about the effectiveness of a manager.

2.1.4.6 Issue selling refers to the proactive influence of a middle manager on the process of strategy formulation by calling the attention of others to the particular issues which influence the understanding of managers (Dutton, Ashford, O'neill, Hayes, & Wierba, 1997). How strongly issue selling is accepted as the norm in the firm can lessen the perceived risk of issue selling to an employee's social image.

2.1.4.7 Individual innovation, according to Kanter (2000), is a process that starts with recognition of a problem and leads to novel idea generation, adoption, and a potential solution. Next, sponsorship for the idea is sought by the innovative employee in an attempt to form support for their idea. In the end, these activities are reflected in some innovative models and prototypes that firms can apply. Thus, leadership, innovation support, managerial role expectations, career stage, and a systematic style of problem-solving are associated with innovative the behaviors of individuals (Denti & Hemlin, 2012).

2.1.4.8 Proactive work behavior takes place when employees choose to initiate, intervene in, or perceive a career situation that is focused on moving in the desired direction, rather than passively responding to imposed changes (Fryer & Payne, 1984; Hirschi & Freund, 2014).Earlier, the researcher explained how the newcomers' socialization can be a subset of proactive career management behaviors in reference to the study by Seibert et al. (1999) about relationship between proactive personalities and career success, which also supports this definition.

2.1.4.9 Proactively coping with stress can be seen when employees take advance actions related to potentially stressful events in order to modify the result, or to prevent it from happening (Bolino, Valcea, & Harvey, 2010; Robinson & Griffiths, 2005). A conceptual framework for the proactive coping process having five stages was explained as following: 1) accumulating resources, such as organizational skills or social support, 2) recognizing the potential for a stressful event to occur, 3) initiating an assessment of the potential and current stressors, 4) coping efforts to

prevent or minimize the stressor, and 5) examining and applying feedback to improve dealing with a stressful event (Aspinwall & Taylor, 1997).

2.1.5 Firm Performance in Terms of Financial Performance and Risk Management Concepts

When measuring firm performance through traditional approaches, firms used the ability to earn as the indicator that was in compliance with the accounting role (Dechow, 1994). One of the most essential paradigms in management research is firm performance, which involves three specific areas of firm performance as follows (Hubbard, 2009; Özer & Tınaztepe, 2014; Richard, Devinney, Yip, & Johnson, 2009; E. W. Rogers & Wright, 1998). First, financial performance is the indicator representing a firm's ability to accomplish predetermined profitability goals, such as profits, return on assets, and return on investments (Roberts & Dowling, 2002). Next, product market performance refers to the firm's key product line achieving sales growth and profit objectives, such as sales of the firm, market share, and distributive efficiency (Kotabe, Jiang, & Murray, 2011). Finally, shareholder return is the ability to driving up share prices to generate excess cash for the firm for future use or distribution among stakeholders, such as economic value added, dividends, and share price appreciation (Campa & Hernando, 2004; de Mortanges & Van Riel, 2003; L. Donaldson & Davis, 1991).

Firm performance reflects the entire effectiveness of firm in achieving goals (Inkinen, 2016; Venkatraman & Ramanujam, 1986). It is measured using a combination of several elements, consisting of customer satisfaction, market effectiveness, and financial performance (Engelen, Gupta, Strenger, & Brettel, 2015; Vorhies & Morgan, 2005). It is used to estimate firm performance that emphasizes the volatility of earnings and stock prices (Easterwood, İnce, & Raheja, 2012; Fiordelisi & Ricci, 2014). In this study, the researcher focuses on firm performance in terms of financial performance concepts (including profitability, growth, and market value) and risk management concepts (including variance of profitability, variance of growth, and variance of market value).

2.1.5.1 Firm Performance in Terms of Financial Performance Concepts

The concept of firm performance depends on determining of each of the factors that influence the financial outcomes of the firm's business operations and evaluating each of them (J. G. Combs, Russell Crook, & Shook, 2005). Based on the stakeholder theory, there are several elements that affect firm performance, such as employee satisfaction, customer satisfaction, and market value performance (Freeman, 2010). For businesses, 'return' is the crucial factor related to accomplishing a firm's objectives and to surviving in an industry (Aupperle, Carroll, & Hatfield, 1985). Firm performance can be considered as multidimensional determinants following financial perspectives, including profitability performance, growth performance, market value performance, and financial performance (Delen, Kuzey, & Uyar, 2013; Kaynak, 2003; Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015; Santos & Brito, 2012; Wang, Senaratne, & Rafiq, 2015).

In this study, measuring performance of firms listed on the SET was separated into three categories that consist of 1) profitability performance, used to measure the firm's past ability to generate returns (C. C. Miller, Washburn, & Glick, 2013), 2) growth performance, used to measure the past ability to increase the firms' size (Whetten, 1987), and 3) market value, used to measure the firm's expected future performance (Srinivasan & Hanssens, 2009).

2.5.1.1.1 Profitability Performance

Profitability of a firm is the ability to generate profit based on a firm's sales, equity, and assets (Delen et al., 2013). There are evaluated by using profitability ratios to represent the firm's financial status, which consists of Return on Assets (ROA), Return on Investment (ROI), Return on Equity (ROE), Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) margin, and Return on Sales (ROS). The profitability ratios in this study are shown as follows:

Return on Assets (ROA), is one of the most widespread and useful of the profitability ratios (Jewell & Mankin, 2011) and refers to the measurement of the effectiveness of profit generation in relation to the total assets of the firm which have been used to generate profits (Heikal, Khaddafi, & Ummah, 2014). This ratio is calculated as Net Income divided by Total Assets. Firms have a good level of performance when they business operations have a high return on assets.

Return on Investment (ROI)is directly related to a firm's investments producing profits, and refers to the past earning performance of the firm or the future earnings expectations of the firm's investments (Flamholtz, 2012). This ratio is calculated as the Net Income divided by the Cost of Investment. Firms have a good return from their investments when their returns exceed their costs of investment, resulting in a positive return on investment result (Phillips, Bothell, & Snead, 2012).

Return on Equity (ROE) indicates the value creation for financial investors and shareholders (Saeidi et al., 2015) and is related to the effective management of firm capital to generate profits (Heikal et al., 2014). This ratio is calculated as the Net Income divided by the Shareholder's Equity. Firms with a high return on equity will have a high level of profit generation due to creation of additional working capital.

Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) margin is measured using revenue based on cash operating expenses and refers to how much revenue the firm generates before interest, taxes, depreciation, and amortization (O. Weber, Koellner, Habegger, Steffensen, & Ohnemus, 2008). This ratio is calculated as the summation of Operating Income (EBIT), Depreciation, and Amortization divided by Sales (Delen et al., 2013). It is used to compare firms of different sizes and in different industries in relation to the percentage of revenue (Santos & Brito, 2012).

Return on Sales (ROS), also called Net Profit Margin, refers to the evaluation of a firm's successful sales performance which is represented by how much profit the firm can produce per dollar of sales (Boubakri & Cosset, 1998; Tayeh, Al-Jarrah, & Tarhini, 2015). This ratio is calculated as the Operating Profit (Net Profit before Interest and Tax), divided by the Sales, and multiplied by 100 (Walton, 2000). In general, a high profit margin indicates that a firm has good performance in regard to operating sales (Tayeh et al., 2015).

This profitability ratio data was collected for a five-year period (2013 – 2017) and used to determine the average of each ratio for use in data analysis. Then, all of the ratios were calculated by using an average's formula to represent the profitability performance of the SET listed firms in the study.

2.5.1.1.2 Growth Performance

The growth performance refers to specific increases a firm's volume, such as increases in sales, production, or exports (Penrose & Penrose, 2009). It is used to assess a firm's size in relation to asset growth, profit growth, or sales growth, as these growth rate indicators represent relative changes in the firm's size (Coad & Hölzl, 2012). Growth rates used in this study are as follows:

Net Profit Growth Rate refers to the annual increase of a firm's net income generated through investment each year (Bacidore, Boquist, Milbourn, & Thakor, 1997). This rate is calculated as the difference between the Net Income in the current year and the previous year, divided by the Net Income of the previous year, and multiplying the result by 100 (Delen et al., 2013). A positive net profit growth rate represents an increase in firm incomes.

Sales Growth Rate refers to the ability of a firm to generate sales to increase revenue over time (Covin, Green, & Slevin, 2006). This rate is calculated as the difference between the Sales in the current year and the previous year, divided the result by the Sales of the previous year, and multiplying the result by 100 (Delen et al., 2013). A positive sales growth rate represents an increase in firm revenue. If firms have a growth in their sales for two consecutive periods, they are considered to be in a good, expanding position.

Growth performance in this study demonstrates the ability of firms to increase their performance by increasing their profits and sales (H. M. Mueller, Ouimet, & Simintzi, 2017). Increasing profit and sales generation, even when other factors are stable, will increase firm's performance. This growth rate data was collected for a five-year period (2013 – 2017) and the calculated average of each rate used in data analysis. Then, all of the ratios were calculated using an average's formula to represent the growth performance of firms listed on the SET that were included in this study.

2.5.1.1.3 Market Value Performance

The market value of firms refers to the expectation about the future of a firm related to market changes and competitive moves providing minimized risks and maximized returns (Lingaraja, Selvam, & Vasanth, 2015). The investors and stakeholders can use market value information to predict stock trends based on

publicly disclosed information that is related to the market movements (Selvam, Gayathri, Vasanth, Lingaraja, & Marxiaoli, 2016). Market value ratios emphasize how well a firm performs related to the price of its shares, such as dividends or the number of shares in issue (Tayeh et al., 2015). The market value indicators used in this study are as follows:

Price-to-Earnings (P/E) Ratio measures the firm value's market confidence based on the shares that represent its current share price relative to its per-share earnings (Elias, 2007). This ratio is calculated by using the current share price and current earnings, as the Market Price per Share divided by the Earning per Share (Tayeh et al., 2015). Firms with a high result for their P/E ratio have a good expectation for the firm to remain profitable in the future.

Market-to-Book (MB) Ratio is used to measure the market performance related to the market value of the firm's common equity and the book value of the common shareholders' equity. This ratio is calculated as the market value of the firm's common equity at a point in time (Ordinary Shares + Minority Interest + Short-term Debt + Long-term Debt + Other Long-term Liabilities) divided by the book value of the firm's common shareholders' equity (Shareholders' Equity + Minority Interest + Short-term Debt + Long-term Debt + Other Long-term Liabilities) from the firm's most recent balance sheet (Tayeh et al., 2015). However, MB ratio reflects what the market value is, but it cannot tell what the predictors of this ratio could be.

Cash Flow per Share refers to the generation of cash by each share of the firm's stocks and includes the capital expenditures and cash dividends (Siegle, 1978). This ratio is calculated as the Cash generated from operating activities divided by the number of ordinary shares issued (Tayeh et al., 2015). Firms usually have a positive result when their business operations produce a high cash flow that is sufficient to cover capital expenditures. This means that they have the financial flexibility to invest and can make upgrades to their buildings, machinery, and processes.

Market value performance in this study demonstrates the expectation of firms to increase their performance by increasing their future profitability and financial flexibility. This market value ratio data was collected for a five-year period

(2013 – 2017) and used an average for each ratio in the data analysis. Then, all ratios were calculated by using an average's formula to represent the market value performance of the firms listed in the SET.

2.1.5.2 Firm Performance in Terms of Risk Management Concepts

Measuring risks of firms in previous researches was related to the firm's returns have defined risk as the unpredictable consequences to a firm's revenues (Bowman, 1980). Data on accounting information representing several dimensions of businesses' financial operations, such as profitability performance, growth performance, and market performance, has been widely used to measure firm performance (McGuire, Sundgren, & Schneeweis, 1988). Based on risk concepts, firm performance can be measured by using volatility and uncertainty related to indicators such as a firm's return on assets (ROA), return on equity (ROE), or return on investment (ROI) which measure risk by considering the variation in these ratios (Orlitzky & Benjamin, 2001). The components of risk measurement consist of standard deviation, coefficient, value at risk (VaR), and conditional value at risk (Duffie & Pan, 1997; Engle & Manganelli, 2004; McNeil & Frey, 2000; Rockafellar & Uryasev, 2000).

In this study, the researcher focused on the variance, to assess the risk to firm performance in terms of financial performance concepts. The variance was used to measure the variance in firm financial data and the volatility associated with the rates of return (Sharpe, 1966). It refers to how much a firm's return deviated from the firm's expected value. According to firm performance, all financial ratios were measured for risk by using their variance as the indicator and then the total risks to the firm's performance was calculated using the average formula.

2.1.6 Types of Firms

In this study, the type of the firm is classified by using the prospect theory (Fiegenbaum, 1990) to separate the firms listed in the SET database into two groups based on the variance in the firm's returns indicated by using the median of the average of Return on Assets (ROA) for each industry to classify what the group of firm is. On the one hand, it was the group of firms performing above the average target of the industry in regard to variance of Return on Assets (ROA). On the other

hand, there were the firms who performed below the average target of the industry in relation to their variance in Return on Assets (ROA). Based on this assumption, these classifications were integrated in to the prospect theory framework (Kahneman & Tversky, 2013). This theory refers to the role of targets in analyzing the risk related to choices. First, the range of potential responses to a problem were condensed in to similar themes and each prospective response was evaluated according to its functional value. Second, information from the 8 industries of the Stock Exchange of Thailand (which includes 483 firms) was collected to examine situations that may affect the relationship between the perceived risk of managers and their proactive work behavior. The firm's rate of return and risk levels were measured using their market segment's average return on assets (ROA) for the time period examined (2013 – 2017) and using the variance in segment returns on assets as a risk measure for the same time period. A given firm's target level was measured in relation to the industry's median return (Lopez-de-Silanes, Phalippou, & Gottschalg, 2015).

Another perspective on the type of firm from previous research on risk management of firms referred to how hiring a Chief Risk Officer (CRO) for a firm influenced the firm's performance positively (Pagach & Warr, 2011). In regard to this perspective, the researcher decided to classify the type of firm in the context of having a risk management officer into two groups that may influence on firm performance. On the one hand were the firms having formal risk management departments in their organizational structure, and have been operating their business with a person, or team, who are directly responsible for managing the risks to the firm. On the other hand were the firms which do not have a formal risk management department in their organizational structure, and have not been operating their business in a manner address to managing the firm's risks as a whole.

2.1.7 Types of Organizational Units

In the related literature, the same trends appear related to the work structure within firms since much of the research is closely related to workplace tasks, jobs, roles, and goals and examine how employees actively shape, form, and change the tasks they must perform, and the environment they operate in. Regarding the research on task performance by Staw and Boettger (1990), it is not only concerned employees

accomplishment their assigned tasks, but also how they actively participate in task improvement, revising ideas through implementation, and solving related problems. Although many empirical studies have investigated the proactivity of employees, as presented earlier, the impact of this research has been hindered by a crucial absence of integration. According to J. P. Thomas, Whitman, and Viswesvaran (2010), in their meta-analysis of three different proactivity constructs, specifically personal initiative, voice, and taking charge, taking charge has been the factor specifically addressed in the constructive efforts of voluntary employees. It was related to functional changes in an organization in regard to the way individuals execute the tasks related to their jobs, units, work, or the organizations' context. The research on taking charge has advanced the understanding of proactivity by capturing the initiative-based actions that are performed with the aim to shape the processes and procedures of the organization (J. P. Thomas et al., 2010).

This study attempts to explore the differences between the managerial staff working in line function units (i.e. production, manufacturing works, quality control, processing plant) and managerial staff working in support function units (i.e. marketing, risk management, finance). Line functions are defined as constituting the core operations of the corporations (e.g. manufacturing, marketing and finance) and staff functions are defined as constituting non-operational, support, or service functions (e.g. legal, human resources, communications, public relations) (Zelechowski & Bilimoria, 2004). The differences in the tasks, roles, authority, working styles, and responsibilities of different managers might be the key factor to enhance firm performance and risk management. In addition, managers sometimes need to present themselves in, and play, several roles in the workplace, such as leader, monitor, disseminator, disturbance handler, and negotiator.

2.2 Related Literatures and Theories

In this section, the researcher reviews literature related to the relevant contents and theories that have extended the understanding of risk perception, proactive behavior, and firm performance occurrences and is addressed in relation to 1) protection motivation theory, 2) contingency theory, 3) stakeholder theory, 4) agency theory, and 5) prospect theory.

2.2.1 Protection Motivation Theory

R. W. Rogers (1975) stated that protection motivation theory was initially established to help elucidate fear appeals that represented people under this theory who were protecting themselves was based on four elements. Firstly, people perceived the severity of a threatening event that might have the potential for causing undesirable consequences. Secondly, people perceived the probability of an occurrence that might lead to vulnerability. Thirdly, people considered the efficacy of the recommended preventive behavior. Finally, people perceived their self-efficacy, which is represented by how people feel, think, motivate themselves, and behave with regard to their capabilities (Bandura, 1989, 1993). Among many relevant theories about risk perception and risk tolerance description, the protection motivation theory (PMT) seems to be the most cited one. People, according to this theory, seem to guard themselves when anticipating negative consequences and direct themselves away from the consequences with the feeling that they can cope with it through preventive actions. It was pointed out by DeJoy (1996) that workers intend to take protective workplace actions through a process where they weigh the efficacy of their response and their self-efficacy (such as the sense of agency) against the potential incurred costs.

In this study, protection motivation theory was used to describe the action taking of managers in their work when they were seeking to prevent negative consequences from risks to their firm. Thus, managers may take some actions when they know, or perceive, that some negative occurrence may impact their firm’s operations.

2.2.2 Contingency Theory

In the contingency paradigm, Fiedler (2006) stated that there is no best way for organizing a firm, leading a firm to meet their targets, or only making correct decisions (J. D. Thompson, 2017). Instead, these are dependent upon the internal and external situations to which the leaders will apply their own working styles to create the right outcomes (Tosi Jr & Slocum Jr, 1984) in relation to aspects such as environmental elements, performance evaluations, or the types of people in the work environment. There are multiple environmental elements that can affect different aspects of a firm's value in various ways (Lumpkin & Dess, 2001). According to this perspective, managers control some elements in the working environment that may influence other elements and the degree of risk accrued by their firm (Fry & Smith, 1987). Managers, who are leaders and responsible for leading their subordinates to meet objectives, should apply their behaviors and working styles in the right manner to correctly address the situations at hand.

In this study, contingency theory was used to explain the relationship between a manager's performance and environmental elements and their influences on other elements and their effect on the degree of risk faced by the firm. It is related to how managers make choices and decisions related to their working styles that lead to taking action and, eventually, to be their work behaviors. Because of the difference between managers in line function roles and support function roles, they have different tasks and responsibilities in their work, they have to apply the right approaches to the right situations.

2.2.3 Stakeholder Theory

Freeman (1983) stated that the stakeholder theory refers to the organizational management and business ethics in managing a firm. This theory requires identifying who the stakeholders of firm are and separating them into related groups. In the traditional view of a firm, the only important stakeholders of firm were the owners or shareholders who were directly related by a binding fiduciary duty to increase the value of the firm. Stakeholder theory, instead, argues that there are other parties involved with a firm, including internal stakeholders and external stakeholders that are of importance. In the case of the former, the stakeholder group consists of owners,

managers, and employees. Whereas, the latter consists of suppliers, societies, governments, creditors, shareholders, and customers, as well. Stakeholder theory refers to the level of effect on potential stakeholders in relation to their role in three functional dimensions of a firm (Kochan & Rubinstein, 2000). First is the potential contributions of the stakeholders, which must be considered in relation to the ability to incentives and recognition in appreciation of others' efforts to improve performance. Next, one should consider how the stakeholders affect the operational methods that can place the firm's valuable resources at risk and could cause financial losses in case of either the failure of firm to achieve its goals or the termination of the stakeholder's relationship with the firm. Finally, the power the potential stakeholder holds in relation to the firm must also be taken under consideration. According to this perspective, not only should the firm's financial performance status be emphasized, but a broader set of relevant outcomes also should be considered by the firm, such as social performance, consequences of financial status, ethical requirements, or the legitimacy for potential stakeholder, as well (T. Donaldson & Preston, 1995; Steurer, 2006; Wood & Jones, 1995).

In this study, stakeholder theory was used to support the reasons that the researcher focused on firm performance in both general terms and with regard to risk management concepts. Not only can firm performance reflect a firm having good business operations business, but it can also reflect good risk management by a firm. The relevant persons for conducting a firm's business should endeavor to understand the many aspects of the mechanisms for firm survival that should be considered.

2.2.4 Agency Theory

The agency theory refers to the relationship between principals and agents in regard to the delegating of control. Jensen and Meckling (1976) described how the best firms organized the relationship between the firm owners (one party), who are the principals that are responsible for determining work roles, and their workers (another party), who are the agents who are responsible for performing the work or making decisions on behalf of the principals. This theory is concerned with explaining and solving problems related to the relationship between the principal and their agents caused by misaligned goals or different levels of aversion to risk (Ross, 1973).

According to agency theory, hiring an agent under contract and compensation was initiated by firm owners to ensure success in achieving the preferred goals of the firm. This theory refers to separating the roles within a firm's structure to run the firm efficiently and giving heed to the different risk preferences of the partners (Eisenhardt, 1989). In addition, it described the influence of firm performance (such as financial and operational performance) in relation to the agency structures of the firm, such as management structures, ownership structures, or corporate structures (Dharwadkar, George, & Brandes, 2000).

In this study, agency theory was used to explain how manager behaviors influence firm performance. The agent is a person who acts on behalf of the firm owner, thus the firm owner delegates the authority of decision making to the agent when working under unexpected conditions that may directly impact the firm's performance. This supports the key role of managers in a firm's operations and how their actions effect the firm's performance.

2.2.5 Prospect Theory

Kahneman and Tversky (1979) stated that prospect theory refers to the alternatives available to people in relation to two or more probabilistic choices that involve risk represents by uncertain prospects of the potential outcomes. People, under this theory, use the value of potential losses and gains in their decision making, rather than the final outcome. They use some heuristics in evaluating the potential losses and gains. There are two distinguishable phases in this process according to prospect theory: framing and assessing the prospects. In framing the prospects, the issues relevant to decision making, such as acts, contingencies, and outcomes, are constructed by the decision maker. In assessing the prospects, the values of each option are assessed by the decision maker, who then chooses accordingly (Tversky & Kahneman, 1986). In the context of corporate decision making, prospect theory's utility function refers to the relationship between the risk and return of firms within an industry (Fiegenbaum & Thomas, 1988).

In this study, prospect theory was used to categorize the types of firms listed in the SET into two groups based on the variance in the firm's returns indicated by using the median of the average of Return on Assets (ROA) for each industry

consisting of 1) firms that are situated below the average target return level in the industry that will seek risks to the firm in an attempt to better their position in the industry and 2) firms that are situated above the average target return level which will avoid risks to the firm in order to retain their position in the industry.

2.3 Conceptual Foundation

In this study, conceptual foundation was developed by associating the following relationships. First, the influences of the firms' managers' risk perception on their proactive behavior that determines their work behaviors when they perceive one of the four main types of risks in general. Secondly, the influences of a firm's manager's proactive behavior on firm performance in both financial performance terms and risk management concepts when managers take proactive actions. Thirdly, how whether a firm is positioned above or below the mean average target return level for firms in their respective industry moderates main relationship between the risk perception of a firm's managers and their proactive. Next, how the type of organizational unit (line function versus support function units) the managers work in moderates the main relationship between the firm's managers' risk perception and their proactive behavior. Finally, determining the moderating effects of the type of firms and type of organizational unit on the main relationship between the proactive behavior of a firm's managers and firm performance in terms of both financial performance and risk management concepts.

2.4 Dependent Variables

2.4.1 Proactive Behavior Dimensions

Previous research has mentioned personality characteristics related to a person's proactive behavior that influenced their performance, such as creativity and innovation. It should be noted that people tend to take action when they face a critical problem or an undesirable alternative and their personality characteristics can affect how they choose their actions. In addition, employees whose employer expected them to exhibit more proactive in attending to their work duties tended to initiate new

things, ideas, methods, or alternatives to improve job performance and output more frequently.

Proactive behavior of managers should include taking the initiative in improving current situations or generating new benefits. It should be a role related to establishing various ways of working and doing business finds ways to overcome large obstacles arising from the rapidly changing business environment in today world. Therefore, the dimensions of proactive behavior can be separated into different categories determined by how their comprehension influences a manager's work behavior and they relate to the manager's personality characteristics (table 2.1).

In this study, the elements of proactive behavior consist of 1) Identifying opportunities, 2) Challenging the status quo, 3) Forming encouraging environments, 4) Socialization, 5) Feedback seeking, 6) Issue selling, 7) Individual innovation, 8) Proactive career behaviors, and 9) Proactively coping with stress. There will be represented with regard to the proactive behaviors seen on managers of firms listed on the SET.

Table 2.1 Summary of Studies on Proactive Behavior in Previous Researches

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
Schmitt et al. (2016)	Work Engagement → Transformational Leadership → Proactive Behavior	Primary data collected from 148 employee – colleague dyads	- Personal Initiative - Issue Selling	- Questionnaire - Multiple linear regression and moderated mediation model	Transformational leadership has a positive relationship to work engagement and proactivity in terms of both personal initiative and voice.
Gulyani and Bhatnagar (2017)	Protean Career Attitude (PCA) → Proactive Work Behaviors (PWB)	Primary data collected from 255 millennial employees	- Personal Initiative - Proactive Work Behavior	- Questionnaire - Regression analysis - Sobel test and Bootstrapping analysis	Passion for work has a positive relationship with PWB and fully mediates the relationship between PCA and PWB.
Hwang et al. (2016)	Information Proactiveness → Management Systems Adoption Beliefs	Primary data collected from end-users	- Individual Innovation	- Questionnaire - Regression analysis	Information proactiveness was found to be a significant determinant of system users' perceived ease of use.
W. Jiang and Gu (2015)	Proactive Personality → Felt Responsibility for Change → Employee Creativity	Primary data collected from 232 employees and their supervisors from software companies in China	- Identifying Opportunities - Personal Initiative - Feedback Seeking	- Questionnaire - Hierarchical regression analyses and moderated mediation approach	Felt responsibility for change was a mediator of the positive relationship between proactive personality and employee creativity.

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
Frese and Fay (2001)	Orientation → Personal Initiative → High Performance	Reviewing literature from previous research	- Identifying Opportunities - Forming and Encouraging Environment - Personal Initiative - Proactive Work Behavior - Proactive Coping with Stress - Feedback Seeking	- Documentary research	High PI was an indicator in changing the work situation of employees and related to success as an entrepreneur.
Bateman and Crant (1993)	Personal Disposition → Proactive Behavior → the 'Big Five' Personality Domains	Primary data collected from 1) 282 undergraduates 2) 130 undergraduate students 3) 148 MPA students	- Identifying Opportunities - Challenging the Status Quo - Forming and Encouraging Environment - Individual Innovation - Proactive Work Behavior	- Questionnaire - Factor analysis	Scores on the proactive scale correlated with need for achievement, need for dominance, and independent measures.

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
J. Michael Crant (2000)	Personality → Proactive Behavior → Outcomes	Reviewing literature on previous research	- Identifying Opportunities - Challenging the Status Quo - Forming and Encouraging Environment - Socialization - Feedback Seeking - Issue Selling - Individual Innovation - Proactive Work Behavior - Proactive Coping with Stress	- Documentary research	Personality has a relationship with proactive behavior and eventually leads to outcomes in organizations.
(Carballo-Penela & Castromán-Diz, 2015)	Environmental Proactivity → Proactive Environmental Strategies	Primary data collected from 41 managers in Spanish environmental consulting companies	- Forming and Encouraging Environment	- Questionnaire - Multiple regression analysis - Hierarchical regression	Environmental proactivity has significant relationship with the adoption of proactive environmental strategies.
Frese et al. (1997)	Personal Initiative → Operationalization	Primary data collected from 1) longitudinal study 543 East German 2) cross-sectional study 160 West German	- Personal Initiative	- Questionnaire - OLS analysis - Interview - Content analysis	Personal Initiative correlated with all operationalization elements except job satisfaction.
Hogan and Coote (2014)	Innovative Behavior → Firm Performance	Primary data collected from approximately 100 principals of law firms	- Individual Innovation	- Questionnaire - Estimating structural equation models	Innovative behaviors partially mediated the effects of values that support innovation on measures of firm performance.

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
Elizabeth Wolfe Morrison and Phelps (1999)	Extra-role Behavior → Initiate Workplace Change	Primary data collected from 275 white-collar employees	- Identifying Opportunities - Challenging the Status Quo	- Questionnaire - Regression analysis	Extra-role behaviors significantly related to initiating workplace change.
Seibert et al. (1999)	Proactive Personality → Career Success	Primary data collected from 496 employees	- Proactive Work Behavior	- Questionnaire - Hierarchical regression analyses	Proactive personality contributes to career success.
Karimi et al. (2016)	Attitude toward Entrepreneurship → Opportunity Identification Perception → Entrepreneurial Intention	Primary data collected from 205 students	- Identifying Opportunities	- Questionnaire - Regression analysis	Attitude toward entrepreneurship has a significantly positive relation with opportunity identification.
Seibert et al. (2001)	Proactive Personality → Innovation and Career Initiative	Primary data collected from longitudinal study of 496 full-time employees	- Challenging the Status Quo - Individual Innovation - Proactive Work Behavior	- Questionnaire - SEM analysis	Proactive Personality has a significantly positive relation to innovation and career initiative.
Ohly and Fritz (2007)	Work Motivation → Proactive Behavior	Primary data collected from 98 employees	- Challenging the Status Quo	- Questionnaire - Correlation analysis	Role orientation and role breadth self-efficacy showed significant relationships with proactive behavior.
Ashforth et al. (2007)	Socialization Processes → Newcomer Learning → Newcomer Adjustment	Primary data collected from longitudinal study of 150 business and engineering graduates	- Socialization - Proactive Work Behavior	- Questionnaire - Path analysis	Institutionalized socialization and proactive behavior are each associated with newcomer learning.

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
Griffin et al. (2000)	Organizational Socialization Tactics → Newcomer Proactive Tactics → Socialization Outcome	Reviewing literature on previous research - Proposition	- Socialization - Feedback Seeking - Challenging the Status Quo - Proactive Coping with Stress	- Documentary research	Organizational tactics impact the likelihood that newcomers engage in various pro-active tactics.
Huang (2012)	Psychological Empowerment → Employees' Feedback Seeking Behavior	Primary data collected from full-time employees enrolled in On-the-Job Masters programs	- Feedback Seeking	- Questionnaire - Structural equation modeling analysis	Psychological empowerment is positively associated with feedback-seeking behavior via trust in one's immediate supervisor.
Lam et al. (2007)	Feedback Seeking Behavior → Quality of Leader-Member Exchange and Subordinates' Objective Performance	Primary data collected from 499 supervisor-subordinate dyads	- Feedback Seeking	- Confirmatory factor analysis - Regression analysis	Subordinates' feedback seeking was positively related to the quality of leader-member exchanges and objective work performance.
Saks et al. (2011)	Newcomer Proactive Behaviors → Socialization Outcomes	Primary data collected from 204 co-op university students	- Feedback Seeking - Proactive Work Behavior	- Questionnaire - Regression analysis	Proactive outcomes mediate the relationship between proactive behaviors and socialization outcomes.
Denti and Hemlin (2012)	Leadership → Innovation	Reviewing literature on previous research	- Individual Innovation	- Documentary research	The contingency factors are related to when leaders may influence innovation.

Study	Operationalization of Proactive Behavior	Sources of Proactive Behavior Data and Measurement	Elements of Proactive Behavior	Data Gathering Technique and Analysis	Main Findings
Hirschi and Freund (2014)	Proactive Career Behaviors → Career Engagement	Primary data collected from 67 German university students	- Proactive Work Behavior	- Questionnaire - Hierarchical linear regression analysis	Above-average levels of career engagement within individuals was predicted by higher than average perceived social support and positive emotions during a given week.

"→" represents the direction of influence, what it had influence on

2.4.2 Firm Performance

Firm performance can be measured by several approaches that indicate the effectiveness of a firm's business operations, such as profitability, growth, and market value. In addition, the volatility of firm performance is an indicator that can be measured in regard to risk represented by the variance of the firm's financial ratios. In general, firm performance refers to the ability to generate earnings proportionate to net cash flows and cash from operations, such as the firm's investments, financing activities, and operating activities. However, when firms expect to get a high return, they will usually also be faced with several risks as well. This paradigm also discusses "high risk high return" to explain the factual situation related to improving returns (Mathews & Salmon, 2007).

In terms of this study, firm performance was separated into two main concepts: financial performance concepts and risk management concepts. The former was used to measure and indicate a firm's financial performance using indicators such as the profitability of the firm measured by the returns generated from their assets, equity, or investments (including Return on Assets, Return on Investment, Return on Equity, EBITDA margin, and Return on Sales). Growth of a firm was measured by evaluating whether a firm was growing in revenue and size (including Net Profit Growth Rate and Sales Growth Rate). The market value of the firms was measured by determining the price difference between the market value and book value on the firm's balance sheet (including Price-to-Earnings Ratio, Market-to-Book Ratio, and Cash Flow per Share). Risk management concepts were used to measure the volatility and uncertainty related to firm performance, including the variance in profitability ratios, variance in firm growth, and variance in market value. Risk management concepts are firm outcome elements that represent the operational outputs from undertaking business as measured against potential unintentional negative outcomes that may occur. Several previous research studies mentioned the firm performance indicators that are categorized and summarized in the table 2.2.

Table 2.2 Summary of Studies on Firm Performance in Previous Researches

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
Dechow (1994)	Accounting Earnings → Cash Flows → Firm Performance	Secondary data collected from the COMPUSTAT Merged Expanded Annual Industrial file	- Earnings per Share - Cash from Operations per Share (CFO) - Change in The Balance of The Cash Account (NCF) - Long-term Operating Accruals per Share	- Data Base - Pearson correlations - The likelihood ratio test - Multiple linear regression analysis	Accruals play an important role in improving the ability of earnings to reflect firm performance.
Roberts and Dowling (2002)	Corporate Reputation → Sustained Superior Financial Performance	Secondary data collected from 1984 to 1998, Fortune reports on America's Most Admired Corporations.	- Firm Profitability - Market-to-Book Value - Firm Size	- Data Base - Autoregressive model - F-test - Proportional hazards regression model	There is a positive relationship between reputation and financial performance.
Özer and Tınaztepe (2014)	Strategic Leadership Styles → Firm Performance	Primary data collected from 215 white-collared members	- Financial Performance - Product Market Performance - Shareholder Return	- Questionnaire - Multiple regression analysis	Leadership styles have a positive relationship with firm performance.

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
Richard et al. (2009)	Measuring Organizational Performance → Measurement Practices	Longitudinal data	- Profit Margin - Return on Shareholder Funds - Return on Total Assets - Return on Capital Employed - Cash Flow to Operating Revenue - Return on Sales - Change in Market Capitalization - Total Shareholder Return - Sales Growth - Tobin's Q	- Factor analysis	Alternative methodological formulations are methods of appropriately aligning research contexts with the measurement of organizational performance.
L. Donaldson and Davis (1991)	CEO Governance → Shareholder Returns	Secondary data from a convenience sample of 337 U.S. corporations collected from Standard and Poor's COMPUSTAT Services Inc.	- Shareholder Return on Equity - Corporate ROE Performance - Shareholder Wealth	- Data Base - Mean comparison	An empirical tests failed to support agency theory and provide some support for stewardship theory.
Engelen et al. (2015)	Entrepreneurial Orientation → Firm Performance	Primary data collected from 790 small and medium sized firms in six countries Secondary data collected from Sales information for 59 firms	- Operational Performance - Financial Performance - Customer Satisfaction - Market Effectiveness	- Questionnaire - Factor analyses (EFA) - Confirmatory factor analyses (CFA) - Regression analyses	Regardless of national setting, four transformational behaviors and leader behavior positively affect the relationship between EO and firm performance.

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
M.-C. Chen, Cheng, and Hwang (2005)	Value Creation Efficiency → Firms' Market Value and Financial Performance.	Secondary data drawn from Taiwanese listed companies and Public's Value Added Intellectual Coefficient	- Market-to-Book Value Ratios of Equity - Return on Equity (ROE) - Return on Total Assets (ROA) - Growth in Revenues (GR) - Employee Productivity (EP)	- Data Base - Regression models	Firms' intellectual capital has a positive impact on market value and financial performance.
Delen et al. (2013)	Financial Ratios → Firm Performance	Secondary data drawn from 2,345 Turkish firms	- Liquidity Ratios - Asset Utilization or Turnover Ratios - Profitability Ratios - Growth Ratios - Asset Structure Ratios - Solvency Ratios	- Data Base - Exploratory factor analysis (EFA) - Decision tree algorithms - Overall Accuracy (AC) analysis - Sensitivity analysis	Earnings Before Tax-to-Equity Ratio and Net Profit Margin are the two most important variables.
Santos and Brito (2012)	Subjective Measurement Model → Firm Performance	Primary data collected from 116 respondents who were high-level executives within Brazilian organizations	- Profitability - Market Value - Growth - Employee Satisfaction - Customer Satisfaction - Environmental Performance - Social Performance	- Questionnaire - Confirmatory Factor Analysis	The final model had six first-order dimensions: profitability, growth, customer satisfaction, employee satisfaction, social performance, and environmental performance.

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
Selvam et al. (2016)	Subjective Measurement Model → Firm Performance	Reviewing Literature from previous research	- Profitability - Market Value - Growth - Employee Satisfaction - Customer Satisfaction - Environmental Performance - Social Performance - Environmental Audit Performance - Corporate Governance	Documentary study	The final subjective model developed contained nine determinants.
Saeidi et al. (2015)	Corporate Social Responsibility → Firm Financial Performance	Primary data collected from 205 Iranian manufacturing and consumer product firms	- Growth - Return on Equity (ROE) - Return on Sales (ROS) - Return on Assets (ROA) - Return on Investment (ROI) - Net Profit Margin	- Questionnaire - CFA analysis - SEM analysis	The link between CSR and firm performance is a fully mediated relationship.
Heikal et al. (2014)	Return On Asset, Return On Equity, Net Profit Margin, Debt To Equity Ratio, and Current Ratio → Growth Income	Secondary data drawn from 55 samples using purposive sampling	- Return On Asset - Return On Equity - Net Profit Margin - Debt To Equity Ratio - Current Ratio - Growth Income	- Multiple linear regression - Classical assumption test	Simultaneously independent variables Return On Asset, Return On Equity, Net Profit Margin, Debt To Equity Ratio and Current Ratio with F test, worked together to effect growth income.

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
Wang et al. (2015)	Success Traps → Dynamic Capabilities → Firm Performance	Primary data collected from 113 UK small and medium-sized high-tech firms	- Sales Growth - Growth in Profitability	- Structural equation modelling	Success traps have a significant, strong negative effect on DCs, which in turn have a weak positive effect on firm performance.
Orlitzky and Benjamin (2001)	Corporate Social Performance (CSP) → Firm's Financial Performance	Theoretical argument drawn from the meta-analytic data set	- Firm Risk (Variance) - The Standard Deviation of The Observed Correlations - The Coefficient of Variation	- Correlations and their variances analysis	The higher a firm's CSP, The lower its financial risk.
McGuire et al. (1988)	Corporate Social Performance (CSP) → Firm's Financial Performance	Secondary data obtained from the COMPUSTAT data base	- Standard Deviation (SD) - Beta (Coefficient)	- Pre- and post-survey analysis	The measures of risk are more closely associated with social responsibility than previous studies have suggested.
Anderson and Reeb (2003)	Founding-Family Ownership → Firm Performance	Secondary data obtained from the Standard & Poor's 500	- Return on Assets (ROA) - Tobin's Q - Firm Risk (standard deviation of monthly stock Returns) - Growth Opportunities	- Mean Comparison - Correlation analysis - Time Series analysis - Multivariate Analysis	Family firms perform better than nonfamily firms, and the relation between family holdings and firm performance is nonlinear.
K. D. Miller and Chen (2004)	Variable Organizational Risk → Firm Performance	Secondary data drawn from manufacturing companies with four-digit SIC codes from 2000 to 3999	- The Standard Deviation of ROA - Industry Mean Risk - Bankruptcy Risk - Risk Taking - The Market to Book Value Ratio	- Empirical tests - Ordinary least squares (OLS) regression analysis	The variables affecting risk and the sizes of these effects differed across performance categories.

Study	Operationalization of Firm Performance	Sources of Firm Performance Data and Measurement	Elements of Firm Performance	Data Gathering Technique and Analysis	Main Findings
Watson and Robinson (2003)	Female-Owned SMEs Underperform Male-Owned SMEs → Firm Performance	Primary data	- Growth in Sales or Profit - The Variation in Profits (Risk)	- Regression analysis	Profits are significantly higher for male-controlled SMEs and there is no significant difference between the performances of male- and female-controlled SMEs.

"→" indicates "had an influence on"

2.5 Independent Variables

2.5.1 Dimensions of Perceived Risk

To better understand the qualitative and quantitative sources of risk and improve the categorization of risks from the perception of a firm's managers, Information about the sources of the risks and the critical risks that influenced firm performance and operating processes were gathered from the 2017 annual reports of 483 firms listed on the Stock Exchange of Thailand (SET) and categorized as strategic risk, operational risk, financial risk, or compliance risk.

Strategic risk refers to the uncertainty regarding a firm's planning and decision making for developing a competitive advantage and the returns of the firm, such as price volatility, uncertainty in political situation, economic depression, and policy issues (K. D. Miller & Waller, 2003; Nocco & Stulz, 2006; Zsidisin, Ellram, Carter, & Cavinato, 2004). Operational risk refers to possible events that may affect a firm and its internal ability to produce goods and services in the contexts of quality, timeliness, and profits. Sources of operational risk can lead to the breakdown of core operations and inadequate processing and manufacturing capabilities (Meulbrook, 2000; Simons, 1999). In addition, hiring or promoting un-, or under-, qualified employees and technological changes may have an influence on operating exposures. Financial risk is the exposure to the potential loss for the firm due to financial market changes, such as liquidity risks, credit risks, foreign exchange risks, interest rate risks, and investment risks (Meulbrook, 2000). Compliance risk refers to the risk of legal or regulatory sanctions caused by financial loss or loss to reputation. In addition, it is also related to the failure to comply with all of the applicable laws, rules regulations and required product and service standardization (Doyle, 2007; Ford, 2008; Schwartz, 2000; Spira & Page, 2003; Tanriverdi & Du, 2009).

In terms of this study, risk perception is the managerial staff's ability to recognize or discern the potential negative consequence arising from a risk that may affect their firm. Therefore, risk perception dimensions can be separated into different categories based on how its recognition influences a firm and its surroundings (table 2.3).

Table 2.3 Summary of Studies on Risk Perception in Previous Researches

Study	Operationalization of Risk Perception	Sources of Risk Perception Data and Measurement	Elements of Risk Perception	Data Gathering Technique and Analysis	Main Findings
Slovic (1987)	Perceived risk is quantifiable and predictable	Primary data	- Understand and Predict Responses to Risks	- Factor analysis	Laypeople's risk perceptions and attitudes are closely related to the position of a hazard within the factor space. Most important is the factor "Dread Risk".
Sjöberg (2000a)	Factors in Risk Perception	Primary data collected from 1,224 respondents	- Attitude - Risk Sensitivity - Specific Fear	- Multiple regression analysis	It has many implications on the relationship between attitude and perceived risk.
Slovic and Peters (2006)	Risk Perception and Affect	Reviewing literature from previous research	- Instinctive Reactions to Dangerous - Intuitive Reactions to Dangerous	- Documentary study	There are important ways that it impacts how people perceive and evaluate risk.
Simon, Houghton, and Aquino (2000)	Cognitive Biases → Risk Perception → Decision to Start A Venture	Primary data collected from 191 students pursuing a Masters of Business Administration	- Overconfidence - The Illusion of Control - The Belief in The Law of Small Numbers	- Survey based on a case study regarding a decision - Regression analysis	Individuals start ventures because they do not perceive the risks involved, and not because they knowingly accept high levels of risks.
E. U. Weber and Hsee (1998)	Cross-Cultural Differences and Attitude → Risk Perception	Primary data collected from 86 students from the USA, 81 Polish students, 31 German students, and 85 Chinese students	- Cross Cultural Differences - Attitude (Averse or Seeking)	- Questionnaire - Mean comparison - Regression analysis	Most naturally explained within a risk-return conceptualization of risky choices are the results.

Study	Operationalization of Risk Perception	Sources of Risk Perception Data and Measurement	Elements of Risk Perception	Data Gathering Technique and Analysis	Main Findings
Horst, Kuttschreuter, and Gutteling (2007)	Perceived Usefulness, Personal Experiences, Risk Perception and Trust → Adoption of E-government Services	Primary data collected from 238 persons in trains	- The Cognitive Concept - The Affective Risk Response	- Questionnaire - Structural Equation Modelling analysis	The perceived usefulness of electronic services in general is the main determinant of the intention to use e-government services.
Adger et al. (2016)	Perceptions of Fairness → Private Intentions	Primary data collected from 356 households affected by a flood event	- Context - Experience - Knowledge	- Questionnaire - Regression analysis	Aspects of fairness are related to willingness to take adaptive action but vary with context, experience, and knowledge of flooding.
T. Das and B.-S. Teng (2001)	Risk Perception → Structural Preference → Strategic Alliance Structure	Reviewing literature from previous research	- Relational Risk (concern about opportunistic behavior) - Performance Risk (probability and consequences)	- Proposition determining	The structural preferences of partners are based on their perceptions of relational risk and performance risk, and the overall objective is to minimize the total risk.
Peters, Burraston, and Mertz (2004)	Negative Emotion → Risk Perception → Stigma Susceptibilities	Primary data collected from 195 participants	- Worldviews	- Questionnaire - Structural Equation Modelling analysis	The model fit better with perceived risk as a function of negative emotion rather than vice versa.
Vlaev, Chater 1, and Stewart (2009)	Dimensionality of Risk Perception → Retirement Investments	Primary data collected from 56 adult participants	- Feeling of Loss of Control - Concern - The Worry and Anxiety - Lack of Trust - The Fear - Lack of Confidence	- Questionnaire - T-tests	Although people can exhibit stable risk preferences if we ask them the right questions, these preferences were very specific to the risk domain.

Study	Operationalization of Risk Perception	Sources of Risk Perception Data and Measurement	Elements of Risk Perception	Data Gathering Technique and Analysis	Main Findings
Bouyer, Bagdassarian, Chaabanne, and Mullet (2001)	Personality → Risk Perception	Primary data collected from 363 participants	- Transitional Anxiety - Enduring Anxiety	- Questionnaire - Multiple regression analysis	Transitional and enduring anxiety contributed significantly to the prediction.
Boermans and Willebrands (2017)	Risk Perception → Firm Performance	Primary data collected from 611 entrepreneurs	- Tendency to See and Interpret Risks - Differences in Heuristics	- Stratified sampling - Interview - OLS regressions analysis	The worst performing entrepreneurs are those with low risk perception and high risk propensity.

"→" indicates "had an influence on"

2.5.2 Control Variables

To better understand the relationship between the main independent variables and dependent variables in this study, the researcher added some control variables that may affect the main relationships. Control variables were adapted from previous research on employees working habits and consisted of gender, age, educational level, faculty or major of study, organizational unit, work experience with current firm, and monthly salary (Bal & De Lange, 2015; Lins, Servaes, & Tamayo, 2017; C. A. Thompson, Beauvais, & Lyness, 1999; White, Hill, McGovern, Mills, & Smeaton, 2003).

2.6 Relationship between Dependent and Independent Variables

2.6.1 Perceived Risk and Proactive Behavior

The superior firms are willing to deal with their uncertain environments by having risk-accepting cultures that naturally display a greater level of proactive behavior among the employees of those firms (Covin & Slevin, 1991). By accepting uncertainty, a firm's culture can perceive more opportunities in the external environment than those firms with cultures focused on avoiding uncertainty (S. L. Mueller & Thomas, 2001). According to this perspective, managers in corporate cultures where uncertainty is accepted can perceive the external environment properly and also create a competitive advantage related to entering new markets (Lieberman & Montgomery, 1988). Managers working for firms under high risk conditions might take engage in proactive behaviors to help ensure firm survival when they perceive risks to their firm. Sometimes, it is necessary for firms to give incentives for their employees to increase their proactive behavior.

2.6.2 Proactive Behavior and Firms' Performance in Terms of Financial Performance and Risk Management Concepts

In the proactivity literature, one of the central proposition guides is proactive behavior which is meaningfully associated with the key criteria focus of a firm. One study suggests that proactivity could be able to facilitate job performance, whereby proactive individuals will make choices and form situations to enhance the likelihood

of high performance levels (Yang & Chau, 2016). Specifically, proactive tendencies may influence individuals, driving them to study their environments in a rigorous manner, and it can also help individuals to become aware of occurrences due to environmental changes and possible problems associated with those changes (Turban, Moake, Wu, & Cheung, 2017). Understanding how employees perceive their work environments and how those perceptions affect employee proactive behaviors should be instrumental insights for firms seeking to improve their internal systems. When enhancing proactivity in customizing active environments, employees can also optimize their own strengths and performances in regard to their work (J Michael Crant, Hu, & Jiang, 2016). Proactive individual performance may be enhanced by a variety of instrumental behaviors, for instance, by engaging in information searching, negotiating, issue selling, role restructuring, resource gathering, skill developing, sense making, and socializing (Ashford & Black, 1996; Jong, Parker, Wennekers, & Wu, 2015; Parker & Collins, 2010).

According to this perspective, a significant positive influence of employee behavior on firm performance was found in the study by Bart, Bontis, and Taggar (2001) related to how employees who have consistent work behavior can lead to greater firm performance. Proactivity may facilitate firm performance by inspiring stakeholders of a firm to foster social, financial, and political proactivity to demonstrating the proficient performance of their employees (Parker et al., 2006). Moreover, skillful performances could serve as first-hand chance for learning how to enhance the capacity of employees that are anticipate to engage in proactive behavior to implement changes and improve firm performance (Grant & Ashford, 2008; Vora, Vora, & Polley, 2012).

2.6.3 Moderating Variables

In this study, the researcher focused on examining two phenomena that have a moderating effect on the relationships among 1) a firms' managers' perceived risk and the firms' manager's proactive behavior and 2) firms' manager's proactive behavior and the firms' performance in terms of financial performance and risk management concepts, namely the manager's organizational unit and the type of firm.

2.6.3.1 Types of Organizational Units

Several previous research studies how the differences in organizational function was related to the moderating effects observed in several different contexts. Stewart and Barrick (2000) studied team structure and performance and discussed how the differences in task type had a moderating effect on the relationship between conceptual tasks and behavioral tasks. The moderating effect on organizational outcomes, managerial discretion by the high and low discretion level of a manager was determined to be related to differences in constraint levels, considering actions, and making decisions (Finkelstein & Hambrick, 1990). There are important reasons to determine what a manager will do when they face with a different task, situation, or responsibility. According to Hackman and Lawler (1971), enriched jobs, approaches to give employees greater responsibility by increasing the range and complexity of tasks, were studied as a moderator that referred to the elements of an employee's job duties and consisted of being personally responsible for work, type of skills and task identity, and feedback. In addition, the organizational unit, in terms of a continuum ranging from mechanistic to organic, was explained in different a way (Ambrose & Schminke, 2003). The study of contextual performance was discussed how a resource, mitigated behavioral and psychological strain symptoms in the context of abusive supervision in an organic work unit structure that can reduce the imbalance of authority between subordinates and supervisors. Conversely, mechanistic structures refer to the centralization of the control and authority in managers who enforce strict adherence to rules and procedures (Aryee, Sun, Chen, & Debrah, 2008). According to this perspective, a manager who works in an organic work unit structure should provide more worker autonomy and have less tolerance for overbearing supervision. In contrast, managers who work in mechanistic work unit structure would exacerbate the inequality of power between subordinates and supervisors.

The context of this study focused on the differences in organizational units based on the different job responsibilities of managers in regard business functions. These were separated into two main groups: line function managers and staff/support function managers (Alfes, Truss, Soane, Rees, & Gatenby, 2013). The former refers to job responsibilities that are directly related to the production of a firm, such as production, sales, or marketing. The latter refers to job that support to

the line function workers, such as human resources, accounting, or customer relations. Thus, some methods for dividing tasks up within a company, and how the tasks may be distributed between groups or departments, may influence managerial staff's proactive behavior. Moreover, these different organizational units may influence firm performance in terms of both financial performance concepts and risk management concepts when the firm's managers engage in proactive behavior to carry out their work and responsibilities.

2.6.3.2 Types of firms

The firms listed in the Stock Exchange of Thailand (SET) were classified into two groups in terms of profitability: firms positioned on the above average variance of the industry's return on asset (ROA) and firms positioned below average variance of the industry's ROA. The position of firms was classified by using the median of the average variance of the industry's ROA as indicator (Fiegenbaum, 1990). Based on this perspective, the prospect theory was used to classify types of firms in relation to risk and return concepts. The different circumstances related to a firm's returns may influence the working behavior of each firm's managers because they have to pay attention to finding ways to ensure the firm's and try to create incentives for themselves and their subordinates to use proactive approaches when performing their jobs when they perceive and understand the risks to the firm. Moreover, managers have the responsibility for finding solutions to problems and uncertain situations.

Another type of firm was added to this study by gathering information on firms related to the differences between firms in the context of having a formal risk management department. The previous research on risk management of firms by Pagach and Warr (2011) referred to how hiring a Chief Risk Officer (CRO) for a firm influenced the firm performance positively. According to this perspective, the policy of firms which hired a CRO tended to improve their performance in areas such as financial characteristics, asset characteristics, market characteristics, or managerial characteristics. Thus, the researcher choses to study whether a firm had a formal risk management department in its organizational structure or not effected its performance and risk management in this study. The different types of organizational structure may influence firm performance because of their effects on different business functions.

Thus, managers under different firm structures may exhibit different working behaviors and could eventually lead to firm differences in performance outcomes.

2.7 Conceptual Model

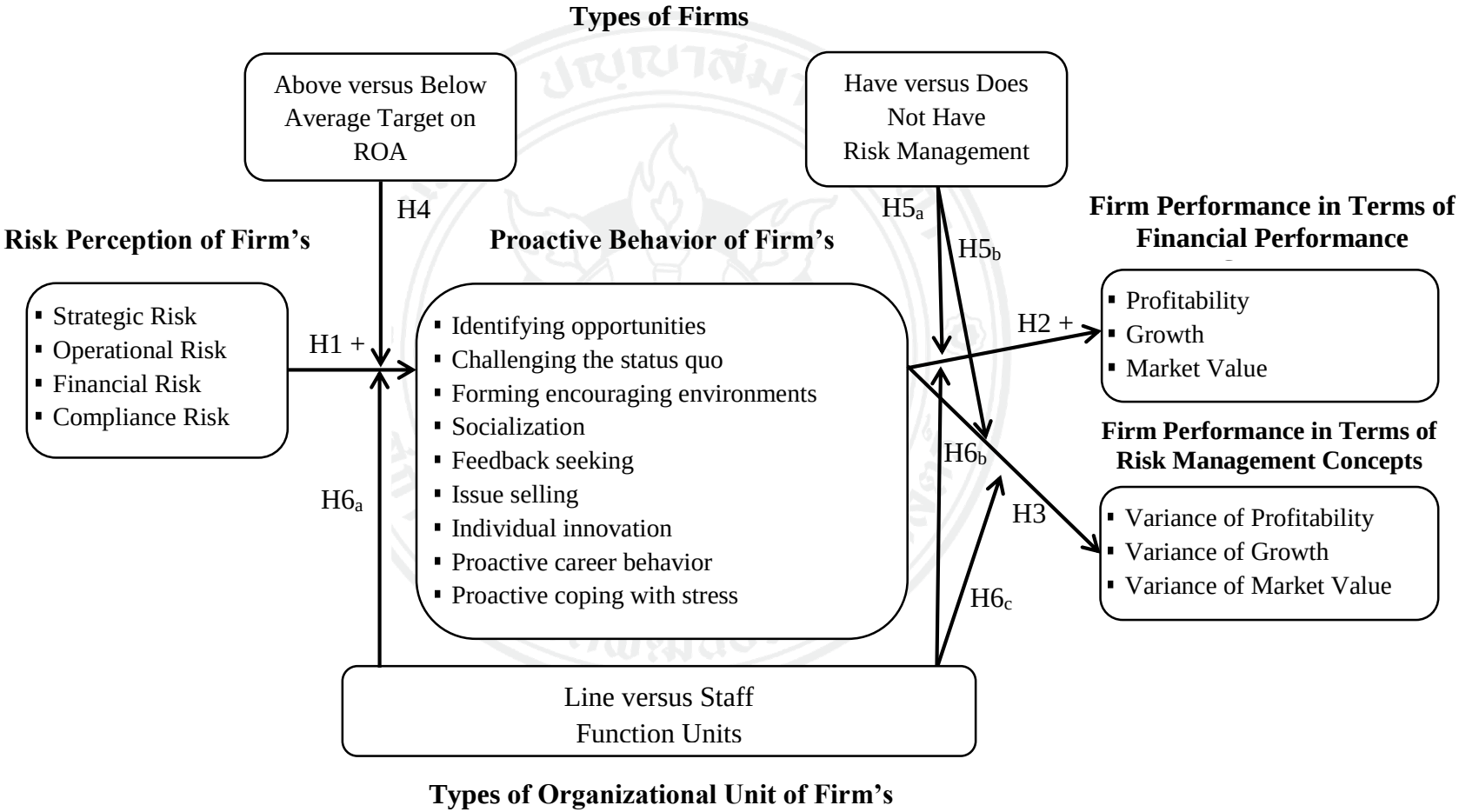

Figure 2.1 Research Conceptual Model

2.8 Development of Hypotheses

2.8.1 Hypotheses on Firms' Perceived Risk by Managers and Firms' Manager's Proactive Behavior

According to the Protection Motivation theory, people tend to take actions to protect themselves from threatening events when they perceive perils or risks that might have the potential for causing undesirable consequences (R. W. Rogers, 1975). Risks to a firm are crucial factors for all stakeholders to consider in operating a business before engaging in behaviors or making decisions to take action to address those risks. Managers should be more proactive in jobs in which their proactive behavior seems become an increasingly crucial element in job performance (J. Michael Crant, 2000). In regard of this perspective, the active role is taken by employees in approaching their work initiates changes in the situations and forms favorable conditions. Proactive behavior is different from a more passive, or reactive, behavioral pattern. The chance to initiate actions and accumulate information tend to be sought out by proactive people in an effort improving things because they will not passively wait for the opportunities and information to come to them (Z. Jiang, 2017). Banham (2004) stated that proactive risk management practices can improve the ability of the firm to manage both existing and emerging risks. Understanding the key potential effects of a risk is required to the capable of visualizing the associations between risks. Moreover, proactive approach refers to thinking outside of the box when emerging risks are identified and responding with the prompt measures to prevent them, moderate their effects and, sometimes, seize upon their presence to create opportunities (Barbuto Jr, Bugenhagen, Stohs, & Matkin, 2016; Schmitt et al., 2016).

In this study, the practice of having a proactive approach must be shared throughout the firm by the business owners, risk managers, and executives so that their views about risk are aligned along with their with their perceptions and understanding regarding the responsibility of addressing risks. Dominique VandeWalle and Long L. Cummings (1997) stated that people tend to engage in certain proactive behavior after evaluating the social costs and other risks. Managers,

who are responsible for tasks and undesirable occurrences that might happened, have to take more proactive actions to manage these occurrences, rather than waiting for something to change. Thus, the following hypothesis is presented:

Hypothesis 1: A firms' perceived risk by managers will be positively associated with their proactive behavior.

Based on the proactive behavior perspective, employees who have consistent work behaviors can lead to improved performance by the firm (J. Michael Crant, 2000; Frese & Fay, 2001). Proactivity may facilitate firm performance by inspiring the firm's stakeholders to foster social, financial, and political proactivity that demonstrates proficient performance to the employees. When managers engage in more proactive behavior, they enhance and support the operational functions of the firm and, eventually, tend to the improvement in the firm's performance in terms of profitability, growth, and market value. Moreover, they will be the part of firm's ability to mitigate risks to the firm. The relationship between proactivity and firm performances will be an issue examined in this study. Thus, the following hypotheses and sub-hypotheses were presented:

Hypothesis 2: A firms' manager's proactive behavior will be positively associated with the firms' performance in terms of financial performance.

Hypothesis 2_a: A firms' manager's proactive behavior will be positively associated with the firms' performance in terms of profitability.

Hypothesis 2_b: A firms' manager's proactive behavior will be positively associated with the firms' performance in terms of growth.

Hypothesis 2_c: A firms' manager's proactive behavior will be positively associated with the firms' performance in terms of market value.

Hypothesis 3: A firms' manager's proactive behavior will be negatively associated with risks to firms' performance in terms of financial concepts.

Hypothesis 3_a: A firms' manager's proactive behavior will be negatively associated with profitability risks to a firms' performance.

Hypothesis 3_b: A firms' manager's proactive behavior will be negatively associated with growth risks to a firms' performance.

Hypothesis 3_c: A firms' manager's proactive behavior will be negatively associated with market value risks to a firms' performance.

2.8.2 Hypotheses on the Moderating Roles of the Type of Firm and the Organizational Units of the Manager

Several previous research studies found the differences in firm type to be a moderator that affected the main relationship. For example, in studies on product innovation and quality, they were moderated by firm size (Koufteros, Cheng, & Lai, 2007), the relationship between board characteristics and firm innovation was contingent upon firm size (Zona, Zattoni, & Minichilli, 2013), and the relationship between firm alliance portfolios and shareholder returns was moderated by portfolio structure and firm-level uncertainty (Mouri, Sarkar, & Frye, 2012). A similar study done by Li, Zhao, Tan, and Liu (2008) carried on to examine on the moderating effect of entrepreneurial orientation in relation to three dimensional constructs (proactiveness, innovativeness, and risk taking) on the performance and market orientation of small enterprises.

In this study, the differences between firm was focused on the firm conditions based on prospect theory, which refers to risk taking when firms are operating below average target and risk avoiding when firms are operating above average target, as indicated by using the risk and return of their ROA. Because of financial performance pressures, managers who work in below average target ROA firms will engage in more proactive behavior working an attempt to enhance firm performance when they perceive risks to the firm. Thus, the following hypothesis was presented:

Hypothesis 4: The relationship between a firms' perceived risk by its managers and the managers' proactive behaviors will be stronger for managers who work at below average target firms than for those who work at above average target firms.

Another type of firm referred to the organizational structure that is related to employee work behaviors and the firm's generation, development, and implementation of new ideas (Beyer & Trice, 1978; Damanpour, 1991). There are some distinguishing characteristics of firm structures, such as formalization, centralization, and specialization. When firms have different functional structures, firms will conduct their business operations in different ways and, eventually, achieve different outcomes. Some previous research on the risk management of firms by Pagach and Warr (2011) referred to how hiring a Chief Risk Officer (CRO) for a firm influenced the firm's performance positively. Hiring a CRO infers paying attention to managing the risk management policy of firm and represents two different types of firm based on having a formal risk management unit built into their organizational structure.

In this study, establishing a formal risk management department was considered as a factor to be examined to determine if the different types of firm structure affected proactive behavior and firm performance. Firms that had a formal risk management departments in their organizational structure may be able to operate their business to achieve better performance and lower their level of risk when their managers take proactive actions. Thus, the following hypotheses were presented:

Hypothesis 5_a: *The positive relationship between firms' manager proactive behavior and firms' performance, in terms of financial performance concepts, will be stronger for firms having a formal risk management department than for those do not have a formal risk management department in their organizational structure.*

Hypothesis 5_b: *The inverse relationship between a firms' manager's proactive behavior and risks to the firms' performance, in terms of financial performance concepts, will be stronger for firms with a formal risk management department than for those that do not have a formal risk management department in their organizational structure.*

The other moderating effects in this study emphasized the differences in the organizational unit that is related to the job characteristics, tasks, and responsibilities of the employee. A study on the relationship between climate perceptions and subunit effectiveness found evidence that these were moderated by task type and the core technology based on whether the task was viewed as routine or non-routine at the individual level (Middlemist & Hitt, 1981). Similarly, different tasks moderated a positive relationship between the age composition of teams and team performance (Wegge, Roth, Neubach, Schmidt, & Kanfer, 2008). In addition, task type refers to the different forms of working, such as generating ideas and plans, negotiating conflicts, choosing between alternatives, and performing physical work (Stewart & Barrick, 2000). In the context of business, different types of managers refers to the differences in their roles, tasks, responsibilities, or positions in relation to their work. Managers who are responsible for different types of tasks or working functions, may take different actions when they perceive perils or risks to their firm. In addition, the nature of proactive managers will motivates them think about and consider the futures expectations for them and the firm, and, then, they will take action and make decisions to find a way to prevent the problems they foresee, rather than waiting until an even occurs and coping with the aftermath of an unexpected event (Ohly & Fritz, 2007).

In this study, manager roles refers to the differences between the line function work units and support function work units in the firm's organizational structure. Managers who work in line functions, tend to be more proactive workers when they perceived risks to their firm, in comparison to those who work in support functions. In addition, firm performance might show more the positive results when managers working in line function units engage in proactive behavior in comparison to managers who work in support function units. Moreover, it should lower the level of risk to the firm's performance when line function managers take proactive action. Thus, the following hypotheses were presented:

Hypothesis 6_a: The relationship between firms' perceived risk by its managers and the manager's proactive behavior will be stronger for managers who work in line function units than for those who work in staff function units.

Hypothesis 6_b: The positive relationship between a firms' manager's proactive behavior and the firms' performance, in terms of financial performance concepts, will be stronger for managers who work in line function units than those who work in staff function units.

Hypothesis 6_c: The inverse relationship between a firms' manager's proactive behavior and the risks to the firms' performance, in terms of financial performance concepts, will be stronger for managers who work in line function units than those who work in staff function units.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

Quantitative methods, in which statistical techniques are used to measure and analyze numerical data, are used in this study to analyze data from primary and secondary information. The primary data was collected by questionnaires surveying respondents who are managers at firms listed on the SET. The secondary data was collected by gathering data from a five-year period (2013 – 2017) of annual report of those firms and the Thomson Reuters database.

To achieve a generalizable, random pool of respondents, the researcher focused several sampling techniques and employed the steps. First, the researcher used stratified random sampling to separate the list of firms listed on the SET into two groups, one containing all firms positioned above average target, and the other containing all firms positioned below average target, which was determined based on the median of the average of Return on Assets (ROA) for each industry to classify each firm's positioning. Second, each group of firms was categorized into two groups based on two types of respondent, one group consisting of the line function managers and the other consisting of support function managers, using stratified random sampling. Third, the number of respondents was calculated by using Taro Yamane's formula that referenced the total number of firms based on the availability of their 2013 - 2017 annual report information. Next, stratified proportional sampling was used to determine number of firms from each industry. Finally, for the respondents, the managers of SET listed firms, to be included to represent the firm's performance in terms of risk management concepts, the minimum acceptable number of respondents from each firm was two: at least one manager that works in a line function unit and at least one working in a support function unit.

In terms of secondary data, the financial reports of the firms were collected to determine the firm's performance in terms of both financial performance and risk management concepts that consisted of information on 1) profitability performance (including ROA, ROE, ROI, ROS, and EBITDA), 2) growth performance (including Net Profit Growth Rate and Sales Growth Rate), 3) market value performance (including Price-to-Earnings Ratio, Market-to-Book Ratio, and Cash Flow per Share), 4) the risks to financial performance (including variance of profitability, variance of growth, and variance of market value), and 5) having a formal risk management department. In addition, the researcher used the ROA data information obtained from 2013 to 2017 to classify type of firm.

3.2 Data Collection and Data Analysis

3.2.1 Unit of Analysis

In this study, the researcher selected firms listed on the Stock Exchange of Thailand to be the unit of analysis because the firm's information is disclosed to public and easily accessed. On April 30, 1975, the stock exchange of Thailand (SET) was established under the Securities and Exchange Act of 1992, and the supervision of the Security Exchange Commission (SEC). All trading on the SET is restricted to authorized and listed securities (Pukthuanthong-Le & Visaltanachoti, 2009). All firms in the SET have to produce an annual report each year and reveal certain legally required information to the public. There are currently more than 600 firms registered in the SET (SET, 2015). The research objective of this study was to investigate the effects of the perceived risk of the firms' managers on their proactive behavior and, eventually, of their proactive actions on the firm's performance. Four hundred and eighty-three firms listed on the Stock Exchange of Thailand (SET) from 8 industries (including property and construction, financials, agro & food, technology, services, consumer products, industrials, and resources) were selected as the unit of analysis based on the availability of their 2013 - 2017 annual report information.

3.2.2 Sample and Data Collection

This research focused on sampling the managerial staff of firms listed on the Stock Exchange of Thailand because the managers can perceive and understand their firm performance. Moreover, the managers face both organizational problems and organizational risks directly as part of their job duties, and they responsible for solving hazardous situations immediately. In this study, mixed probability sampling methods were used to collect the data, including stratified sampling techniques and simple random sampling techniques.

Firstly, the probability sampling method provides random sampling in which the same probability of being selected exists in relation to the size for each sample (R. B. Thomas, 1985). However, it does not require equal selection probabilities, only that they be known. The 483 SET listed firms were selected as the unit of analysis by considering the availability of their 2017 annual report information. There are 8 industries on the SET that consist of 1) 94 property and construction industry firms, 2) 55 financial industry firms, 3) 48 agro and food industry firms, 4) 35 technology industry firms, 5) 98 service industry firms, 6) 41 consumer product industry firms, 7) 69 industrial industry firms, and 8) 43 resource industry firms. According to this information, the researcher calculated the proportion of each industry that was used in the random selection steps.

Secondly, using Taro Yamane's sample selection formula (Yamane, 1973) it was determined that a minimum sample size of 222 firms was required to achieve a 95% confidence level. Then, stratified random sampling method was used to determine the sample by randomly selecting firms according to the percentage of each industry. Then, firms were randomly selected from the two types of firms based on ROA, firms positioned above average target and firms positioned below average target. Next, at least one manager working in a line function and another one working in a support function were selected to represent the firm as respondents in this study. Bertrand and Schoar (2003) stated that at least one specific top executive or manager can be a practical respondent for each firm. However, the greatest number of respondents were collected because, as Marshall (1996) mentioned, the possibility of a sampling error is smaller when collecting a larger sample size.

Finally, the respondents in this study were recruited using the convenience sampling method which can be employed using several channels, such as sending a formal letter to a human resource department for distribution and using a web-based questionnaire. The sequence of the data collection process was as follows. First, the researcher contacted the Human Resources department of each firm (a total of 483 firms) listed on the SET to clarify the details related to the research objectives, prospective sample group, and the approach to respond the questionnaire, and delivered letters requesting cooperation with the research data collection issued by NIDA, along with an online questionnaire via email to the human resources manager to be distributed to the managers of each functional unit. However, some firms listed on the SET required additional formal documentation related to the data collection, such as printed copy of the questionnaire, and which was sent via the post office. Second, after making initial contact, the researcher re-contacted the Human Resources department (some firms had to re-contacted 3 – 4 times) to follow-up regarding their participation and to ensure they would be providing the requested information. Finally, out of the firms contacted via a letter to their Human Resources department, two hundred and thirty-one firms replied to the researcher and provided the required number of respondents, yielding a 48 percent response rate from the firms. In total, 488 surveys were completely filled out. However, the researcher cannot specify the response rate of the respondents because it is dependent on the number of questionnaires distributed by human resources department for each firm, and that is unknown.

3.2.3 Measures

3.2.3.1 Risk perception

The main independent variable, Risk Perception, was measured by asking the respondents to indicate the level of risk they perceived that may affect their organization. This measure was adapted from studies (Adger et al., 2016; Boermans & Willebrands, 2017; Bouyer et al., 2001; T. Das & B.-S. Teng, 2001; Horst et al., 2007; Peters et al., 2004; Simon et al., 2000; Sjöberg, 2000a; Slovic, 1987; Slovic & Peters, 2006; Vlaev et al., 2009; E. U. Weber & Hsee, 1998) and consisted of four items (strategic risk, operational risk, financial risk, and compliance risk). These items

were scored on a five-point rating scale that represented the characteristics of the respondents related to perceiving their organizational risks (revealed on Table 3.1), ranging from 1 (Strongly disagree) to 5 (Strongly agree). Samples of statements used in the items are “I can perceive the effect of losses resulting from the firm’s defective business strategies” and “I can perceive financial conditions that may impair the firm’s ability to achieve adequate returns”. This variable was utilized for all hypothesis testing as an interval scale derived from primary data.

Table 3.1 Risk Perception Variables, Questions, and Authors

Variables	Questions	Authors
1. Strategic Risk	1.1 I can assess the negative impact on the firm, when my firm has inappropriate business plans.	Noordewier, John, and Nevin (1990) H. L. Lee and Billington (1993)
	1.2 I am aware when my firm is unable to meet strategic objectives.	H. L. Lee and Billington (1993)
	1.3 I can perceive the effect of losses resulting from the firm's defective business strategies.	Steele and Court (1996) Yahya-Zadeh (1998)
	1.4 I can recognize how the firm is faced with exposure to loss from improper business planning.	MacDonald (2000)
2. Operational Risk	2.1 I can assess the potential for losses or failures linked to processes.	Salmon et al. (2017)
	2.2 I can perceive obstacles to the firm's goals caused by inadequate or failed people.	Soomro, Shah, and Ahmed (2016)
	2.3 I can discern the potential losses related to the business systems of my firm.	Zhang and Zou (2007)
	2.4 I can assess the barriers to achieving firm's goals caused by external events.	Zhang and Zou (2007)
3. Financial Risk	3.1 I am aware of the possibility of the firm defaulting on financial commitments.	Palmieri (2015)

Variables	Questions	Authors
	3.2 I can perceive financial conditions that may impair the firm's ability to achieve adequate returns.	Hartley (2016) Hove and Lillekvelland (2016)
	3.3 I can assess if the firm will be unable to acquire the cash required to meet short or intermediate term obligations.	Acharya, Schaefer, and Zhang (2015) Mian and Santos (2017)
	3.4 I can discern the inability of the firm to maintain an appropriate financial condition.	Kurtz and Jordan (2015)
4. Compliance Risk	4.1 I can perceive the potential of losses and legal penalties related to the failure to comply with laws or regulations.	May (2005) Damania, Fredriksson, and Mani (2004)
	4.2 I can assess the impact of losses when the firm fails to act in accordance with industry laws.	Sharfman and Fernando (2008)
	4.3 I can perceive if my firm may fail to remain within regulations.	Thomason and Pozzebon (2002)
	4.4 I can assess the impact of losses caused from financial forfeiture and material loss.	McWilliams and Siegel (2000)

3.2.3.2 Proactive behavior

The main information about both the independent and dependent variables, Proactive Approach, was measured by asking the respondents to indicate on the job behavior. This measure was adapted from prior studies (Ashford, 1986; Aspinwall & Taylor, 1997; Buys et al., 2017); J. Michael Crant (2000); (Dutton et al., 1997; Edelman, 2016; Fisher, 1986; Fryer & Payne, 1984; Kanter, 2000; Karimi et al., 2016; Lumpkin & Lichtenstein, 2005; V. D. Miller & Jablin, 1991; Ohly & Fritz, 2007; Seibert et al., 1999; Short et al., 2010) and consists of nine items. These items were scored on a five-point rating scale that represented work behaviors of the respondents (revealed on Table 3.2), ranging from 1 (Strongly disagree) to 5 (Strongly agree). Samples of the statements used in the items are “I always capitalize on my strengths in my work” and “I always consider how frequently I seek information from my subordinates”. This variable was utilized for all hypothesis testing as an interval scale derived from primary data.

Table 3.2 Proactive Behavior Variables, Questions, and Authors

Variables	Questions	Authors
1. Improving Opportunities Addressing	1.1 I always capitalize on my strengths in my work.	Perkins and Blythe (1994) Kaplan and Kaiser (2009)
	1.2 I understand what I want to do better to improve.	Chambers, Foulon, Handfield-Jones, Hankin, and Michaels III (1998)
	1.3 I constantly set my target to improve opportunities with promise.	Goldrick-Rab (2010)
2. Challenging the Status Quo	2.1 I always learn by asking good questions.	Maxwell (2014) Buck et al. (2017)
	2.2 I always shift my perspective in working.	Lebois et al. (2015)
	2.3 I am ready to help make changes in the organization.	Katzenbach and Smith (2015) Bank et al. (2017)
3. Forming encouraging environments	3.1 I think that my workplace should be a skeptical environment.	Bennett and Hatfield (2018)
	3.2 I think that my workplace should be a mutual-feedback environment.	Barbera (2009)
	3.3 In my workplace, individuals should be offered flexibility to alter their own working styles.	Birdi, Leach, and Magadley (2016)
4. Socialization	4.1 I always find my role in working with co-workers.	Perrot et al. (2014)
	4.2 I always adjust my work role if it could be better.	Perrot et al. (2014)

Variables	Questions	Authors
	4.3 I always freeze my role to maintain relationships, both inside and outside of the workplace.	Perrot et al. (2014)
5. Feedback Seeking	5.1 I always inquire about and monitor methods used to gain feedback.	Callister, Kramer, and Turban (1999)
	5.2 I always consider how frequently I seek information from my subordinates.	Bauer and Green (1998)
	5.3 I am always concerned about the timing of feedback seeking in my work.	Don VandeWalle and Larry L Cummings (1997)
6. Issue selling	6.1 I am always determined change patterns in workplace.	
	6.2 I can always be the initiator of change in the workplace.	
	6.3 I always bring concepts or anxieties and, explanations and chances together in methods that emphasize others' attention and invite accomplishment.	Dutton, Ashford, O'Neill, and Lawrence (2001)
7. Innovation	7.1 The workplace, it should allow employees a chance to fail in trying new things.	Harbour (1992)
	7.2 I always give my subordinates a freedom of intelligence.	Zhou and George (2003)
	7.3 I always arrange for my team to have the resources to drive innovative thinking.	Njoroge and Yazdanifard (2014)
8. Career	8.1 I continuously learn and gain new skills.	Ke, Li, and Powell (2018)

Variables	Questions	Authors
Management	8.2 I always consider emotions in working, such as satisfaction or appreciation.	Ke et al. (2018)
	8.3 I always emphasize a good quality of life and work-life balance.	Ke et al. (2018)
9. Stress Coping	9.1 I always take time to refresh myself during a hard work day.	Portello and Long (2001)
	9.2 I always learn how to relax.	Portello and Long (2001)
	9.3 I always try to use healthy responses to prepare for the next day.	Portello and Long (2001)

3.2.3.3 Firm performance in terms of financial performance and risk management concepts

The main dependent variable, firm performance in terms of financial performance and risk management concepts, was measured using the financial information included in the firms' annual over a five-year period (2013 – 2017) reports accessed from the Thomson Reuters database at NIDA library to indicate firm performance in terms of both financial performance and risk management concepts. The Thomson Reuters Eikon database is a set of software products provided by Refinitiv for financial professionals to monitor and analyze financial information. It provides a commanding view of the global, real-time financial arena, combining news, information and insight, as well as access to the global Thomson Reuters trading community (Eikon, 2018). It also contains a wide range of financial data, such as income statements, key financial ratios, and ratios related to value and risk. This measure consisted of four items including: 1) profitability performance (including ROA, ROE, ROI, ROS, and EBITDA), 2) growth performance (including Net Profit Growth Rate and Sales Growth Rate), 3) market value performance (including Price-to-Earnings Ratio, Market-to-Book Ratio, and Cash Flow per Share), and 4) risks to financial performance (including variance of profitability, variance of growth, and variance of market value).

Before putting the secondary data into the model, data screening process were performed in order to ensure that the financial data was useable, reliable, and valid for hypothesis testing as follows. First, Outlier financial data was deleted to remove the extreme values for each financial ratio. Second, the available financial ratios for each firm listed on the SET were examined to insure that at least four years of data from the last five-years was included. Finally, all financial information for each firm was matched with the questionnaire data from the respondents working for that firm. These items were calculated using the average of each ratio and, eventually, used the average of the total ratios for each concept (including profitability, growth, market value, and risk of firm performance) in the model. This variable was utilized for all hypothesis testing as a ratio scale derived from secondary data.

3.2.3.4 Control variables

In addition to the main independent variable, this study controlled for key factors that affect 1) risk perception and proactive behavior and 2) proactive behavior and firm performance in terms of both financial performance and risk management concepts. These control variables were adapted from a study by Huibregtse (2014) and consisted of gender, age, educational level, educational major, organizational unit, work experience, and salary. Age and work experience were measured in years. Gender was coded as a dummy variable (male was coded one, female was coded two). The organizational unit of a manager was coded as a dummy variable (line function unit was coded one, staff functional unit was cod zero). Education and salaries were measured as ordinal scales. Educational major was measured as a nominal scale. In addition, the researcher added the firm of respondents in this study to be the link between the primary data collected from managers and the secondary data collected from the annual reports of firms and the Thomson Reuters database.

3.2.4 Scales Validity

The original version of the questionnaire adopted by previous studies was created in the English language and edited by a native speaker. For this study, the questionnaire was translated into the Thai language (as shown in appendix A) to collect data from the SET listed firms by the researcher and, finally, back translated for use in the statistical model. Before estimating the Ordinal Least Squares (OLS) model, the researcher executed a validity check for the risk perception and proactive behavior variables, as shown in table 3.3, both of which exceed the minimum convergent validity (0.5) suggested by Var (1998). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO test) score was .981 (P=.000), indicating this questionnaire was of good quality. Then, the researcher executed a reliability analysis evaluation by evaluating the Cronbach's alpha (α) coefficient. The results showed that all of the reliability coefficients for both risk perception ($\alpha = 0.979$; 16 items) and proactive behavior ($\alpha = 0.986$; 27 items) variables exceed 0.7, as recommended by Fornell and Larcker (1981).

Table 3.3 Validity Testing Results

Questions in questionnaire	Component
Risk Perception	
1. I can assess a negative impact on the firm, when my firm has been using inappropriate business plans.	.636
2. I am aware when my firm is unable to meet strategic objectives.	.641
3. I can perceive the effects of a loss resulting caused by defects in the firm's business strategies.	.685
4. I can recognize how the firm is faced with exposure of loss caused by improper business planning.	.729
5. I can assess the potential for losses or failures linked to processes.	.740
6. I can perceive obstacle to the firm's achieving goals caused by inadequate or failed people.	.712
7. I can discern the potential of losses that are related to the business systems of my firm.	.768
8. I can assess the barriers to achieving the firm's goals caused by external events.	.793
9. I am aware of the possibility of the firm defaulting on a financial commitment.	.782
10. I can perceive financial conditions that may impair the firm's ability to achieve adequate returns.	.818
11. I can assess if my firm that will be unable to acquire the cash required meet short or intermediate term obligations.	.813
12. I can discern the inability of my firm to maintain an appropriate financial condition.	.774
13. I can perceive the potential of losses and legal penalties due to failure to comply with laws or regulations.	.718
14. I can assess the impact of losses when my firm fails to act in accordance with industry laws.	.799
15. I can perceive if my firm may fail to remain within regulations.	.804
16. I can assess the impact of losses caused by financial forfeitures and material losses.	.765
Proactive Behavior	
1. I always capitalize on my strengths in my work.	.556
2. I understand what I want to do better to improve	.549
3. I constantly set my target to improve opportunities with promise.	.695
4. I always learn by asking good questions.	.675
5. I always shift my perspective in my work.	.701

Questions in questionnaire	Component
6. I am ready to help with changes in organization.	.789
7. I think that my workplace should be a skeptical environment.	.688
8. I think that my workplace should be a mutual-feedback environment.	.761
9. In my workplace, individuals should be offered flexibility to alter their working styles.	.764
10. I always find my role in working with co-workers.	.772
11. I always adjust my work role if it could be better.	.786
12. I always control my role to maintain relationship both inside and outside of the workplace.	.740
13. I always make inquiries and monitor methods used to gain feedback.	.790
14. I always consider how frequently I seek information from my subordinates.	.767
15. I am always concerned with the timing of feedback seeking in my work.	.716
16. I can always determine changes in patterns in the workplace.	.709
17. I can always be the initiator of change in the workplace.	.714
18. I always bring concepts or anxieties, explanations and chances together in methods that emphasize others' attention and invite accomplishment.	.714
19. The workplace should allow employees a chance to fail doing new things.	.713
20. I always give my subordinates a freedom of intelligence.	.714
21. I always arrange for my team to have the resources to support innovative thinking.	.711
22. I continuously learn and gain new skills.	.649
23. I always consider emotions in my work, such as satisfaction or appreciation.	.674
24. I always emphasize a good quality of life and work-life balance.	.694
25. I always take time to refresh myself during a hard-working day.	.671
26. I always learn how to relax.	.635
27. I always try to use healthy responses to prepare for the next day.	.679

3.2.5 Estimating Technique

Ordinal Least Squares (OLS) was used to analyze the data in this study (de Souza & Junqueira, 2005). OLS regression is used to estimate the slope and intercept of a model and allows researchers to estimate the relationship between the firms' perceived risk by managers and the firms' manager's proactive behavior (hypothesis 1), the relationship between firms' manager's proactive behavior and firm performance, in terms of financial performance concepts (hypothesis 2, 2_a, 2_b, and 2_c),

and the relationship between firms' managers' proactive behavior and firm performance in terms of risk management concepts (hypothesis 3, 3_a, 3_b, and 3_c).

In addition, OLS regression allows researcher to estimate the moderating effect of the type of firm on the relationship between firms' perceived risk by managers and the firms' managers' proactive behavior (hypothesis 4), on the relationship between firms' manager's proactive behavior and firm performance in terms of financial performance concepts (hypothesis 5_a), and on the relationship between firms' manager's proactive behavior and firm performance in terms of risk management concepts (hypothesis 5_b). Additionally, it allows researchers to estimate the moderating effect of the type of organizational units on the relationship between the main effects including 1) firms' perceived risk by managers and firms' manager's proactive behavior (hypothesis 6_a), 2) firms' manager's proactive behavior and firm performance in terms of financial performance concepts (hypothesis 6_b), and 3) firms' manager's proactive behavior and firm performance in terms of risk management concepts (hypothesis 6_c). These analyses were performed using IBM SPSS Statistics version 19 in this study.

CHAPTER 4

RESULTS OF THE STUDY

The findings from this study were analyzed using quantitative methods to determine the validity of the hypotheses that were the foundation for the research questions that the researcher sought to answer. For convenience of discussion and analysis, the results have been places in the following three groups and will be addressed in the following order:

4.1 Characteristics of the respondents

4.2 Data analysis and results of the study

4.3 Summary

4.1 Characteristics of the Respondents

The primary data provides details of the demographic characteristics of the respondents, their risk perception, and their related proactive behaviors. The secondary data contains details on the characteristics of the respondents firms, including the position of firms as indicated by using the average ROA of each industry, having an established risk management department in their organizational structure, and their average financial information. The descriptive results are presented with regard to the respondents and their respective firms.

4.1.1 Description of the Respondents

The individual descriptive results were divided into three main parts related to 1) the demographic characteristics of managers who work for firms listed on the SET, 2) the extent of the manager's risk perception, and 3) the extent of the proactive behavior of manager, which were collected using questionnaires (Appendix A). All of the data was collected data from respondents who are managers at firms listed on the SET who had completely filled the questionnaires. Then, the data was analyzed using

statistical techniques to examine the occurrences of the variables in the models including frequency, descriptive statistics, correlation, and multiple linear regression. Therefore, the description and discussion of the results are as follows.

4.1.1.1 Demographic characteristics of the Participants

Demographic characteristics of the 488 participants) were recorded using seven variables: 1) gender, 2) age, 3) education level, 4) faculty or major of study, 5) organizational unit, 6) work experience with current firm, and 7) monthly salary. The results show characteristics of the respondents in detail and are presented as frequency and percentage in table 4.1.

Of the 488 respondents, 292 (59.8%) were male and 196 (40.2%) were female. The largest group of respondents, representing 37.5 % of the total, were aged between 35 and 44 years. This was followed, in descending order, by the groups for 45 to 54 years old (34.8%), 55 to 64 years old (16.2%), and 25 to 34 years old (10.9%). The remaining group, with the least number of respondents, was 65 years of age or older (0.6%). Two-hundred and seventy-six respondents (56.6%) held master's degree level education, 209 (42.8%) held a bachelor degree, and only 3 (0.6%) respondents had a doctoral degree. In terms of the majors/faculties of the respondents, the two largest groups were composed of 96 (19.7%) participants who graduated with a degree in management and 69 (14.1%) who graduated with a degree in science and technology. The third largest group included 59 respondents (12.1%) who graduated with an engineering degree. The remaining respondents has degrees from the following faculties/majors (in descending order): human resources (11.3%), distribution and logistics (9.2%), marketing (8.0%), finance (7.2%), computing and IT (6.1%), risk management and insurance (3.9%), sales (3.5%), research and analysis (2.9%), and other faculties/majors accounting for the smallest number of respondents (2.0%). 53.9% of the respondents worked in line function units and 46.1% worked in staff function units. Additionally, the average of the work experience with current firm of all respondents was 11 years. Regarding their monthly salary, 232 (47.5%) of the respondents had a monthly salary of 45,001 – 60,000 baht, 196 (40.2%) had a monthly salary of more than 60,000 baht, 56 (11.5%) had a salary of 30,001 – 45,000 baht per month, and only 4 (0.8%) of the respondents had a monthly salary of 15,001 – 30,000 baht.

Table 4.1 Frequency and Percentage of Managers' Demographic Characteristics

Demographic characteristics	Frequency	Percentage
Gender		
Male	292	59.8
Female	196	40.2
Age		
25 – 34 years old	53	10.9
35 – 44 years old	183	37.5
45 – 54 years old	170	34.8
55 – 64 years old	79	16.2
65 years or older	3	0.6
Educational level		
Bachelor's degree	209	42.8
Master's degree	276	56.6
Doctoral degree	3	0.6
Faculty or major of study		
Finance	35	7.2
Risk Management and Insurance	19	3.9
Human Resources	55	11.3
Marketing	39	8.0
Engineering	59	12.1
Science & Technology	69	14.1
Computing & IT	30	6.1
Sales	17	3.5
Management	96	19.7
Research & Analysis	14	2.9
Distribution & Logistics	45	9.2
Others	10	2.0
Organizational unit		
Staff function unit	225	46.1
Line function unit	263	53.9
Monthly salary		
15,001 – 30,000 Baht	4	0.8
30,001 – 45,000 Baht	56	11.5
45,001 – 60,000 Baht	232	47.5
More than 60,000 Baht	196	40.2
Total	**488**	**100.0**

4.1.1.2 Manager's risk perception

To determine the managers' level of risk perception, risk was divided into four categories, specifically: strategic risk, operational risk, financial risk, and compliance risk. Risk perception of managers was measured using their responses to questionnaire items using a 5-point rating scale.

The risk perception of the 488 managers were then described as the average for each type of risk listed above as shown in table 4.2. The highest average level of risk perception was related to compliance risk (Mean=3.90; SD=1.035). The remaining three types, in descending average, were operational risk (Mean=3.89; SD=1.057), financial risk (Mean=3.81; SD=1.081), and strategic risk (Mean=3.77; SD=1.042).

Table 4.2 Average and Standard Deviation of Manager's Risk Perception

Types of Risk	**Mean**	**S.D.**
Strategic Risk	3.77	1.042
Operational Risk	3.89	1.057
Financial Risk	3.81	1.081
Compliance Risk	3.90	1.035

4.1.1.3 Manager's proactive behaviors

The extent of the managers' proactive behaviors was separated into nine categories, including identifying opportunities, challenging the status quo, forming encouraging environments, socialization, feedback seeking, issue selling, individual innovation, proactive career behavior, and proactive coping with stress.

The proactive behaviors the managers engaged in were described as an average for each attribute as shown in table 4.3. The two attributes with the highest average were proactive career behavior (Mean=3.97; SD=.883) and proactive coping with stress (Mean=3.90; SD=.951). The averages for the remaining seven attributes, in descending order, were identifying opportunities (Mean=3.88; SD=.870), issue selling (Mean=3.85; SD=.901), challenging the status quo (Mean=3.82; SD=.900), socialization (Mean=3.80; SD=.844), forming encouraging environments

(Mean=3.78; SD=.870), individual innovation (Mean=3.77; SD=.920), and feedback seeking (Mean=3.76; SD=.868).

Table 4.3 Average and Standard Deviation of Manager's Proactive Behaviors

Proactive Behavior Attributes	Mean	S.D.
Identifying Opportunities	3.88	0.870
Challenging the Status Quo	3.82	0.900
Forming Encouraging Environments	3.78	0.870
Socialization	3.80	0.844
Feedback Seeking	3.76	0.868
Issue Selling	3.85	0.901
Individual Innovation	3.77	0.920
Proactive Career Behavior	3.97	0.833
Proactive Coping with Stress	3.90	0.951

4.1.2 Organizational Description

The results related to the organizational descriptions were divided into two categories: 1) characteristics of respondent's firm and 2) an average of the firm's financial information, which were collected using the Thomson Reuters database and the firms' annual reports for the 2013 – 2017 time period as shown in table 4.4.

4.1.2.1 Characteristics of the participants' firms

The characteristic of the firms of the study participants were described using two variables: 1) the position of firms as indicated using the average ROA of each industry to separate them into below average target firms and above average target firms, and 2) whether or not the firm has a formal risk management department (FRMD) in its organizational structure.

Based on these criteria, 51% (249) of the respondents worked at above average target firms and 49.0% (239) worked at below average target firms. It was also determined that 55.9% (273) of the respondents worked at without a formal risk management department, while only 44.1% (215) respondents worked at firms with a formal risk management department.

4.1.2.2 Firm's financial information

Financial information related to the financial ratios of the 231 SET listed firms represented in this study was separated into three categories, including profitability, growth, and market value. These ratios are described as an average for each category. The financial ratio with the highest average was growth (Mean=45.36%; SD=.643), followed by market value (Mean=36.14%; SD=.392) and profitability (Mean=17.78%; SD=.242), in descending order. The greatest average percentage for risk, in terms of related variations in financial data, was for growth 110.72% (SD=2.135), followed by market value (Mean=28.48%; SD=.456) and profitability (Mean=2.14%; SD=.125). Overall, the average percentage of financial concepts was 33.13%, whereas the average percentage of risk concepts was 47.11%.

According to these criteria, in respect to types of firm, the group of firms positioned below average target had lower financial performance in terms of profitability, growth, and market value than those which were positioned above average target, as indicated using the average ROA for each industry. Similarly, in terms of risk management performance, the group of firms positioned below average target had more risk to financial performance in terms of growth and market value than those which were positioned above average target. Additionally, the group of firms having a formal risk management department had better financial performance in terms of profitability and market value than those lacking a formal risk management department in their organizational structure. Consequently, in terms of risk management performance, the group of firms having a formal risk management department faced less risk to all financial performance indicators than those lacking a formal risk management department in their organizational structure.

Table 4.4 Percentage of Financial Information Classified by Types of Firm

Financial Information	Type of Firm (1)		Type of Firm (2)	
	Below	Above	No FRMD	Have FRMD
Financial Performance Concept				
Profitability	16.76%	18.94%	13.65%	23.23%
Growth	43.00%	47.62%	45.57%	45.09%
Market Value	35.86%	36.42%	30.40%	43.44%
Risk Management Concept				
Variance of Profitability	1.54%	2.71%	2.20%	2.06%
Variance of Growth	130.10%	92.12%	132.40%	93.64%
Variance of Market Value	30.49%	26.56%	31.12%	25.13%

Type of Firm (1): the position of firms as indicated using the average ROA of each industry
Type of Firm (2): whether or not the firm has a formal risk management department (FRMD) in its organizational structure

4.2 Data Analysis and Results of the Study

With an aim of better understanding how to enhance a firm's performance using financial performance, risk concepts, staff behavior, and encouraging firms' knowledge of holistic risk management strategies, the following four main research questions were developed for this study. 1) What is the effect of risk perception on proactive behavior? 2) What is the effect of proactive behavior on firm performance? 3) How do the type of firm and organizational unit moderate the effect of risk perception on proactive behavior? And, lastly, 4) how do the type of firm and organizational unit moderate the effect of proactive behavior on firm performance? The results are described as statistical results derived from analysis using correlation testing and ordinary least square regressions.

4.2.1 The Relationship between Risk Perception and Proactive Behavior

To determine how risk perception affects proactive behavior, the relationship between risk perception and proactive behavior was investigated as hypothesis 1. Statistical correlation results related to the relationship between risk perception and proactive behavior were comprised of one dependent variable (proactive behavior),

one independent variable (risk perception), and eight control variables (gender, age, educational level, faculty or major of study, organizational unit, work experience with current firm, monthly salary, and types of firm) as shown in table 4.5. The results found statistically significant correlations between the dependent variable, proactive behavior, and risk perception, age, educational level, faculty or major of study, organizational unit, work experience with current firm, and monthly salary. In terms of the independent variable, risk perception was significantly related to age, educational level, faculty or major of study, work experience with current firm, and monthly salary.

Table 4.5 Statistical Correlation Results: Relationship between Risk Perception and Proactive Behavior

(n = 488)

Variables	RP	GEN	AGE	EL	FMS	OU	WEC	MS	TF1
1. PB	**.900****	-.057	**.243****	**.384****	**-.161****	**.092***	**.165****	**.380****	-.039
2. RP	-	-.016	**.202****	**.358****	**-.160****	.049	**.134****	**.339****	-.057
3. GEN	-	-	.023	**.105***	-.074	**-.190****	.076	.000	-.067
4. AGE	-	-	-	**.290****	**.158****	**.281****	**.546****	**.551****	-.064
5. EL	-	-	-	-	-.085	**.098***	**.164****	**.427****	-.058
6. FMS	-	-	-	-	-	**.374****	**.162****	-.054	.021
7. OU	-	-	-	-	-	-	**.179****	.077	.051
8. WEC	-	-	-	-	-	-	-	**.553****	-.002
9. MS	-	-	-	-	-	-	-	-	**-.105***

PB: proactive behavior; RP: risk perception; GEN: gender dummy variable (male was coded 1); AGE: age; EL: educational level; FMS: faculty or major of study; OU: organizational unit dummy variable (line function unit was coded 1); WEC: work experience with current firm; MS: monthly salary; TF1: types of firm dummy variable (below average target firm was coded 1)

***0.1% significance level; **1% significance level; *5% significance level

The researcher analyzed the relationship between the independent variable (risk perception) and dependent variable (proactive behavior) using a regression model. Results from the ordinary least squares (OLS) regression analysis are presented in table 4.6. Hypothesis 1 predicted a positive relationship between a firms' managers' perceived risk and their proactive behaviors. The result from OLS analysis

confirms a positive and strong association between them (β = .706, p = .000). This refers to the positive beta coefficient where every one unit increase in risk perception is associated with an increase in proactive behavior of 0.706 units. Thus, hypothesis 1 is statistically supported. According to this result, in firms with higher levels of perceived risk, more managers engage in proactive behavior because managers tend to take proactive actions when they perceive there are potential negative effects to their firms' operations posed by a perceived risk. In addition, the control variable for gender was negatively associated and the control variable for educational level was positively associated with proactive behavior (β = -.074; p = .030, β = .077; p = .036 respectively), and are statistically supported. This means that males had more influence on the level of proactive behavior than females. Whereas, managers with higher levels of education had more influence on the amount proactive behavior than those with lower levels of education. In this model, R-square score was 0.823, indicating that 82.3% of the data fit this regression model.

To check for possible multicollinearity among the variables of this model, the Variance Inflation Factor (VIF) was evaluated. The VIF values ranged from 1.025 to 2.072, which are significantly below the critical thresholds suggested by Mela and Kopalle (2002). Thus, this model is no serious multicollinearity problem.

Table 4.6 Regression Results: Effect of Risk Perception on Proactive Behavior

(n = 488)

(Hypothesis 1)	**Dependent Variable:Proactive Behavior**			
Independent Variables:	**ß**	**P-Value**	**Std. Error**	**VIF**
Constant	**.698*** **	.000	.141	
Risk Perception	**.706*** **	.000	.018	1.239
Gender (Male=1, Female=2)	**-.074***	.030	.034	1.087
Age	.021	.368	.023	1.777
Educational Level	**.077***	.036	.037	1.367
Faculty or major of study	-.011	.060	.006	1.260
Organizational Unit (Line =1)	.068	.064	.037	1.310
Work experience with current firm	.000	.897	.003	1.747
Monthly Salary	.064	.055	.033	2.072
Type of firm (Below Average=1)	.025	.436	.032	1.025
R-Square	**.823**			
Adjusted R-Square	**.820**			

***0.1% significance level; **1% significance level;*5% significance level

4.2.2 The Moderating Roles of Types of Firm and Organizational Units of Manager on the Relationship between Risk Perception and Proactive Behavior

To investigate the moderating roles of the type of firm and the organizational unit of the manager, interactions between risk perception and proactive behavior were tested using the following approach. Firstly, whether a significant association between risk perception and proactive behavior had to be determined. Secondly, the risk perception variable was transformed into a standardized variable that is interpreted as the standard deviation change in the dependent variable when the independent variable is changed by one standard deviation, with all other variables remaining constant (Bring, 1994). Instead of comparing changes a single unit of measurement, the comparison is made between changes of one standard deviation. This makes it easier to read the results from the regression analysis and ensures that all variables contribute to the scale when added together. Next, the moderating variables, including whether the firm was a below or above average target firm and whether the manager worked in a line function or staff function unit, were multiplied by the standardized

risk perception variable and inputted into the model. Finally, an OLS regression model was used to investigate any moderating effects of the moderating variables on the relationship between risk perception and proactive behavior.

After confirming a positive relationship between risk perception and proactive behavior, the researcher proceeded to analyze the moderating effects on this relationship using a regression model. The results from the OLS regression analysis are presented in table 4.7. Hypothesis 6_a predicted that the organizational unit of a manager moderates a positive relationship between risk perception and proactive behavior. The result confirms a positively and strongly significant effect on the interaction ($\beta = .182$, $p = .000$) showing a positive association between risk perception and proactive behavior ($\beta = .601$, $p = .000$). This refers to a positive beta coefficient (standardized risk perception variable x organizational unit variable) where, for every one unit increase in the interaction, the positive relationship between risk perception and proactive behavior will increase by 0.182 units. The results reveal that there is a more positive relationship (positive moderation) between risk perception and proactive behavior for managers who work in a line function unit than in those who work in a support function unit. Thus, hypothesis 6_a is statistically supported.

In addition, the control variables of gender, educational level, faculty or major of study, and organizational unit were also significantly associated with proactive behavior as follows: gender had a negative association with proactive behavior ($\beta = -.074$, $p = .038$) showing that males had more influence on proactive behavior than females; educational level had a positive association with proactive behavior ($\beta = .090$, $p = .012$) indicating that a higher level of education had more influence on proactive behavior than lower levels of education; faculty, or major of study, had a negative association with proactive behavior ($\beta = -.015$, $p = .009$), however, we were unable to summarize what dimensions of the major of study had the most influence on proactive behavior because of the nominal type of scale; and the organizational unit of the manager had a positive association with proactive behavior ($\beta = .079$, $p = .026$) revealing that managers who work in a line function unit had more influence on proactive behavior than those who work in a support function unit. In this model, the R-square score was 0.834 that increased by 0.011 from the main relationship model (hypothesis 1), meaning that 83.4% of the data fit this regression model.

To check for the possible multicollinearity among the variables of this model (hypothesis 6_a model), the Variance Inflation Factor (VIF) was evaluated. The researcher transformed the risk perception variable into a standardized variable before multiplying it with an organizational unit dummy variable that coded a line function unit as 1 and a staff function unit as 0. The VIF values of this model ranged from 1.032 to 2.641, which were significantly below the critical thresholds suggested by Mela and Kopalle (2002) that mentioned the highest acceptable VIF value should be 10. Thus, this model is no serious multicollinearity problem.

Table 4.7 Regression Results: Effect of Organizational Unit on Risk Perception and Proactive Behavior

(n = 488)

(Hypothesis 6_a)	**Dependent Variable:Proactive Behavior**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**.698*** **	**1.089*** **	.000	.152	
Risk Perception	**.706*** **	**.601*** **	.000	.025	2.641
Gender (Male=1, Female=2)	**-.074***	**-.068***	.038	.033	1.087
Age	.021	.023	.308	.023	1.777
Educational Level	**.077***	**.090***	.012	.036	1.372
Faculty or major of study	-.011	**-.015** **	.009	.006	1.279
Organizational Unit (Line=1)	.068	**.079***	.026	.035	1.314
Work experience with current firm	.000	.000	.909	.003	1.750
Monthly Salary	.064	.059	.067	.032	2.073
Type of firm (Below Average=1)	.025	.040	.204	.031	1.032
Risk Perception (Z) x OU(Line)	-	**.182*** **	.000	.032	2.366
R-Square	**.823**	**.834**			
Adjusted R-Square	**.820**	**.831**			

Risk Perception (Z) was standardized and OU refers to Organizational Unit

***0.1% significance level; **1% significance level;*5% significance level

Hypothesis 4 predicted that the type of firm moderates a positive relationship between risk perception and proactive behavior. The result from the OLS analysis, as shown in table 4.8, revealed a positive and strongly significant effect of the interaction (β = .162, p = .000) with a positive association between risk perception and proactive behavior (β = .623, p = .000) being statistically supported. This refers to a positive beta coefficient (standardized risk perception variable x type of firm variable) where for every one unit increase in the interaction, the positive relationship between risk perception and proactive behavior will also increase by 0.162 unit. This means that this positive relationship is stronger among managers who work at below average target firms than those who work at above average target firms. Thus, hypothesis 4 is statistically supported. In addition, the control variables of gender, educational level, faculty or major of study, organizational unit, and monthly salary were significantly associated with proactive behavior as follows: gender had a negative association with proactive behavior (β = -.070, p = .034) indicating that males had more influence on proactive behavior than females; educational level had a positive association with proactive behavior (β = .079, p = .028) indicating that a higher level of education had more influence on proactive behavior than lower levels of education; faculty or major of study had a negative association with proactive behavior (β = -.013, p = .028) that was unable to summarized with regard to what dimensions of the major of study had the most influence on proactive behavior because of nominal type of scale; the organizational unit of a manager had a positive association with proactive behavior (β = .087, p = .015) revealing that managers who work in a line function unit had more influence on proactive behavior than those who work in a support function unit; and the monthly salary of the manager had a positive association with proactive behavior (β = .066, p = .041) showing that managers with higher monthly salaries had more influence on proactive behavior than those with lower monthly salaries. In this model, R-square score was 0.832 that increased by 0.009 from the main relationship model (hypothesis 1) meaning that 83.2% of the data fit this regression model.

To check for possible multicollinearity among the variables in this model (hypothesis 4 model), the Variance Inflation Factor (VIF) was evaluated. The researcher transformed the risk perception variable into a standardized variable before

multiplying with a type of firm dummy variable that coded below average target firms as 1 and above average target firms as 0. The VIF values of this model ranged from 1.025 to 2.296. Thus, this model has no serious multicollinearity problem.

Table 4.8 Regression Results: Effect of Type of Firm on Risk Perception and Proactive Behavior

(n = 488)

(Hypothesis 4)	**Dependent Variable:Proactive Behavior**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**.698*** **	**.500*** **	.001	.150	
Risk Perception	**.706*** **	**.785*** **	.000	.024	2.296
Gender (Male=1, Female=2)	**-.074***	**-.070***	.034	.033	1.087
Age	.021	.019	.403	.023	1.777
Educational Level	**.077***	**.079***	.028	.036	1.367
Faculty or major of study	-.011	**-.013***	.028	.006	1.263
Organizational Unit (Line=1)	.068	**.087***	.015	.036	1.324
Work experience with current firm	.000	.000	.965	.003	1.748
Monthly Salary	.064	**.066***	.041	.032	2.072
Type of firm (Below Average=1)	.025	.025	.431	.031	1.025
Risk Perception (Z) x TF(Below)	**-**	**.162*** **	.000	.031	2.033
R-Square	**.823**	**.832**			
Adjusted R-Square	**.820**	**.829**			

Risk Perception (Z) was standardized and TF refers to Type of firm

***0.1% significance level; **1% significance level;*5% significance level

4.2.3 The Relationship between Proactive Behavior and Firms' Financial and Risk Management Performance

One of the key research question related to investigating the relationship between a firms' manager's proactive behavior and the firms' financial (in terms of profitability, growth, and market value) and risk management (based on the variation in financial performance) was what the effect of proactive behavior on firm performance is in terms of financial and risk management performance. These firm

performance variables were separated into two main categories: firm performance in terms of financial performance concepts and firm performance in terms of risk management performance concepts. They were described as statistical results based on the analysis of correlation testing and ordinary least square regression results.

4.2.3.1 The Relationship between Proactive Behavior and a Firms' Financial Performance

Statistical correlation results related to the relationship between proactive behavior and firm financial performance (in terms of profitability, growth, and market value) were comprised of a dependent variable (firm performance in terms of financial concepts), an independent variable (proactive behavior), and eight control variables (gender, age, educational level, faculty or major of study, organizational unit, work experience with current firm, monthly salary, and type of firm) as shown in Table 4.9. The results found a statistically significant correlation between firm financial performance, profitability, and growth related to proactive behavior, age, educational level, work experience with current firm, monthly salary, and the type of firm with regard to whether or not the firm had a formal risk management department in its organizational structure. Whereas, market value significantly related to proactive behavior, age, educational level, organizational unit, work experience with current firm, monthly salary, and the type of firm with regard to whether or not the firm. In terms of the control variables, proactive behavior was significantly related to age, educational level, faculty or major of study, organizational unit, work experience with current firm, and monthly salary.

In terms of hypothesis testing, the dependent variable (firm financial performance) was divided into three categories used as sub-hypotheses, specifically profitability, growth, and market value. These dependent sub-variables were then used investigate the associations with the independent variable, the proactive behavior of managers. Thus, hypothesis 2 was broken into three sub-hypotheses, namely hypothesis 2_a, hypothesis 2_b, and hypothesis 2_c.

Table 4.9 Statistical Correlation Results: Relationship between Proactive Behavior and Firm Performance in terms of Financial Performance

(n = 488)

Variables	PRO	GW	MV	PB	GEN	AGE	EL	FMS	OU	WEC	MS	TF2
1. FPFC	**.684****	**.878****	**.760****	**.542****	-.009	**.187****	**.254****	-.040	.039	**.167****	**.217****	**.107***
2. PRO	-	**.406****	**.510****	**.403****	-.048	**.158****	**.241****	-.049	-.079	**.110***	**.191****	**.197****
3. GW	-	-	**.413****	**.566****	.044	**.149****	**.238****	-.077	.040	**.145****	**.209****	-.004
4. MV	-	-	-	**.245****	-.065	**.148****	**.127****	.051	**-.118****	**.131****	**.109***	**.165****
5. PB	-	-	-	-	-.057	**.243****	**.384****	**-.161****	**.092***	**.165****	**.380****	.026
6. GEN	-	-	-	-	-	.023	**.105***	-.074	**-.190****	.076	.000	.005
7. AGE	-	-	-	-	-	-	**.290****	**.158****	**.281****	**.546****	**.551****	**.195****
8. EL	-	-	-	-	-	-	-	-.085	**.098***	**.164****	**.427****	**.096***
9. FMS	-	-	-	-	-	-	-	-	**.374****	**.162****	-.054	.021
10. OU	-	-	-	-	-	-	-	-	-	**.179****	.077	-.073
11. WEC	-	-	-	-	-	-	-	-	-	-	**.553****	**.160****
12. MS	-	-	-	-	-	-	-	-	-	-	-	**.149****

FPFC: firm performance in terms of financial performance concepts; PRO: profitability; GW: growth; MV: market value; PB: proactive behavior; GEN: gender dummy variable (male was coded 1); AGE: age; EL: educational level; FMS: faculty or major of study; OU: organizational unit dummy variable (frontline manager was coded 1); WEC: work experience with current firm; MS: monthly salary; TF2: type of firm dummy variable (had a formal risk management department in firm (YES) was coded 1)
***0.1% significance level; **1% significance level;*5% significance level

To test hypothesis 2, the researcher analyzed the main relationship between the independent variable (proactive behavior) and the dependent variable (firm performance in terms of financial performance concepts). Results from the OLS regression analysis are presented in table 4.10. Hypothesis 2 predicted a positive relationship between the proactive behaviors of manager and firm performance in terms of financial performance. The result from the OLS analysis confirmed a positive association between proactive behavior and firm financial performance (β = .223, p = .000). This refers to a positive beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of financial performance will increase by 0.223 units. Thus, hypothesis 2 is statistically supported. According to this result, managers engaging in more proactive behavior leads to better firm performance in terms of financial performance concepts. Additionally, none of control variables was significantly associated with firm performance in terms of

financial performance. The R-square score for this model was 0.314 indicating that 31.4% of the data fit this regression model.

To check for problem related to multicollinearity among the variables, the Variance Inflation Factor (VIF) was evaluated. The VIF values ranges between 1.072 and 2.069, which are all well below the critical threshold. Thus, this model is no serious issues with multicollinearity.

Table 4.10 Regression Results: Effect of Proactive Behavior on Firm Performance in terms of Financial Performance Concepts

(n = 488)

(Hypothesis 2)	**Dependent Variable: FPFC**			
Independent Variables:	**ß**	**P-Value**	**Std. Error**	**VIF**
Constant	**-.578*** **	.000	.114	
Proactive Behavior	**.223*** **	.000	.018	1.314
Gender (Male=1, Female=2)	.002	.936	.028	1.090
Age	.010	.607	.019	1.810
Educational Level	.041	.175	.030	1.383
Faculty or major of study	.005	.302	.005	1.270
Organizational Unit (Line=1)	-.030	.319	.030	1.342
Work experience with current firm	.004	.082	.002	1.743
Monthly Salary	-.041	.134	.027	2.069
Type of firm (Had RMD=1)	.052	.053	.027	1.072
R-Square	**.314**			
Adjusted R-Square	**.301**			

FPFC: firm performance in terms of financial performance concepts

***0.1% significance level; **1% significance level;*5% significance level

Hypotheses 2_a, 2_b, and 2_c were investigated by using an OLS regression model as shown in table 4.11. Hypothesis 2_a predicted a positive relationship between the proactive behavior of a manager and firm performance in terms of profitability. The result of the OLS analysis confirms a positive and strong association between them (β = .106, p = .000). This refers to a positive beta coefficient where, for every one unit increase in proactive behavior, the firm's

performance in terms of profitability will increase by 0.106 units. This means that, the more managers' engage in proactive behavior, it lead to better firm profitability performance. Thus, hypothesis 2_a is statistically supported. Additionally, the control variable for type of firm was significantly associated with firm performance in terms of profitability, which shows that firm having a formal risk management department had a more positive influence on profitability performance compared to those without a risk management department in its organizational structure. The $H2_a$ model R-square score was 0.207, signifying that 20.7% of the data fit this regression model.

Hypothesis 2_b predicted a positive relationship between the proactive behaviors of managers and firm performance in terms of growth. The result of the OLS analysis confirms a positive and strong association between them ($\beta = .451$, $p = .000$). This refers to a positive beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of growth will increase by 0.451 units. This means that the more managers engage in proactive behavior, it will lead to better firm growth performance. Thus, hypothesis 2_b is statistically supported. Additionally, the control variable for the organizational unit of the manager was significantly associated with firm performance in terms of growth. This revealed that managers who work in support function units had more influence on firm growth performance than those working in line function units. The R-square score for the $H2_b$ model was 0.343, this means that 34.3% of the data fit this regression model. Finally, hypothesis 2_c predicted a positive relationship between the proactive behaviors of manager and firm performance in terms of market value. The result of the OLS analysis confirmed that there was a strong and positive association between these two factor ($\beta = .111$, $p = .000$). This refers to a positive beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of market value will increase by 0.111 units. This means that the more managers practice proactive behavior, it will lead to better firm market value performance. Thus, hypothesis 2_c is statistically supported. Additionally, the control variable for the type of firm was also significantly associated with firm performance in terms of market value indicating that firms having a formal risk management department had a more positive influence on profitability performance in comparison to those without risk

management department in its organizational structure. The $H2_c$ model's R-square score was 0.106, meaning that 10.6% of the data fit this regression model.

To check for multicollinearity among variables in these models, the VIF was calculates and the values ranged from 1.072 to 2.069. These values are significantly below the critical thresholds, thus, there are no issues with multicollinearity.

Table 4.11 Regression Results: Effect of Proactive Behavior on Firm Performance in terms of Profitability, Growth, and Market Value

(n = 488)

(Hypothesis 2_a, 2_b, 2_c)	**Dependent Variable: (ß)**		
Independent Variables:	**Profitability**	**Growth**	**Market Value**
Constant	**-.330*** **	**-1.308*** **	-.097
Proactive Behavior	**.106*** **	**.451*** **	**.111*** **
Gender (Male=1, Female=2)	-.015	.060	-.038
Age	.001	.016	.013
Educational Level	.043	.051	.029
Faculty or major of study	-.001	.011	.005
Organizational Unit (Line=1)	.023	**-.164** **	.051
Work experience with current firm	.001	.008	.004
Monthly Salary	-.010	-.067	-.045
Type of firm (Had RMD=1)	**.089*** **	-.053	**.121** **
R-Square	**.207**	**.343**	**.106**
Adjusted R-Square	**.192**	**.330**	**.089**

***0.1% significance level; **1% significance level;*5% significance level

4.2.3.2 The Relationship between Proactive Behavior and a Firms' Performance in terms of Risk Management Concepts

Statistical correlation results related to the relationship between proactive behavior and a firm's performance in terms of risk management concepts (variation of profitability, variation of growth, and variation of market value) were comprised of a dependent variable (firm performance in terms of risk management concepts), an independent variable (proactive behavior), and eight control variables

(gender, age, educational level, faculty or major of study, organizational unit, work experience with current firm, monthly salary, and types of firm) as shown in table 4.12. The results found a statistically significant correlation between firm performance in terms of risk management concepts related to variation of profitability, variation of growth, variation of market value, proactive behavior, age, educational level, work experience with the current firm, and monthly salary. The variation in profitability was significantly related to proactive behavior, educational level, and faculty or major of study. The variation in growth was significantly related to proactive behavior, age, educational level, faculty or major of study, monthly salary, and the type of firm with regard to whether or not the firm had a formal risk management department in its organizational structure. Whereas, the variation in market value was significantly related to proactive behavior, age, educational level, and monthly salary. In terms of the control variables, proactive behavior was significantly related to age, educational level, faculty or major of study, organizational unit, work experience with the current firm, and monthly salary.

In terms of hypothesis testing, the dependent variable (firm performance in terms of risk management concepts) was divided into three categories used as sub-hypotheses, specifically profitability risks, growth risks, and market value risks to firm financial performance. These dependent sub-variables were then used investigate the associations with the independent variable, the proactive behavior of managers. Thus, hypothesis 3 was broken into three sub-hypotheses, namely hypothesis 3_a, hypothesis 3_b, and hypothesis 3_c.

Table 4.12 Statistical Correlation Results: The Relationship between Proactive Behavior and Firm Performance in terms of Risk Management Concepts

(n = 488)

Variables	VP	VG	VM	PB	GEN	AGE	EL	FMS	OU	WEC	MS	TF2
1. FPRC	**.138****	**.975****	**.142****	**-.423****	-.007	**-.126****	**-.189****	**.132****	-.028	**-.097***	**-.207****	-.075
2. VP	-	.074	.036	**-.213****	.049	.049	**-.095***	**.092***	-.063	.020	-.059	.006
3. VG	-	-	-.071	**-.380****	-.016	**-.108***	**-.161****	**.119****	.020	-.087	**-.177****	**-.090***
4. VM	-	-	-	**-.168****	.029	**-.102***	**-.117****	.041	.057	-.059	**-.136****	.065
5. PB	-	-	-	-	-.057	**.243****	**.384****	**-.161****	**.092***	**.165****	**.380****	.026
6. GEN	-	-	-	-	-	.023	**.105***	-.074	**-.190****	.076	.000	.005
7. AGE	-	-	-	-	-	-	**.290****	**.158****	**.281****	**.546****	**.551****	**.195****
8. EL	-	-	-	-	-	-	-	-.085	**.098***	**.164****	**.427****	**.096***
9. FMS	-	-	-	-	-	-	-	-	**.374****	**.162****	-.054	.021
10. OU	-	-	-	-	-	-	-	-	-	**.179****	.077	-.073
11. WEC	-	-	-	-	-	-	-	-	-	-	**.553****	**.160****
12. MS	-	-	-	-	-	-	-	-	-	-	-	**.149****

FPRC: firm performance in terms of risk management concepts; VP: variation of profitability; VG: variation of growth; VM: variation of market value; PB: proactive behavior; GEN: gender dummy variable (male was coded 1); AGE: age; EL: educational level; FMS: faculty or major of study; OU: organizational unit dummy variable (line function was coded 1); WEC: work experience with current firm; MS: monthly salary; TF2: type of firm dummy variable (has a formal risk management department firm (Have) was coded 1)

***0.1% significance level; **1% significance level;*5% significance level

In terms of hypothesis testing, hypothesis 3 predicted an inverse relationship between proactive behavior and a firm's performance in terms of risk management concepts, where a negative association indicates reduced (improved) risk to financial performance, e.g. more proactive behavior results in less risk. The OLS analysis results, shown in Table 4.13 confirmed a strong inverse association between proactive behavior and risk management performance (β = -.335, p = .000). This refers to a negative beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of risk management performance will decrease by 0.335 units. Thus, hypothesis 3 is statistically supported. According to

this result, greater amount of proactive behavior by managers leads to improving the firm's performance in terms of lowering risk. Additionally, the type of firm control variable was significantly associated with firm performance in terms of risk management (β = -.144, p = .020) which tells us that firms no having a formal risk management department had a more negative influence on firm performance in terms of risk management performance when compared with those having a formal risk management department in their organizational structure. The R-square score for hypothesis 3 was 0.196, therefore, 19.6% of the data fit this regression model.

To check for multicollinearity in this model, the VIF values were calculated and ranged between 1.072 and 2.069. These values are significantly below the critical threshold indicating there is no significant multicollinearity present.

Table 4.13 Regression Results: Effects of Proactive Behavior on Firm Performance in terms of Risk Management Concepts

(n = 488)

(Hypothesis 3)	**Dependent Variable: FPRC**			
Independent Variables:	**ß**	**P-Value**	**Std. Error**	**VIF**
Constant	**1.958*** **	.000	.259	
Proactive Behavior	**-.335*** **	.000	.041	1.314
Gender (Male=1, Female=2)	-.031	.627	.063	1.090
Age	-.018	.674	.044	1.810
Educational Level	-.021	.757	.069	1.383
Faculty or major of study	.017	.130	.011	1.270
Organizational Unit (Line=1)	-.001	.986	.069	1.342
Work experience with current firm	-.002	.684	.005	1.743
Monthly Salary	-.042	.497	.062	2.069
Type of firm (Had RMD=1)	**-.144***	.020	.062	1.072
R-Square	**.196**			
Adjusted R-Square	**.181**			

FPRC: firm performance in terms of risk management concepts

***0.1% significance level; **1% significance level;*5% significance level

Hypotheses 3_a, 3_b, and 3_c were investigated by using an OLS regression model as shown in table 4.14. Hypothesis 3_a predicted an inverse relationship between proactive behavior and a firm's performance in terms of profitability risk. The result of the OLS analysis confirms a strong inverse association between proactive behavior and firm profitability risk (β = -.032, p = .000). This refers to a negative beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of profitability risk will decrease by 0.032 units. Thus, hypothesis 3_a is statistically supported. According to this result, the greater amounts of proactive behavior by managers leads to improving firm performance in terms of lowering profitability risk. The $H3_a$ model R-square score was 0.064, signifying that 6.4% of the data fit this regression model.

Hypothesis 3_b predicted an inverse relationship between proactive behavior and a firm's performance in terms of growth risk. The result of the OLS analysis confirms a strong inverse association between proactive behavior and firm growth risk (β = -.909, p = .000). This refers to a negative beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of growth risk will decrease by 0.909 units. Thus, hypothesis 3_b is statistically supported. This means that managers engaging in more proactive behavior leads to improvements in firm performance in terms of lowering growth risk. Additionally, the control variable for the type of firm was also significantly associated with firm performance in term of growth risk (β = -.483, p = .010) revealing that firms not having a formal risk management department had a more negative influence on growth risk than a firm having a risk management department in its organizational structure. The R-square score for the $H3_b$ model was 0.163, this means that 16.3% of the data fit this regression model. Finally, hypothesis 3_c predicted an inverse relationship between proactive behavior and a firm's performance in terms of market value risk. The result of the OLS analysis confirmed an inverse association between proactive behavior and firm market value risk (β = -.064, p = .024). This refers to a negative beta coefficient where, for every one unit increase in proactive behavior, the firm's performance in terms of market value risk will decrease by 0.064 units. Thus, hypothesis 3_c is statistically supported. According to this result, the greater volumes of proactive behavior by managers leads to improving firm performance in terms of

lowering market value risk. The $H2_c$ model's R-square score was 0.041, meaning that 4.1% of the data fit this regression model.

To check for multicollinearity among variables in these models, the VIF was calculates and the values ranged from 1.072 to 2.069. These values are significantly below the critical thresholds, thus, there are no issues with multicollinearity.

Table 4.14 Regression Results: Effect of Proactive Behavior on Firm Performance in terms of Profitability, Growth, and Market Value

(n = 488)

(Hypothesis 3_a, 3_b, 3_c)	**Dependent Variable: (ß)**		
Independent Variables:	**Profitability Risk**	**Growth Risk**	**Market Value Risk**
Constant	**.121****	**4.995*****	**.753*****
Proactive Behavior	**-.032*****	**-.909*****	**-.064***
Gender (Male=1, Female=2)	.013	-.122	.016
Age	.014	-.058	-.012
Educational Level	-.011	-.026	-.027
Faculty or major of study	.001	.044	.006
Organizational Unit (Line=1)	.015	.028	-.047
Work experience with current firm	-2.103E-5	-.008	.002
Monthly Salary	-.003	-.079	-.043
Type of firm (Had RMD=1)	-.002	**-.483****	-.049
R-Square	**.064**	**.163**	**.041**
Adjusted R-Square	**.047**	**.147**	**.023**

***0.1% significance level; **1% significance level;*5% significance level

4.2.4 The Moderating Roles of the Type of Firm and Organizational Unit of the Manager on the Relationship between Proactive Behavior and Firm Performance in terms of Financial and Risk Management Concepts

To investigate the moderating roles of the type of firm and the organizational units of the managers on the relationship between proactive behavior and firm performance were tested using the following methodology. First, whether or not a significant relationship existed between proactive behavior and firm financial and risk management performance had to be determined. Secondly, the proactive behavior variable was transformed into standardized variable that is interpreted as the standard deviation change in the firm performance, in terms of financial performance and risk management variables, when the proactive behavior variable is changed by one standard deviation, while holding all other variables constant. Thus, instead of comparing changes of one unit, the comparison is between changes of one standard deviation. Thirdly, the values for the moderating variables representing whether or not the firm had a formal risk management department and whether the manager worked in a line function or staff function unit were multiplied by the standardized proactive behavior variable and inserted into in the model. Finally, an OLS regression model was used to investigate the existence of any moderating effects on the relationship between proactive behavior and the firm's performance in terms of financial performance and risk management concepts.

4.2.4.1 Moderating Roles of the Type of Firm on the Relationship between Proactive Behavior and Firm Performance in terms of Financial Performance

After confirming that there was a significant relationship between proactive behavior and firm performance in terms of financial performance and risk management concepts, the researcher performed hypotheses analysis to determine the moderating effects of the type of firm on this relationship using a regression model. Results from the OLS regression analysis of the relationship are presented in table 4.15. Hypothesis 5_a predicted that the type of firm moderates a positive relationship between proactive behavior and firm financial that will be stronger for firms having a formal risk management department in comparison to those lacking a formal risk management department in their organizational structure. The OLS analysis confirmed the existence of a positively and strongly significant positive interaction (β

= .113, p = .000) associated between proactive behavior and firm financial performance (β = .173, p = .000). This refers to a positive beta coefficient (standardized proactive behavior variable x whether or not firm had a formal risk management department variable) where, for every one unit increase in the interaction, the positive relationship between proactive behavior and firm financial performance will increase by 0.113 units. This confirmed that the positive relationship is stronger (positive moderation) for firms that have a formal risk management department than for those that do not. Thus, hypothesis 5a is statistically supported. In addition, none of the control variables was significantly associated with firm financial performance. The R-square score for this model was 0.339, inferring that 33.9% of the data fit this regression model.

The Variance Inflation Factor (VIF) was evaluated to determine if there was multicollinearity among the variables in the model for hypothesis 5_a. The researcher transformed the variable for proactive behavior into a standardized variable before multiplying it by dummy variable for type of company, which was coded 1 firms with a formal risk management department and 0 if the firm did not have a formal risk management department. The VIF values of this model ranged from 1.072 to 2.069, which were significantly below the critical threshold of 10 (Petter, Straub, & Rai, 2007). Thus, multicollinearity is not an issue in this model.

Table 4.15 Regression Results: Effect of Type of Firm on Proactive Behavior and Firm Financial Performance

(n = 488)

(Hypothesis 5_a)	**Dependent Variable:FPFC**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**-.578*** **	**-.369** **	.001	.122	
Proactive Behavior	**.223*** **	**.173*** **	.000	.021	1.879
Gender (Male=1, Female=2)	.002	.004	.879	.027	1.091
Age	.010	.011	.545	.019	1.811
Educational Level	.041	.032	.275	.030	1.390
Faculty or major of study	.005	.006	.195	.005	1.275
Organizational Unit (Line=1)	-.030	-.040	.175	.030	1.351
Work experience with current firm	.004	.004	.107	.002	1.746
Monthly Salary	-.041	-.042	.118	.027	2.069
Type of firm (Had RMD=1)	.052	.052	.052	.027	1.072
Proactive Behavior (Z) x TF(Had)	**-**	**.113*** **	.000	.026	1.672
R-Square	**.314**	**.339**			
Adjusted R-Square	**.301**	**.325**			

FPFC: firm performance in terms of financial performance concepts, Proactive Behavior (Z) was standardized, and TF refers to Type of firm

***0.1% significance level; **1% significance level;*5% significance level

Hypothesis 5_b predicted that the type of firm would moderate a negative relationship between proactive behavior and firm performance in terms of risk management concepts that would be stronger for firms with a formal risk management department than for those without a formal risk management department in their organizational structure. The result of the OLS analysis, as shown in table 4.16, confirms a significant negative effect (β = -.160, p = .009) on the interaction between proactive behavior and firm performance in terms of risk management concepts (β = -.265, p = .000). This refers to a negative beta coefficient (standardized proactive behavior variable x whether or not firm had a formal risk management department variable) where, for every one unit increase in the interaction, the negative relationship between proactive behavior and firm performance in terms of risk

management concepts will decrease by 0.160 unit. Therefore, the negative relationship (negative moderation) is stronger in firms with a formal risk management departments compared to firms without a formal risk management department in their organizational structure. Thus, hypothesis 5b is statistically supported. In addition, the control variable for type of firm was significantly associated with firm performance in terms of risk management concepts (β = -.145, p = .018). This means that firms not having a formal risk management department had more negative influence on firm performance in terms of risk management concepts than a firm having a formal risk management department in their organizational structure. In this model, R-square score was 0.207, indicating that 20.7% of the data fit this regression model.

Multicollinearity among the variables in hypothesis 5_b was evaluated by calculating the Variance Inflation Factor (VIF) for the model. The VIF values for this model ranges from 1.072 to 2.069. Thus, it is no serious multicollinearity problem related to this model.

Table 4.16 Regression Results: Effect of Type of Firm on Proactive Behavior and Firm Performance in terms of Risk Management Concepts

(n = 488)

(Hypothesis 5b)	**Dependent Variable:FPRC**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**1.958*** **	**1.662*** **	.000	.281	
Proactive Behavior	**-.335*** **	**-.265*** **	.000	.049	1.879
Gender (Male=1, Female=2)	-.031	-.033	.594	.063	1.091
Age	-.018	-.021	.636	.044	1.811
Educational Level	-.021	-.009	.893	.068	1.390
Faculty or major of study	.017	.015	.170	.011	1.275
Organizational Unit (Line=1)	-.001	-.013	.846	.069	1.351
Work experience with current firm	-.002	-.002	.754	.005	1.746
Monthly Salary	-.042	-.041	.509	.061	2.069
Types of firm (Had RMD=1)	**-.144***	**-.145***	.018	.061	1.072
Proactive Behavior (Z) x TF(Had)	-	**-.160** **	.009	.061	1.672
R-Square	**.196**	**.207**			
Adjusted R-Square	**.181**	**.191**			

FPRC: firm performance in terms of risk management concepts, Proactive Behavior (Z) was standardized, and TF refers to Types of firm

***0.1% significance level; **1% significance level;*5% significance level

4.2.4.2 Moderating Role of Organizational Unit on the Relationship between Proactive Behavior and Firm Performance in terms of Financial Performance and Risk Management Concepts

After confirming if a significant relationship existed between proactive behavior and firm performance exists in relation to financial performance and risk management concepts, the researcher performed hypotheses analysis to determine the moderating effects of the manager's organizational unit on the relationship using a regression model. Hypothesis 6_b predicted that the organizational unit of a manager would moderate a positive relationship between proactive behavior and firm performance in terms of financial performance that would be stronger for managers who work in a line function unit than those who work in a support function unit. The

OLS analysis results are shown in table 4.17 and confirm the existence of a positively and strongly significant interaction (β = .070, p = .014) with a positive effect proactive behavior and firm performance in terms of financial performance (β = .164, p = .000). This refers to a positive beta coefficient (standardized proactive behavior variable x organizational unit variable) where, for every one unit increase in the interaction, the positive relationship between proactive behavior and firm financial performance will increase by 0.070 units. This shows that the positive relationship (positive moderation) is stronger among managers who work in line function units than among those working in support function units. Thus, hypothesis 6_b is statistically supported. It was also determined that none of control variables were significantly associated with firm performance in terms of financial performance. In this model, the R-square score was 0.322 which means that 32.2% of the data fit this regression model.

To check for multicollinearity among variables, the Variance Inflation Factor (VIF) of the model for hypothesis 6_b was calculated. The researcher transformed proactive behavior variable into a standardized variable and multiplied it by the dummy variable for the manager's organizational unit, which was coded as a 1 if the manager worked in a line function unit or as a 0 if they worked in a support function unit. The 1.076 to 3.655 range of VIF values, for this model are significantly below the critical threshold of 10. Therefore, there is no significant problem with multicollinearity in this model.

Table 4.17 Regression Results: Effect of Organizational Unit on Proactive Behavior and Firm Performance in terms of Financial Performance

(n = 488)

(Hypothesis 6_b)	**Dependent Variable:FPFC**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**-.578*** **	**-.363***	.000	.143	
Proactive Behavior	**.223*** **	**.164*** **	.000	.030	3.655
Gender (Male=1, Female=2)	.002	.003	.922	.027	1.090
Age	.010	.013	.507	.019	1.816
Educational Level	.041	.049	.102	.030	1.401
Faculty or major of study	.005	.003	.579	.005	1.317
Organizational Unit (Line=1)	-.030	-.024	.434	.030	1.352
Work experience with current firm	.004	.004	.095	.002	1.745
Monthly Salary	-.041	-.043	.108	.027	2.072
Type of firm (Had RMD=1)	.052	.048	.074	.027	1.076
Proactive Behavior (Z) x OU(Line)	**-**	**.070***	.014	.028	3.155
R-Square	**.314**	**.322**			
Adjusted R-Square	**.301**	**.308**			

FPFC: firm performance in terms of financial performance concepts, Proactive Behavior (Z) was standardized, and OU refers to Organizational Unit

***0.1% significance level; **1% significance level;*5% significance level

Hypothesis 6_c predicted that the organizational unit of a manager would moderate a negative relationship between proactive behavior and firm performance in terms of risk management concepts that would be stronger for managers who worked in line function units in comparison to those who worked in support function units. The result of the OLS analysis, as shown in table 4.18, confirms a negatively and strongly significant effect (β = -.156, p = .016) associated the relationships between proactive behavior and firm performance in terms of risk management concepts (β = -.203, p = .003). This refers to a negative beta coefficient (standardized proactive behavior variable x organizational unit variable) where, for every one unit increase in the interaction, the negative relationship between proactive

behavior and firm performance in terms of risk management concepts will decrease by 0.156 unit. This means that this negative relationship (negative moderation) is more significant among managers who work in line function unis than for those who work in support function units. Thus, there is significant support for hypothesis 6_c. Furthermore, the control variable for type of firm was significantly associated with firm performance in terms of risk management concepts (β = -.153, p = .013). This means that firms not having a formal risk management department had a more negative influenced on firm performance in terms of risk management concepts than firms having a formal risk management department in their organizational structure. For this model, R-square score was 0.206, indicating that 20.6% of the data fit this regression model.

Multicollinearity in the model for hypothesis 6_c was evaluated by calculating the Variance Inflation Factor (VIF). The VIF values ranged from 1.076 to 3.655., indicating there is no significant problem with multicollinearity in this model.

Table 4.18 Regression Results: Effect of the Manager's Organizational Unit on Proactive Behavior and Firm Performance in terms of Risk Management Concepts

(n = 488)

(Hypothesis 6_c)	**Dependent Variable:FPRC**				
Independent Variables:	**Main Effect (ß)**	**Interaction Term (ß)**	**P-Value**	**Std. Error**	**VIF**
Constant	**1.958*** **	**1.473*** **	.000	.326	
Proactive Behavior	**-.335*** **	**-.203** **	.000	.068	3.655
Gender (Male=1, Female=2)	-.031	-.032	.613	.063	1.090
Age	-.018	-.025	.571	.044	1.816
Educational Level	-.021	-.040	.559	.069	1.401
Faculty or major of study	.017	.022	.051	.011	1.317
Organizational Unit (Line=1)	-.001	-.016	.818	.069	1.352
Work experience with current firm	-.002	-.002	.739	.005	1.745
Monthly Salary	-.042	-.036	.559	.061	2.072
Type of firm (Had RMD=1)	**-.144***	**-.153***	.013	.061	1.076
Proactive Behavior (Z) x OU(Line)	-	**-.156***	.016	.064	3.155
R-Square	**.196**	**.206**			
Adjusted R-Square	**.181**	**.189**			

FPRC: firm performance in terms of risk management concepts, Proactive Behavior (Z) was standardized, and OU refers to Organizational Unit

***0.1% significance level; **1% significance level;*5% significance level

4.3 Summary

The results presented in this chapter will be discussed in detail in the summary section including interpreting the statistical results and summarizing the OLS results in figure 4.1. These results were separated into four main categories including 1) risk perception and proactive behavior, 2) proactive behavior and firm performance, 3) the roles of types of firm on risk perception, proactive behavior, and firm performance, and 4) the roles of organizational units of manager on risk perception, proactive

behavior, and firm performance. The interpretation of results was described and linked to the related literature, theories, and concepts together.

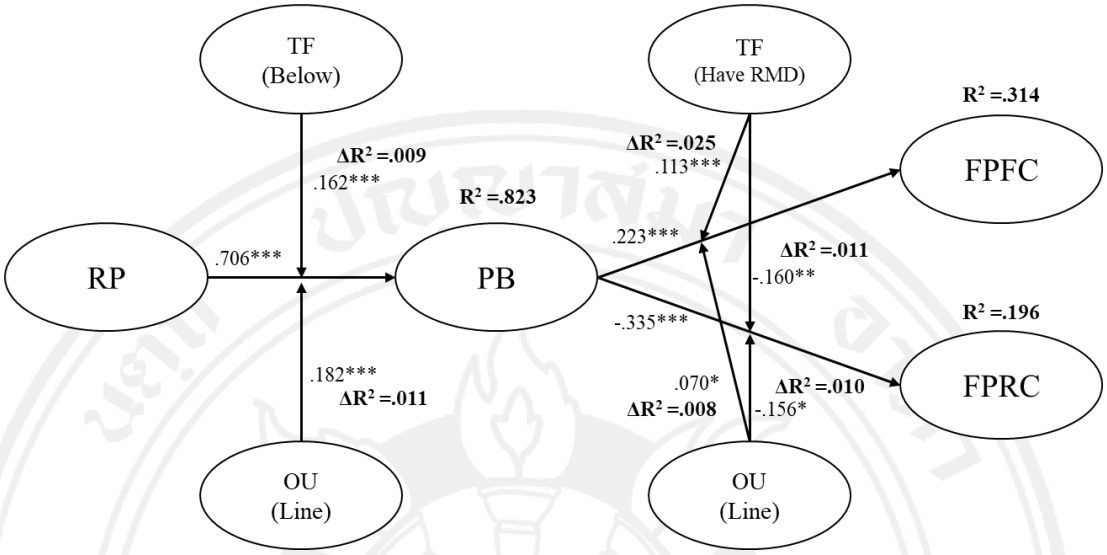

Figure 4.1 Ordinary least squares results the paths that were significant are shown in solid lines (***0.1% significance level; **1% significance level;*5% significance level).

RP: risk perception; TF (Below): type of firm (below average target); OU: organizational unit (frontline manager); PB: proactive behavior; TF (Had RMD): type of firm (established RMD); FPFC: firm performance in terms of financial performance concepts; FPRC: firm performance in terms of risk management concepts.

4.3.1 Risk Perception and Proactive Behavior

Regarding the relationship between risk perception and proactive behavior, the result shows a significantly positive association between these two factors. The results suggests that, in firms with higher levels of perceived risk, the more managers' engage in proactive behavior because managers tend to take proactive action when they perceive potential negative effects on their firms' operations posed by a perceived risk.

4.3.2 Proactive Behavior and Firm Performance

Regarding the relationship between proactive behavior and firm performance, there are divided into two main associations including 1) the effect of proactive

behavior on firm performance in terms of financial performance concepts and 2) the effect of proactive behavior on firm performance in terms of risk management concepts. There is a significantly positive association between proactive behavior and financial performance and, similarly, a significant inverse relationship between proactive behavior and risk management. Firstly, the evidence strongly suggests that higher levels of proactive behavior by managers lead to better firm performance in terms of financial performance concepts. The key role managers play in a firm's performance is reflected by their behaviors. When managers of SET listed firms take more proactive roles, the firms tend to achieve better performance in terms of financial performance concepts. Secondly, the results of this study strongly suggest that greater amounts of proactive behavior by managers leads to improving firm performance in terms of lowering risk. Because the proactive behaviors of managers enhance and support the operations of the firm, they eventually become part of mitigating the firm's risks. It is obvious that, when managers of SET listed firms tend to take more proactive actions, risks to the firm's financial performance will be reduced.

4.3.3 The Roles of Types of Firm on Risk Perception, Proactive Behavior, and Firm Performance

The circumstances in certain types of firms influence the positive relationship between risk perception and proactive behavior, as shown in figure 4.2. The findings suggest that managers who work at below average target firms, in terms of ROA, take more proactive actions and, when the perceived risks to their firm increase, they tend to engage in more proactive behaviors. This is likely because below average target firms face more unpredictable results in regard to financial performance concepts, such as the fluctuation of ROA, mutability of generating returns, and inconstancy of growth, meaning that these firms also need to take more proactive actions to address their firm's problems which, eventually, forces their employees to become more proactive.

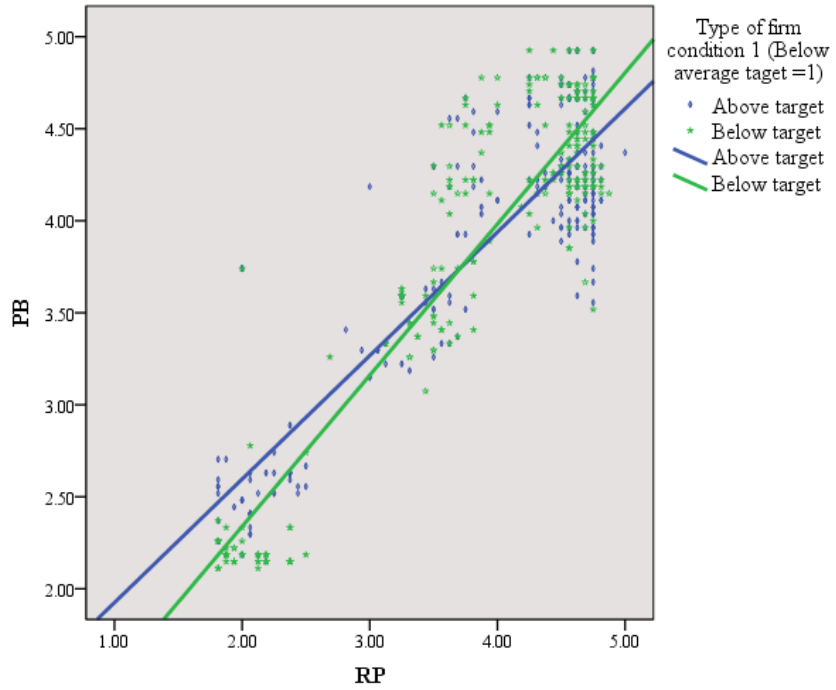

Figure 4.2 Data plot: Relationship between risk perception and proactive behavior

Next, the firms' organizational structures were defined into two groups based on whether or not the firms had a formal risk management department in their organizational structure. The type of company organizational structure can have a positive effect on the relationship between proactive behavior and firm financial performance. The effects of the different types of firms on this relationship is shown in figure 4.3. The findings suggest that managers who work at firms with a formal risk management department more frequently engage in proactive behaviors and, in turn, when managers take a higher number of proactive actions, firms achieve better financial performance.

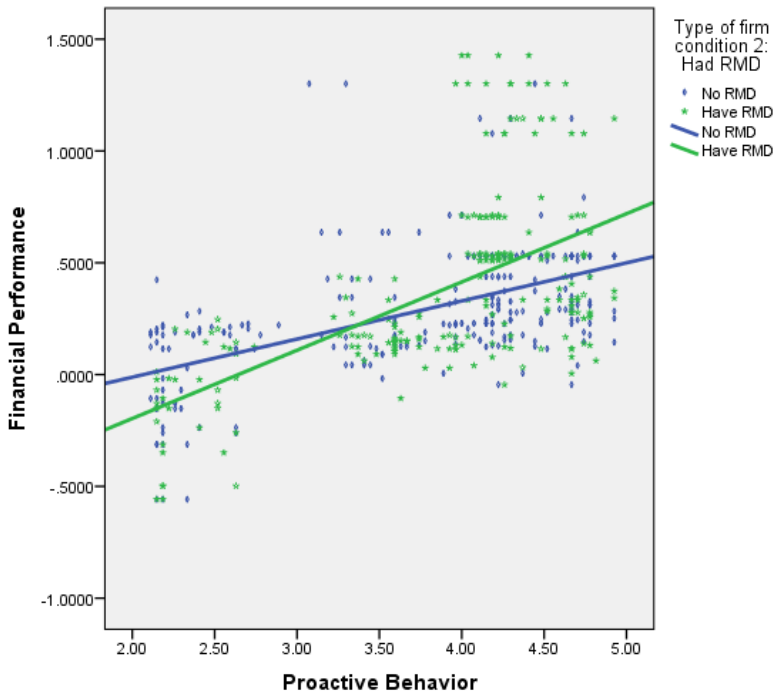

Figure 4.3 Data plot: Relationship between proactive behavior and firm performance in terms of financial performance concepts
RMD: Risk Management Department

Another related issue is the influence that the type of firm has on the inverse relationship between proactive behavior and firm performance in terms of risk management concepts. The findings, as shown in figure 4.4, suggest that managers who work at firms with a formal risk management department have greater influence on their firm's performance in terms of risk management, and, when managers engage in higher levels of proactive behaviors, firms will have lower levels of risk related to their financial performance.

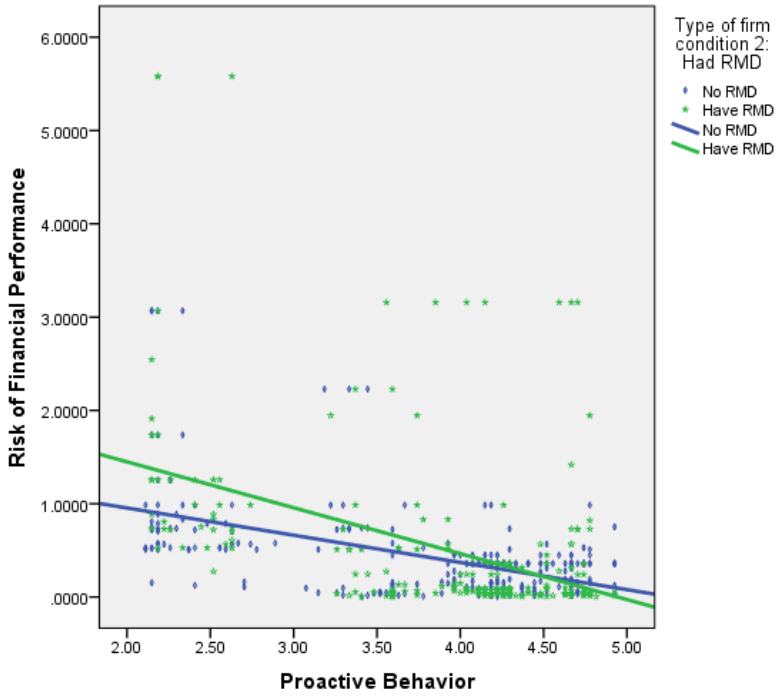

Figure 4.4 Data plot; Relationship between proactive behavior and firm performance in terms of risk management concepts
RMD: Risk Management Department

4.3.4 The Roles of Organizational Units of Manager in Risk Perception, Proactive Behavior, and Firm Performance

The relationship between risk perception and proactive behavior can be positively affected by the type of organizational unit the manager works in, as shown in figure 4.5. Managers who work in line function units tend to take more proactive actions in their work than those working in staff function units when both two groups perceive higher levels of risks for the firm.

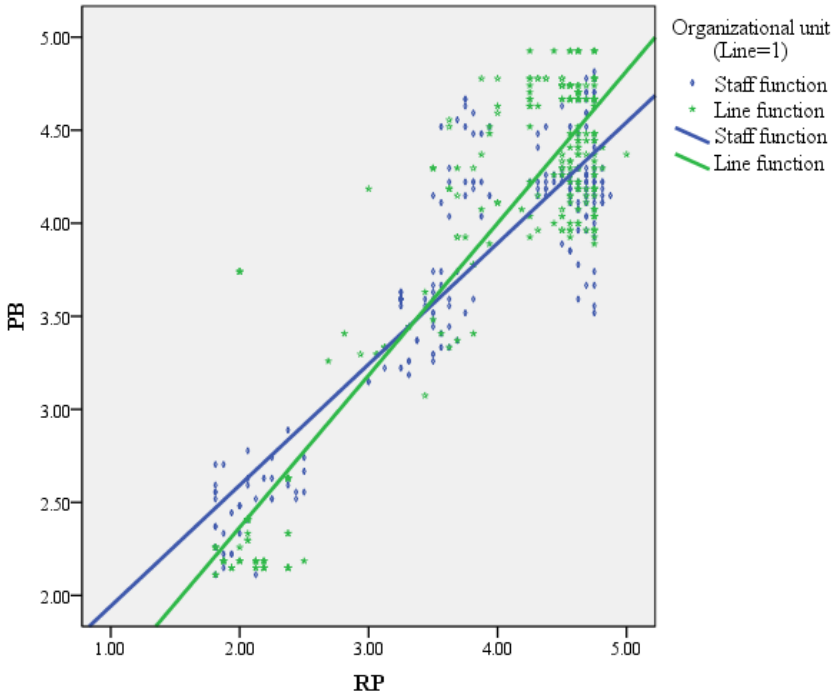

Figure 4.5 Data plot: Relationship between organizational unit, risk perception, and proactive behavior

Another way the organizational units of a manager can have a positive effect on proactive behavior firm performance in terms of financial performance concepts, as shown in figure 4.6. When managers who engage in more proactive behaviors, the managers who work in line functions have more influence on the level of firm performance indicators, such as profitability, growth, and market value, than those working in staff function units.

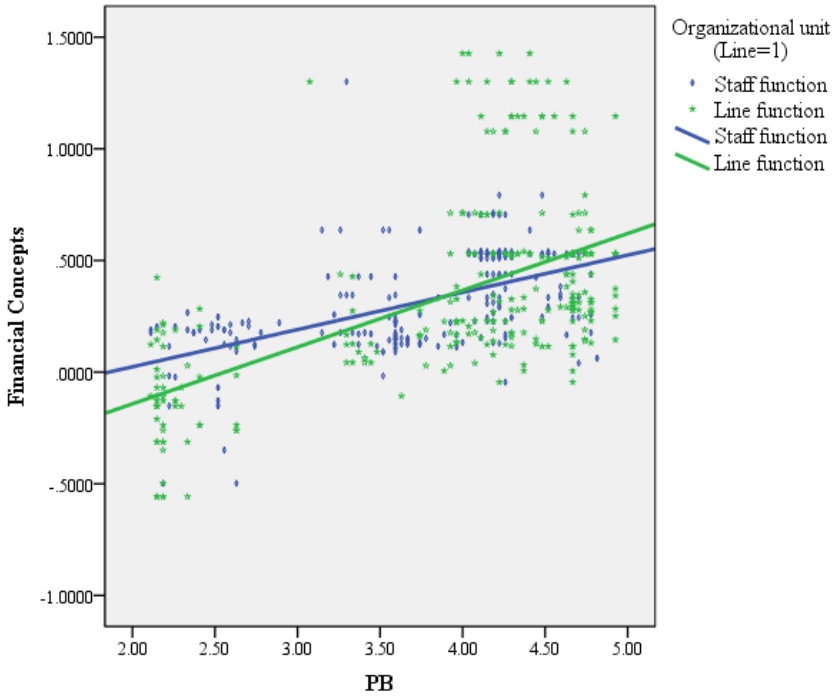

Figure 4.6 Data plot: relationship between organizational unit, proactive behavior, and firm performance in terms of financial performance concepts

Additionally, the organizational unit of a manager influences the inverse relationship between proactive behavior and firm performance is in terms of risk management concepts. Managers who work in line functions have more influence on improving the firm's risk performance than those who work in staff function units when they take more proactive actions, as shown in figure 4.7.

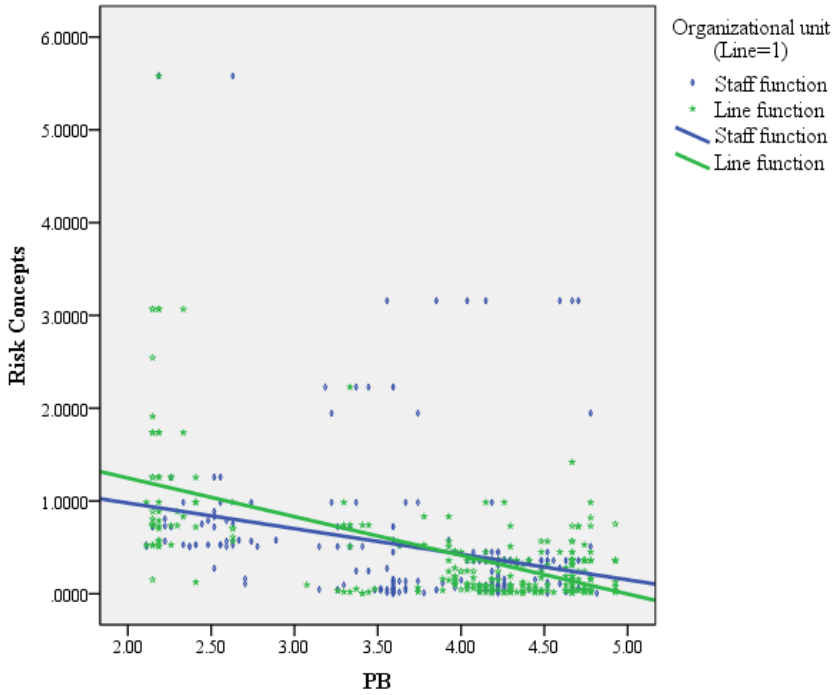

Figure 4.7 Data plot: Relationship between organizational unit, proactive behavior, and firm performance in terms of risk management concepts

CHAPTER 5

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter reviews the research that has been carried out in this study. All issues such as the research objectives, research framework, and research methodology, are briefly discussed. Subsequently, the findings from the empirical test derived from the data analysis are presented. Finally, discussions, conclusion and recommendations, contribution, limitation of the study, and future research are presented. The above mentioned issues are discussed in the following five sections:

5.1 Discussion

5.2 Conclusion and Recommendations

5.3 Contribution

5.4 Limitation of the Study

5.5 Future Research

5.1 Discussion

The interpretation of results is discussed and links the related literature, theories, and concepts together as the follows.

5.1.1 Risk Perception and Proactive Behavior

With regard to the relationship between risk perception and proactive behavior, managers of firms need to make decisions to solve problems in the workplace when they perceive, or recognize, any negative occurrences that might impact their firms. In general, firms operate and are faced with unforeseen and unexpected factors, called “risk”, which are caused by rapid changes in environmental elements, such as technologies, competitors, or other external factors. Therefore, managers tend to take more proactive actions when they perceive a risk to their firm. For example, managers who perceive an operational risk related to an employee are more capable at addressing the potential threat and coming up with a good solution

that can transform it into an opportunity and solve, or prevent, problems. In practice, managers rely on a mix of techniques in managing risks and making decisions. For example, in management, in respect to perceived risk, managers have to plan how to improve the capacity of their subordinates to perform their work and improve the firm. They look for new opportunities for the business, create safeguards against potential problems, and plan ahead for decisions they will need to make down the line. This finding is in line with the protection motivation phenomenon theory, which holds that people tend to guard, or protect, themselves when they perceive or anticipate negative consequences and attempt to prevent the event from occurring, or divert the negative effects caused by the event from affecting them through preventive actions (R. W. Rogers, 1975). This result is consistent with the findings by Morris, Avila, and Teeple (1990) that referred to the reasonable awareness of the risks involved in work ventures which anticipated that risk takers will engage in proactive behavior to the extent that it supports their goals. Moreover, it is consistent with the results of the study by Bubeck, Botzen, and Aerts (2012) which refers to the positive relationship between the protective behavior in mitigating flood affects by flood risk perception in terms of probability and consequences.

The results of this study suggest that firms listed on SET should enhance and support the risk perception skills of their employees, especially managers who are directly responsible for making decisions related to addressing risks, because employees tend to take proactive actions in their work to ensure that their career will be stable and ensure their firm's survival. In terms of risk management, perceived risk skills can be promoted through several approaches. Firstly, training and educating employees about how to perceive risks to the firm and why they are important to the workforce. The right training and education will correct misconceptions about the risk management process, especially risk perception, and invigorate employees to engage in the risk management process. Secondly, firms need to promote their employees as necessary to ensure the firm's ability to remain stable and focus on maintaining continuity of business operations with the least amount of interruptions possible. Thirdly, perceived risk skills should be enhanced to become a major part of the firm's organizational culture, which requires proactive collaboration of all units within the organization, and will help the firm to adapt and thrive in the face of complex

changes, while creating value, while ensuring that all employees in an organization are able understand its importance and incorporate it into their work ethos. Proactive actions should be promoted by managers who clearly understand the firm's organizational risks, which should also lead to improvement of the managers' essential skills and attitudes. For example, innovative thinking and issue selling should be enhanced to promote recognizing problems and finding the new, appropriate approaches to solve them. Managers can use issue selling as upward influence, claiming behaviors, and impression management to explain how and where they allocate their time and attention. At present, firms are actively trying to reduce the bureaucratic layers of management to increase efficiency, and that means they must rely more heavily on their managers' proactive behavior.

One of the critical tools for discovering risks to a firm is feedback seeking, which can be used by managers, or supervisors, to engage their subordinates about work related issues, especially operational risks. Some Thai firms listed on the SET had seriously fluctuating performances in terms of financial conditions that affected their stability because their employees didn't have sufficiently good work performance. For example, some firms in the technology industry face workplace health and safety risks that affect their reputation, so managers who are responsible for controlling and managing their subordinates should understand how to systematically perceive these risks efficiently and find proactive ways to improve work functions and cope with the risks and their consequences. Thus, the systematic perception of risks to a firm's operations is an urgent issue for top management to consider and produce policies that are consistent with enhancing their employees' proactive behavior. Additionally, establishing proactive cultures in the workplace should begin at the top, with the board of directors being aware of, and paying attention to, this issue and flowing downward throughout the organization because it is a major element supporting the successful establishment of a proactive culture in a firm. In terms of enterprise risk management (ERM), having a culture of innovation is required as part of business operations to allow the firm to be able embrace new ideas and to tolerate failure (Fraser, Simkins, & Narvaez, 2015, p. 297). Thus, firms, to enable a culture of proactive behavior, should change from a risk-averse view to a risk-aware view, in which they openly recognize and address the risks they face.

5.1.2 Proactive Behavior and Firm Performance

In the context of proactive behavior and firm performance in terms of financial performance concepts, when managers of SET listed firms take more proactive roles, the firms tend to achieve better performance in terms of financial performance concepts. One example of this is profitability, which represents the ability to generate returns as indicated by returns on assets (ROA), returns on equity (ROE), and returns on investment (ROI). These benchmarks tend to be stable, or improve, when managers and employees are committed, and work proactively, to ensure the best possible performance of the firm.

Proactive work behavior is one of the most important elements that helps employees be successful in their careers, and it is also directly reflected in their firm's performance. Secondly, growth represents the ability to increase assets, profits, and sales and it occurs because of improved outcomes in comparison to the previous period. Thirdly, market value represents positive future expectations that there will be good outcomes because of a firm's advantages over its competitors. Improvements in all of these financial results are fostered by one of the major concerns for business operations, the firm's human resources and their employees' proactive work behavior.

Finally, previous literature mentioned the positive relationship between proactive behavior and firm performance. The results of this study are consistent with the results from Lumpkin and Dess (2001), which referred to the positive impact of proactiveness on sales growth, return on sales, and profitability, and the results of González-Benito and González-Benito (2005), that tracked the positive relationship between environmental proactivity and business performance. In addition, this result is consistent with the result from J. Combs, Liu, Hall, and Ketchen (2006), which referred to the positive effect of individual high performance work practices on organizational performance. Moreover, this result provides support to the agency theory, which states that the a firm owner delegates the authority of decision making to the agent when working under unexpected conditions that may directly impact firm performance (Jensen & Meckling, 1976). For example, in respect to finance, financial managers are agents on behalf of their firm owners and are given responsibility for the firms' assets, profitability, and investment. Firms listed on the SET should encourage managers and employees to engage in proactive work behavior that will improve their

performance. The firms should pay great attention to their human resources and develop proactive work models. In the context of proactivity, managers should try to predict future outcomes by developing foresight and imagination to be able to understand how things work, such as seeing the patterns of daily practice and the natural cycles that exist in their firms. Then, they should work prevent problems by challenging approaches that pose a threat by taking control and confronting the potential losses head on, before they can grow into overwhelming problems. Next, they should plan for what they need to do in the future and understand what the consequence of their actions, or inactions, may be. They should take initiative and be a part of the solution by taking timely and effective action. In addition, forming encouraging environments will always yield benefits leading to having enthusiastic employees because acting proactively lowers mental pressure because all the tasks will be taken care of and the workload will be well balanced. Thus, increasing employee knowledge of all the elements leading to proactive behavior among the employees of every functional and organizational level of a firm is an essential action for SET listed firms to enhance and maintain the performance level of their organizations.

In the context of proactive behavior and firm performance in terms of risk management concepts, when managers of SET listed firms tend to take more proactive actions, risks to the firm's financial performance are reduced. These risks to the firm are related to the volatility and unpredictability of financial performance indicated by the average variance of the financial ratios of profitability, growth, and market value. Even though high performance firms get very good results in terms of financial performance, there is no guarantee that they lower their level of risk. These findings are consistent with the results from the study by Frese and Fay (2001) that described several aspects of the relationship between personal initiative and firm performance, such as the individual's level and organizational level. Moreover, this result is consistent with the significant result from the study by Kreiser, Marino, Kuratko, and Weaver (2013) that referred to the positive impact of proactiveness on firm performance for small-to-medium sized enterprises. Thus, firms should be concerned about employee behavior issues that clearly influence performance and retain managers and employees who engage in proactive behavior in the workplace.

All of the elements known to promote proactive actions should be a focus for enhancement at the top levels of management, including identifying opportunities, challenging the status quo, forming encouraging environments, socialization, feedback seeking, issue selling, innovation, proactive career behavior, and proactive coping with stress. For example, with respect to management, proactive behavior is systematic idea management which demonstrates the essentials of sustainable firm development. Therefore, firms should establish proactive behavior as a part of their organizational culture and core business operational policy, thus taking proactive behavior a step further, to form their business operating model in a way that enables their employees to find and anticipate problems and risks to the firm.

5.1.3 The Roles of the Type of Firms

The circumstances in certain types of firms influence the positive relationship between risk perception and proactive behavior. Managers who work at below average target firms, in terms of ROA tend to take more proactive actions and, when the perceived risks to their firm increase, they tend to engage in more proactive behaviors. This study's results provides support to the prospect theory that holds that 1) firms in the below the average target return level group will often seek risks to the firm in order to improve their position in the industry, and 2) firms in the above average target return level group will avoid risks to the firm to retain their position in the industry (Kahneman & Tversky, 1979). Moreover, this result is consistent with the findings from the study by Fiegenbaum (1990) that stated that the below target risk-return association was generally steeper than for above target as indicated using the median target of each industry. Thus, firms positioned as below average target firms should reveal firm's status in terms of both financial performance and risk management concepts to all employees with an intent to enhance their employees' risk perception, especially managers who are directly responsible for making decisions. Adventurous firms that are below average target should fully implement risk perception training for their managers to promote proactive behavior to improve the firm's condition in terms of financial performance. If firms can perceive risks and their consequences as clearly as possible, then better decision making and action taking will be possible, which will lead to appropriate risk management. In reality, in

order to survive, firms have to find the best way to solve the problems they face when they encounter serious risks, unexpected situations, or uncontrollable problems at both the individual and organizational levels.

The type of company organizational structure can have a positive effect on the relationship between proactive behavior and firm financial performance. Managers who work at firms with a formal risk management department more frequently engage in proactive behaviors and, in turn, when managers take a higher number of proactive actions, firms achieve better financial performance. Proactive managers take the lead by launching new initiatives, fostering constructive changes, and proactively address potential threats, rather than waiting for them to cause a problem before reacting. To be proactive means that you are actively working to change things in the direction you see as being most advantageous. Proactive behavior distinguishes true leaders from the herd of followers and exceptional organizations from the mediocre ones in the marketplace. Being proactive action that you strive to create changes you see as being beneficial, not passively waiting for it to happen on its own. It is far more than merely possessing the flexibility and adaptability to adjust to an uncertain future. Being proactive also means that you are willing to strategically take actions to address foreseen uncertainties and to prepare for those that are unforeseen, to improve and protect the firm. Managers who are highly committed to their organization try to solve problems, develop and implement ideas for improving in their organization, take the initiative to share knowledge or help others, proactively search for feedback, and so on. This is consistent with the results of the study by Pagach and Warr (2011) that referenced how hiring a Chief Risk Officer (CRO) for a firm positively influenced the firm's performance because the risk management team can use risk management tools to reduce earnings volatility, maximize shareholders' value, and promote financial security. Moreover, this finding is consistent with the result from the study by Gordon et al. (2009) that showed how organizations will improve their performance by employing the enterprise risk management (ERM) concept. In recent years, many firms in Thailand have added risk management departments in their organizational structures because, without doing so, in is impossible for them to define their objectives and goals for the future. Na Ranong and Phuenngam (2009) revealed that about 67.60 percent of the firms listed on the SET had set up risk management teams

by 2009, and referred to the seven critical success factors were important for risk management, including commitment from top management, communication, organizational structure, culture, IT, training, and trust. Thus, this result contains evidence strongly suggesting that firms should be concerned with, and consider, developing risk management systems to support business operations and improve their financial performance. Moreover, it should be a collaborative risk management system that takes into account employee behavior in the workplace to enhance introducing proactive behavior and risk management into the organizational culture. A firm has to practice discipline in developing their risk management system and make it an integral part of their overall business strategy, because it cannot be defined or accomplished in a day, nor can it be done in isolation. So, risk management should be a continuous process that is promoted and focused on until it becomes an integral part of an organization's risk culture.

The type of firm has an inverse relationship between proactive behavior and firm performance in terms of risk management concepts. Managers who work at firms with a formal risk management department have greater influence on their firm's performance in terms of risk management, and, when managers engage in higher levels of proactive behaviors, firms will have lower levels of risk related to their financial performance. The ability to detect risks and opportunities simultaneously is essential to being able to create and organization which is flexible enough to can create and maintain its value seamlessly. In order to better enable organizations to better recognize, manage, and, potentially, benefit from the risks they face, it is essential for there to be changes in the risk management mindset of many firms. This result is consistent with the results reached by Pagach and Warr (2011), who determined that hiring a Chief Risk Officer (CRO for a firm positively influenced the firm's performance. The available evidence strongly suggests that firms should be concerned about, and consider, developing risk management systems to support their business operations and to reduce and mitigate risks to their financial performance. Therefore, risk management systems are a clearly important element of a firm's infrastructure for maintaining stable conditions while affecting changes to improve performance. Operating a business without taking risks under consideration increases the chances that the firm will lose direction and will not be able to cope with problems

they encounter. Understanding a firm's risk exposure and practicing risk management are the first steps toward building a healthier business.

A risk management team's mission is to identify risks, formulate strategies address any foreseen risks, to implement these plans, and to motivate all of the employees and stakeholders actively support and participate in executing the plans. The larger a firm is, the more risks it will face, generally speaking. Therefore, the risk management strategies required to meet their greater number of threats have to be more sophisticated. Additionally, the risk management team is tasked with evaluating each known potential risk and assessing how critical each one is with regard to the firm's business. Risks that are considered to be critical are the ones which could affect the business adversely. Once a risk assessed as being critical, taking action to address that risk should become the first order of business. The singular goal of risk management is ensuring company only takes risks related to achieving its primary objectives, controlling and mitigating any other risks (CareersinAudit, 2013).

Risk management departments (RMD) generally generate the methodology a firm uses to identify and assess the financial impact of an adverse event on the organization, its members and stakeholders, and the public, as well as any environmental impacts. The RMD's role is relatively clear related to market and credit risk. However, addressing operational risks is considerable more daunting because the risks are found throughout the entire structure of the organization—they can be anywhere from the front office, the back office, sales, finance, labor pool, information systems, or any other part of the corporate entity. The fact that they can be found anywhere within the organizational body is only part of the reason they are so problematic, clearly defining or measuring them is also a perplexing problem. It is imperative to keep in mind that a RMD manager needs to be a person who likes, or is readily able, to take contrarian, even adversarial, viewpoints with regard to charting the course to achieve the organization's goals, however, they must not be someone who actively wants the project to fail. When choosing a risk management officer, finding, and choosing, the right person for the job is an extremely important, and tricky, issue, especially for firms lacking an established risk management department or system (CareersinAudit, 2013). At this point, a firm would be deeply into the process of adopting a proactive risk management approach that will improve the

firm's ability evade or mitigate the effects of any existing or emerging risks, as well as helping to create the capability to rapidly uncover, assess, and respond to unforeseen events or crises (Metric Stream, 2019).

5.1.4 The Roles of Organizational Units

In the context of the roles of organizational units, managers who work in line function units tend to take more proactive actions in their work than those working in staff function units when either perceive higher levels of risks for the firm. On the one hand, a key attribute of line function managers is being directly responsible for the firm's production. Front line function managers are usually the first workers who discover or encounter problems at their firms that might be critical risks and failure factors for the business's operations. For example, in manufacturing firms, production managers are responsible for the technical management, supervision, and control of the production processes. On the other hand, the fundamental attribute of staff function managers is supporting the firm's production. This group of managers tends to be part of the support team and works in the back office. A good example would be the firm's human resource officer. HR managers prevent and reduce the unwanted loss of human and intellectual capital; increase bottom-line profit and improve financial performance by reducing costs related to employee turnover; and improve workforce performance (quality, stability, engagement, and productivity) (Herman, 2005). Thus, firms should be concerned about how to enhance risk perception and proactive behavior in both groups of managers that influence the firm's performance. Moreover when managers engage in more proactive behaviors, the managers who work in line functions have more influence on the level of firm performance indicators, such as profitability, growth, and market value, than those working in staff function units. This result is consistent with the results of the study by Damanpour and Schneider (2008) that described how the moderating roles of manager characteristics, such as pro-innovation attitude, influenced the relationship between the characteristics of innovation and innovation adoption. Additionally, managers who work in line functions have more influence on improving the firm's risk performance than those who work in staff function units when they take more proactive actions. Thus, the enhancing risk perception and proactive behavior of

employees, especially managers who work in both line and staff function units, is paramount for firms to succeed in improving and increasing their performances in terms of both financial performance and risk management concepts. However, the success of a firm does not solely depend on the proactive behavior of its employees, but it is also dependent on several other factors related to operating the business, such as management activities (character, effectiveness, and responsibilities), organizational objectives, organizational culture, and environment.

In summary, incorporating a formal risk management department in a firm's structure is part of creating a proactive environment which will not only enable the firm to address current risks, but provide the structure and ability to foresee potential future exposures, allow healthy debate regarding what levels of risk the firm and its stakeholders are willing to tolerate, and formulate policies and procedures to mitigate current and future risks. A key function of the risk management department is also quickly, efficiently, and effectively communicating information about risk exposures and situational changes the firm faces to senior stakeholders in a manner that engenders enough trust that the department becomes an integral part of the company's strategic decision-making processes. Even though many firms have been developing risk management approaches, or strategies, for operating their business, as well as preparing emergency plans to deal with unexpected situations, they may not effectively cover all of their critical risks because risk management should be driven systematically and it requires continuous processing and development. Thus, a risk management department can help a firm to drive the systematic process of risk management because it is responsible for holistically managing the risks of all the departments in an organization.

5.2 Conclusions and Recommendations

This research sought to look at SET listed firms' performance related to financial performance, risk management concepts, and staff behavior and encourage firms' development of knowledge of holistic risk management. Four-hundred and Eighty-three firms listed on The Stock Exchange of Thailand (SET) from 8 industries (including property and construction, financials, the agro & food industry, technology,

services, consumer products, industrials, and resources) were selected as the unit of analysis based the availability of their 2013 - 2017 annual report information. Out of the total number of firms contacted, 231 firms replied to the researcher and allowed the researcher to contact their managers about being a participant in the study, yielding a 48 percent response rate. In total, 488 surveys were completely filled out. However, the researcher cannot specify the response rate of the managers that were contacted about becoming respondents because they were contacted by the human resource department for each firm, not in person by the researcher. Therefore, the number of potential respondents was uncontrollable and unknown. Ordinal Least Squares (OLS) was used to estimate the relationship between risk perception and proactive behavior and the relationship between proactive behavior and firm performance in terms of financial performance and risk management concepts as well as to estimate the moderating effects of the type of firms and organizational units of manager on the main relationship.

The major findings from this research are presented as follows. Firstly, risk perception has a significant positive association with proactive behavior wherein the higher the level of perceived risk is, more proactive behavior is engaged in by the respondents. Secondly, proactive behavior by the firms' managers is positively associated with firm performance in terms of financial performance concepts in that financial performance markers related to manager's proactive behaviors were enhanced by the managers taking more proactive actions. Thirdly, proactive behavior has an inverse association with firm performance in terms of risk management concepts that are related to engaging in more proactive behavior, which, in turn, lowers the risk to the firm's financial performance. Additionally, the type of firm significantly moderated the associations among risk perception, proactive behavior, and firm performance in terms of financial performance and risk management concepts. Managers working at firms positioned as below average target achievers tended to take more proactive actions than those who worked at above average target firms when the managers perceived a threat to the firm. Regarding the proactive behavior of managers working at firms with a formal risk management department in their organizational structure, these firms tended to have better performance in terms of financial performance and risk management concepts than firms which did not

have a formal risk management department. Finally, the organizational unit of the managers significantly moderated the associations among risk perception, proactive behavior, and firm performance in terms of financial performance and risk management concepts. The risk perception of managers who worked in line function units tended to inspire the managers to take more proactive measures than those who worked in staff function units. Consequently, the proactive behavior of managers working in line function units appears to help their firms to achieve higher levels of performance in terms of financial performance and risk management concepts than the proactive behaviors of managers who work in staff function units.

This research also sought to uncover the answers to research questions related to the following research objectives. The first research objective was to investigate the relationship between firm managers' risk perception and their proactive behavior in regard to a research question seeking to determine the effect of a manager's risk perception on their proactive behavior. The evidence strongly suggests that higher levels of perceived risk in a manager leads to them engaging in more proactive behavior with regard to carrying out their duties. Therefore, it is very important for employers to understand what they can do to promote employees becoming proactive workers and how they can encourage employees to perceive risks to the firm which will, in turn, influence the proactive behavior of their employees.

The second research objective was to investigate the relationship between the proactive behavior of managers and the firms' performance in terms of financial performance concepts (consisting of profitability, growth, and market value) and risks to firm financial performance (measured by using variation in profitability, growth, and market value) through answering a research question seeking what effect proactive behavior by employees, specifically managers, had on firm performance. With regard to proactive behavior's effect on firm performance, the data analysis strongly indicates that higher levels of proactive behavior by managers leads to increasing the level of firm performance in terms of financial performance concepts and lowering the level of risk to the firm's financial performance. In terms of management, human capital, employees of all organizational departments, are a very important factor for driving and running the business of a firm, which is a key component in the outcomes of the firm. At present, a firm's emphasis on the

characteristics and qualities of their workers, such as their educational levels, skills, or working behaviors, is reflected in employee performance and, eventually, in firm performance. Thus, firms should understand how to maintain stable behavior in regard to the level proactivity of their employees, as this will ultimately influence the firm's performance in terms of financial performance and risk management concepts.

The third research objective was to investigate whether the type of firm and the organizational units of the managers played a moderating role that affected risk perception's effect on proactive behavior by answering a research question about how the type of firm and the organizational unit of the managers moderated the effect of risk perception on proactive behavior. Regarding this question, evidence strongly suggests that managers who work at below average target firms and who work in line function units tend to take more proactive actions in their work when the perceived risks of the firm increase. There are reasons that the different type of firm and work function lead to different outcomes for the two groups. Managers positioned in below average target firms, sometimes, must struggle to survive and have to ensure that their employees perceive risks and take more proactive actions. Whereas, managers who work in line function units regularly work in, and are responsible for, the core operations of the business. Thus, line function managers tend to take more proactive actions in the due course of their work than managers who work in staff function units when they perceive risks to the firm.

The fourth, and final, research objective was to examine the moderating effect, if any, on the relationship between proactive behavior and a firms' performance by the type of firm and the organizational unit of a manager by exploring a research questions on how the type of firm (e.g. whether or not the firm has a formal risk management department) and the organizational unit (e.g. line function or staff function) of a manager moderated the effect of proactive behavior on firm performance in terms of financial performance and risk management concepts. The answers to these queries strongly suggests that firm performance, in terms of both financial performance and risk management concepts, is improved when managers who work at firms that have a formal risk management department and when managers work in line function units take more proactive actions when performing their work duties. Therefore, it is of the upmost importance for firms to understand the

benefits of establishing a risk management system in their business operating format because it can help firms mitigate their risks and increase their performance. This revelation is the most vital finding of this research which can be used to the advantage of firms which are faced with numerous, unexpected, and uncontrollable situations due to the rapidly changing business world.

Ultimately, it must be concluded that enhancing firm performance (in terms of profitability, growth, market value, and risk to financial performance) is clearly influenced by the work behavior of a firm's employees (proactive behavior), risk concepts (perceived risk), the type of firm (firm as indicated using the average returns on assets status and whether they have a formal risk management department), and the employee's work function. This tells us that knowledge about holistic risk management should be a high priority concern for firms and this knowledge should be applied to other concepts related to supporting effective business operations. Perceiving risk is the key success factor in finding solutions for the problems faced by a firm because it is the foundation that allows a firm to understand what the risks are, how severe the risks' effects could be, and how the firm may able to handle, mitigate, or avoid any adverse impact they pose. Moreover, firms will acquire benefits from enhancing proactive behavior in the workplace by their employees, such as being better prepared to avoid any chaos that could occur in the future, minimizing the impact of any adverse events by having been able to prepare for them in advance, and having the ability to recognize if something needs to be changed to improve over the time.

5.3 Contributions

This research's data and outcomes come from managers of firms listed on the Stock Exchange of Thailand (SET), the financial ratios of these firms based on information in the Thomson Reuters database for the 2013 – 2017 period, and established risk management department information based on the 2017 annual report of each firm. The contributions of this research can be separated into two main categories: academic and managerial.

5.3.1 Academic Contributions

In the context of academic contributions, this study's results provide confirmation of the managerial theories related to the phenomena explored in this study. Firstly, the protection motivation theory explains that fear of adverse consequences that people are able to discern prompts them to protect themselves. People, according to this theory, tend to guard themselves when anticipating negative consequences and try to avoid those consequences, believing that they can cope with them through preventive actions. Thus study's findings support this theory because the managers of the firms listed on the Stock Exchange of Thailand (SET) tend to take more proactive actions when they perceive higher levels of risk to their firm, such as the longer-term risk of welfare reform, the impact of cost inflation, the withdrawal of capital grants, and business continuity (Fraser et al., 2015). This indicates that protection motivation theory is valid as conceptualized and defined in this research.

Secondly, agency theory refers to the relationship between principals and agents and how the delegating of control affects performance. According to this theory, managers' actions affect the outcomes of the firm and, eventually, the firm's performance. This study confirms that the agency theory is still valid because it shows that the managers' proactive behavior results in increased performance and decreased risk for the firm.

Finally, the stakeholder theory provides an explanation of organizational management and business ethics in firm management. According to this theory, it is not only a firm's financial performance status that should emphasized, but a broader set of relevant outcomes which should also be considered by a firm. Risk to a firm's financial performance, a key aspect of the stakeholder theory, is one of the factors considered in this research. This study confirms that there are many perspectives related to business operations that are key success factors that help management to organize ideas, explain relationships, improve predictions, and provides a better understanding of the world affecting the firm's financial performance.

5.3.2 Managerial Contributions

In the context of managerial contributions, these results provide practical contributions for several aspects that would be useful to all levels of management.

Firstly, the research results provide the CEOs of firms listed the SET with information about the relationships and interactions between risk perception and proactive behavior and how they are affected by the work functions of their managers, the firm's financial status, and the type of firm in regard to firm performance in terms of financial performance and risk management concepts. They can use this information to assess their current performance and determine the issues that need to be addressed to improve financial performance and mitigate risks to the firm. For example, in respect to risk management for an organization, the process of risk management begins in a reactive mode, with a basic ability to respond to negative events (Fraser et al., 2015). It then progresses to being able to recover as quickly as possible form a potential interruption or adverse outcome, and then moves on to a more proactive mode with a focus on business continuity planning which, in turn, eventually leads to focusing on risk management functions related to revenue preservation. In addition, they can use this information to develop their human resource programs to improve employee knowledge about perceived risks to the firm, or make adjustments to the firm's organizational structure, such as considering establishing a risk management system for anticipating risks before they impact business operations, employees, or assets, in an attempt to protect revenue generation, gain a competitive advantage, and create value for shareholders. Thus, they would be able to prepare their personnel by improving their perceived risk capacity, which would improve recognition of risks to the firm, including strategic risks, operational risks, financial risks, and compliance risks. This will require a good knowledge of holistic risk management concepts to support developing the risk perception skills and knowledge of their personnel. Focusing on issues related to risk management, risk assessment, and risk theory should be an important aspect of the firm's training programs because this can help the firm, and its human resource officers, to improve the knowledge and skills of all their employees. Moreover, establishing a formal risk management department in an organizational structure helps support financial performance and mitigate operational risks. Moreover, this study contributes information that is needed to show how improving the proactive behavior of employees will eventually help improve the outcomes of the firm. It requires working behaviors (such as identifying opportunities, forming encouraging environments,

individual innovation, and seeking feedback) to effectively create advantageous alternatives. Firms should encourage proactive behavior in all of their employees by fostering this kind working behavior as part of their organizational culture and by supporting innovative ideas from employees in order to find new approaches for working and deriving proactive behaviors in the workplace, which will, in turn, become the key success factors for increasing the firm's performance.

Secondly, the research gives employees, especially managers, more guidance and a deeper understanding about perceived risk and proactive behavior. They will be guided in what they should do to perceive risks and take proactive actions in the work place to support firm's business operations. This knowledge will then form the critical foundation to enable them to work and act proactively, which will be of great benefit to the employees' self-development and improving the firm's performance. Managers should learn and understand why they need to be able to perceive the risks a firm faces, as well as how to perceive them. Managers should be equipped to understand and to perceive the problems facing a firm by developing their perceived risk skills to, for example, identify the links between firm's goals and objectives, identify risks to strategic objectives, determine the likelihood and potential impact of risks, and prioritize the risks to the firm. Additionally, managers who are responsible for decision making should take more proactive actions in their work as this will become the instrument that will develop their competency in the workplace and also provide opportunities to progress along their career path. Thus, human resource departments should make promoting knowledge about risk perception and proactive behavior a key part of their departmental focus due to the strong evidence of the positive affects they have on firm performance.

Thirdly, the research results provide information to help the stakeholders of firms listed on the SET, such as firm owners, boards of directors, and executive managers, determine the important issues and policies they should be concerned with. They can make changes in their short-term planning and adjust the focus toward proactive behavior training for all employees to enhance their risk perception skills. With regard to long term planning, they can make the decision to incorporate promoting risk perception and proactive behavior into the organizational culture. In practice, human capital policies are dependent on several different factors, such as top

management attention, organizational structure, capacity of the firm, and the quality of the current employees. Thus, in respect to quality improvement, it is not only how many workers or technologies you have, but how well you can organize things to achieve your goals.

Finally, the research results provide information to help the Stock Exchange of Thailand organization to campaign for and promote the benefits of risk management approaches for the firms listed on the SET. The key role that the SET plays in regulating its members are analyzing and monitoring the financial status and performance of the SET listed firms, as well ensuring that the firms are maintaining the requirements to continue their status of being a SET listed firm. With regard to the guidelines set by the Stock Exchange of Thailand, having a risk management paradigm can be beneficial for enhancing a firm's management system and promoting good corporate governance, both of which will increase the confidence of general investors in the stock market. Moreover, it could be used as an indicator for consideration when determining how to proceed with SET listed firms that are experiencing operational problems or lack the qualifications to remain a listed firm. Thus, in respect to the risk management of an organization, it is likely that those firms who implement systems that are consistent with standards which are maintained for weighing objectives, perceiving risks, defining risks, and, eventually, determining mitigation strategies and feedback.

5.4 Limitations of the Study

The main limitation of this study is the period of time for collecting data only being from January to February of 2019. This time period may not have been convenient for some firms to respond a questionnaire because of the short time frame and the structure of their business operations. Also, it would have been better if it could have been arranged for there to be a longer collection period to allow collecting data from larger firms. Additionally, because the data used in this study is cross-sectional data, it is difficult to determine the direction of causality between the constructs. The cross-sectional nature of the study also makes it impossible to track changes in the phenomenon over time. Therefore, using a longitudinal design to

collect the data could help the author to detect and track changes in the phenomenon of interest more accurately. Moreover, the variables in this study are comprised of several dimensions. With respect to proactive behavior, for example, it was represented by nine separate dimensions, making it difficult to know which dimension of the variable accounted for how much of the observed effect on the variable. Therefore, fact analysis technique should also be used to analyze how significant the influence of each dimension of the independent variables is on the dependent variables in the model.

5.5 Future Research

This research was aimed at understanding the influence of risk perception and proactive behavior on firm performance and focused on only the managerial level in the models. Thus, it is recommended to conduct similar research that includes all levels of employees in an organization to achieve a more extensive view and a deeper understanding of the phenomenon. Additionally, human resource management research related to other dimensions of employee behavior that influences firm performance should also be undertaken.

Another potential area of investigation is research on other dimensions of risk, such as risk control, risk taking, or risk avoiding, and other behaviors of managers engage, in to more clearly understand them in relation to firm performance. Moreover, conducting similar research regarding other concepts related to firm performance (such as balanced scorecards, key performance indicators, and key business metrics), other groups of firms in Thailand (such as firms listed on the Market for Alternative Investment (MAI), small and medium enterprises, and entrepreneurs), or firms in other countries, is recommended. Even though the research results provide evidence that having a risk management department is an essential factor for supporting firm performance, it is still a new concept for firms in Thailand. Future research could help clearly determine which moderating roles are associated with the various aspects of firm performance.

Finally, the influence of risk perception on firm performance should be investigated further. Thus, the mediating role played by proactive behavior on the relationship between risk perception and firm performance would be more thoroughly clarified and understood.

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APPENDICES

Appendix A

Questionnaire

The questionnaire was translated into a Thai language version for collecting data from the respondents who are managers of the SET listed firms, and then it was back translated to use in the statistical model. It can be described as two categories, English language and Thai language versions.

Appendix A.1: The Questionnaire Form for Respondents (English)

Appendix A.2: The Questionnaire Form for Respondents (Thai)

Appendix A.1: The Questionnaire Form for Respondents (English)

The Influence of Risk Perception and Proactive Behavior on Performance of Firms in the Stock Exchange of Thailand: The Moderating Roles of Organizational Units and Types of Firms

Dear Sir/Madam

The aim of this study is to examine the influence of risk perception and proactive behavior of managers on the performance of firms. The data were collected for this survey will be used for academic purpose only. Please assist by answering the following questions. All information will be kept confidential.

Thank you very much for your cooperation.
Sippavit Wongsuwatt

Please write down your answer or mark ❍ in the box which corresponds to your answer.

Part 1: Risk perception and proactive behavior

To what extent do you think about your ***"perceived organizational risks"***	**Strongly disagree**	**Disagree**	**Neither**	**Agree**	**Strongly agree**
1. I can assess a negative impact on the firm, when my firm has been using inappropriate business plans.	1	2	3	4	5
2. I am aware when my firm is unable to meet strategic objectives.	1	2	3	4	5
3. I can perceive the effects of a loss resulting caused by defects in the firm's business strategies.	1	2	3	4	5
4. I can recognize how the firm is faced with exposure of loss caused by improper business planning.	1	2	3	4	5
5. I can assess the potential for losses or failures linked to processes.	1	2	3	4	5
6. I can perceive obstacle to the firm's achieving goals caused by inadequate or failed people.	1	2	3	4	5
7. I can discern the potential of losses that are related to the business systems of my firm.	1	2	3	4	5

To what extent do you think about your ***"perceived organizational risks"***	**Strongly disagree**	**Disagree**	**Neither**	**Agree**	**Strongly agree**
8. I can assess the barriers to achieving the firm's goals caused by external events.	1	2	3	4	5
9. I am aware of the possibility of the firm defaulting on a financial commitment.	1	2	3	4	5
10. I can perceive financial conditions that may impair the firm's ability to achieve adequate returns.	1	2	3	4	5
11. I can assess if my firm that will be unable to acquire the cash required meet short or intermediate term obligations.	1	2	3	4	5
12. I can discern the inability of my firm to maintain an appropriate financial condition.	1	2	3	4	5
13. I can perceive the potential of losses and legal penalties due to failure to comply with laws or regulations.	1	2	3	4	5
14. I can assess the impact of losses when my firm fails to act in accordance with industry laws.	1	2	3	4	5
15. I can perceive if my firm may fail to remain within regulations.	1	2	3	4	5
16. I can assess the impact of losses caused by financial forfeitures and material losses.	1	2	3	4	5

To what extent do you think about your ***"behavior in working"***	**Strongly disagree**	**Disagree**	**Neither**	**Agree**	**Strongly agree**
1. I always capitalize on my strengths in my work.	1	2	3	4	5
2. I understand what I want to do better to improve	1	2	3	4	5
3. I constantly set my target to improve opportunities with promise.	1	2	3	4	5
4. I always learn by asking good questions.	1	2	3	4	5
5. I always shift my perspective in my work.	1	2	3	4	5
6. I am ready to help with changes in organization.	1	2	3	4	5
7. I think that my workplace should be a skeptical environment.	1	2	3	4	5

To what extent do you think about your ***"behavior in working"***	**Strongly disagree**	**Disagree**	**Neither**	**Agree**	**Strongly agree**
8. I think that my workplace should be a mutual-feedback environment.	1	2	3	4	5
9. In my workplace, individuals should be offered flexibility to alter their working styles.	1	2	3	4	5
10. I always find my role in working with co-workers.	1	2	3	4	5
11. I always adjust my work role if it could be better.	1	2	3	4	5
12. I always control my role to maintain relationship both inside and outside of the workplace.	1	2	3	4	5
13. I always make inquiries and monitor methods used to gain feedback.	1	2	3	4	5
14. I always consider how frequently I seek information from my subordinates.	1	2	3	4	5
15. I am always concerned with the timing of feedback seeking in my work.	1	2	3	4	5
16. I can always determine changes in patterns in the workplace.	1	2	3	4	5
17. I can always be the initiator of change in the workplace.	1	2	3	4	5
18. I always bring concepts or anxieties, explanations and chances together in methods that emphasize others' attention and invite accomplishment.	1	2	3	4	5
19. The workplace should allow employees a chance to fail doing new things.	1	2	3	4	5
20. I always give my subordinates a freedom of intelligence.	1	2	3	4	5
21. I always arrange for my team to have the resources to support innovative thinking.	1	2	3	4	5
22. I continuously learn and gain new skills.	1	2	3	4	5
23. I always consider emotions in my work, such as satisfaction or appreciation.	1	2	3	4	5
24. I always emphasize a good quality of life and work-life balance.	1	2	3	4	5
25. I always take time to refresh myself during a hard-working day.	1	2	3	4	5
26. I always learn how to relax.	1	2	3	4	5
27. I always try to use healthy responses to prepare for the next day.	1	2	3	4	5

Part 2: Personal Information

1. Gender

( ) Male ( ) Female

2. Age

( ) 18 – 24 years old ( ) 25 – 34 years old ( ) 35 – 44 years old

( ) 45 – 54 years old ( ) 55 – 64 years old ( ) 65 years or older

3. Education level

( ) Below Bachelor's degree ( ) Bachelor's degree ( ) Master's degree

( ) Doctoral degree

4. Faculty or major of study

( ) Finance ( ) Risk Management & Insurance ( ) Human Resources

( ) Marketing ( ) Engineering ( ) Science & Technology

( ) Computing & IT ( ) Sales ( ) Management

( ) Research & Analysis ( ) Distribution & Logistics ( ) Others

5. Organizational unit

( ) Line function (constituting the core operations of the corporations)

( ) Staff function (constituting non-operational, support or service functions)

6. Work experience with current firm ……years

7. Your month salary

( ) Below or equal 15,000 Baht ( ) 15,001 – 30,000 Baht ( ) 30,001 – 45,000 Baht

( ) 45,001 – 60,000 Baht ( ) Over 60,000 Baht

8. Name of your firm

……

Part 3: Recommendations

_____

_____

_____

_____

Thank you very much for your cooperation in answering this questionnaire

Appendix A.2: The Questionnaire Form for Respondents (Thai)

อิทธิพลของการรับรู้ความเสี่ยงและพฤติกรรมการทำงานต่อผลการดำเนินงานของบริษัทในตลาดหลักทรัพย์แห่งประเทศไทย
บทบาทของตัวแปรคั่นกลางโดยหน่วยงานและประเภทของบริษัท

เรียน ผู้จัดการ

วัตถุประสงค์ของการศึกษาในครั้งนี้ เพื่อศึกษาอิทธิพลของการรับรู้ความเสี่ยงและพฤติกรรมการทำงานของผู้จัดการที่มีต่อผลการดำเนินงานของบริษัท ผู้วิจัยหวังเป็นอย่างยิ่งว่าท่านจะให้ข้อมูลอย่างครบถ้วนและเป็นประโยชน์สำหรับการวิจัย ทั้งนี้ข้อมูลและความคิดเห็นของท่านจะถูกเก็บไว้เป็นความลับโดยผู้วิจัยจะใช้เพื่อประโยชน์ทางการวิจัยเท่านั้น

ผู้วิจัยขอขอบพระคุณท่านเป็นอย่างสูงที่สละเวลาอันมีค่าของท่านในการตอบแบบสอบถามชุดนี้

ด้วยความเคารพ

สิปปวิชญ์ วงศ์สุวัฒน์ (โทร 094-554988; อีเมล์ sippavitch.w@psu.ac.th)

<u>กรุณาให้ข้อมูลโดยวงกลม ❍ รอบคำตอบที่ท่านเลือก</u>

ส่วนที่ 1 การรับรู้ความเสี่ยงและพฤติกรรมการทำงาน

คุณคิดเห็นอย่างไรกับการรับรู้ความเสี่ยงองค์กรของคุณ	ไม่ใช่เลย	น้อย	ปานกลาง	มาก	ใช่ที่สุด
1. ฉันสามารถประเมินผลกระทบด้านลบของบริษัท เมื่อบริษัทของฉันดำเนินงานไม่เป็นไปตามแผนธุรกิจ	1	2	3	4	5
2. ฉันสามารถรู้ได้ หากบริษัทของฉันไม่สามารถที่จะบรรลุวัตถุประสงค์เชิงกลยุทธ์	1	2	3	4	5
3. ฉันสามารถรับรู้ผลกระทบของผลการสูญเสียที่มีสาเหตุมาจากความบกพร่องของกลยุทธ์ทางธุรกิจของบริษัท	1	2	3	4	5
4. ฉันสามารถรับรู้ได้ว่า บริษัทได้เผชิญกับความสูญเสียที่มีสาเหตุมาจากการวางแผนทางธุรกิจผิดพลาดอย่างไร	1	2	3	4	5
5. ฉันสามารถประเมินความเป็นไปได้สำหรับความสูญเสียหรือความล้มเหลวที่เกี่ยวข้องกับกระบวนการทำงาน	1	2	3	4	5
6. ฉันสามารถรับรู้อุปสรรคของเป้าหมายที่บริษัทกำหนดไว้ที่มีสาเหตุมาจากความไม่เพียงพอหรือความล้มเหลวของคน	1	2	3	4	5
7. ฉันสามารถมองเห็นศักยภาพของความสูญเสียซึ่งเกี่ยวข้องกับระบบการดำเนินธุรกิจของบริษัท	1	2	3	4	5

8. ฉันสามารถประเมินอุปสรรคในการดำเนินงานตามเป้าหมายของบริษัทที่มีสาเหตุมาจากเหตุการณ์ภายนอก	1	2	3	4	5
9. ฉันสามารถรับรู้ถึงความเป็นไปได้ของการผิดนัดชำระหนี้ตามข้อสัญญาทางการเงินของบริษัท	1	2	3	4	5
10. ฉันสามารถรับรู้สถานะทางการเงินของบริษัทซึ่งอาจจะส่งผลให้ความสามารถในการให้ผลตอบแทนลดลง	1	2	3	4	5
11. ฉันสามารถประเมินบริษัทของฉันได้ หากบริษัทไม่สามารถที่จะหาเงินสดที่จะต้องใช้สำหรับดำเนินการตามพันธะสัญญาในระยะสั้นได้	1	2	3	4	5
12. ฉันสามารถมองเห็น หากบริษัทไม่สามารถรักษาสถานะภาพทางการเงินที่เหมาะสมได้	1	2	3	4	5
13. ฉันสามารถรับรู้ศักยภาพของความสูญเสียและบทลงโทษทางกฎหมาย หากบริษัทไม่สามารถดำเนินงานภายใต้กฎหมายและระเบียบข้อบังคับ	1	2	3	4	5
14. ฉันสามารถประเมินผลกระทบของความสูญเสีย เมื่อบริษัทล้มเหลวในการดำเนินงานตามกฎหมายของอุตสาหกรรม	1	2	3	4	5
15. ฉันสามารถรับรู้ได้ หากบริษัทของฉันไม่สามารถธำรงไว้ซึ่งระเบียบข้อบังคับ	1	2	3	4	5
16. ฉันสามารถประเมินผลกระทบของความสูญเสียที่มีสาเหตุมาจากการริบเงินและการสูญเสียทรัพย์สินตามกฎหมาย	1	2	3	4	5
คุณคิดเห็นอย่างไรกับพฤติกรรมการทำงานของคุณ	**ไม่ใช่เลย**	**น้อย**	**ปานกลาง**	**มาก**	**ใช่ที่สุด**
1. ฉันมักจะใช้ประโยชน์จากจุดแข็งของฉันในการทำงาน	1	2	3	4	5
2. ฉันเข้าใจในสิ่งที่ฉันจะทำให้ดียิ่งกว่าเพื่อความก้าวหน้า	1	2	3	4	5
3. ฉันตั้งเป้าหมายของฉันอยู่ตลอดเวลาสำหรับโอกาสที่จะพัฒนาด้วยคำมั่นสัญญา	1	2	3	4	5
4. ฉันเรียนรู้ที่จะถามคำถามดีๆ อยู่เสมอ	1	2	3	4	5
5. ฉันมักจะเปลี่ยนมุมมองในการทำงานอยู่เสมอ	1	2	3	4	5
6. ฉันพร้อมที่จะช่วยเหลือและสนับสนุนการเปลี่ยนแปลงในองค์กรอยู่เสมอ	1	2	3	4	5
7. ฉันคิดว่าสถานที่ทำงานของฉันควรเป็นสภาพแวดล้อมที่มีความแปลกใหม่อยู่เสมอ	1	2	3	4	5
8. ฉันคิดว่าสถานที่ทำงานของฉันควรเป็นสภาพแวดล้อมที่มีข้อเสนอแนะร่วมกัน	1	2	3	4	5
9. ฉันคิดว่าสถานที่ทำงานของฉัน ควรให้อิสระกับบุคลในการเลือกรูปแบบการทำงานของตนเอง	1	2	3	4	5
10. ฉันแสวงหาบทบาทของฉันในการทำงานร่วมกับเพื่อนร่วมงานเสมอ	1	2	3	4	5
11. ฉันปรับเปลี่ยนบทบาทในการทำงานของฉันเสมอหากสิ่งนั้นจะทำให้ดียิ่งขึ้น	1	2	3	4	5

คุณคิดเห็นอย่างไรกับพฤติกรรมการทำงานของคุณ	ไม่ใช่เลย	น้อย	ปานกลาง	มาก	ใช่ที่สุด
12. ฉันจะตรึงบทบาทของฉันอยู่เสมอ เพื่อรักษาความสัมพันธ์ทั้งจากภายในและภายนอกสถานที่ทำงาน	1	2	3	4	5
13. ฉันมักจะสอบถามรายละเอียดเพิ่มเติมและตรวจสอบวิธีการที่ใช้เพื่อให้รู้ถึงข้อเสนอแนะต่างๆ	1	2	3	4	5
14. ฉันมักจะพิจารณาความถี่ที่ฉันขอข้อมูลจากผู้ใต้บังคับบัญชาว่ามากน้อยอย่างไร	1	2	3	4	5
15. ฉันมักจะตระหนักถึงช่วงเวลาในการหาข้อเสนอแนะในการทำงานอยู่เสมอ	1	2	3	4	5
16. ฉันมักจะกำหนดรูปแบบการเปลี่ยนแปลงในที่ทำงานอยู่เสมอ	1	2	3	4	5
17. ฉันมักจะเป็นผู้ที่ริเริ่มการเปลี่ยนแปลงในที่ทำงานอยู่เสมอ	1	2	3	4	5
18. ฉันมักจะนำแนวคิดหรือความวิตกกังวล การอธิบายและโอกาส มาใช้ร่วมกันซึ่งเป็นวิธีที่มุ่งเน้นความสนใจของผู้อื่นและเชิญชวนให้ประสบความสำเร็จ	1	2	3	4	5
19. ฉันคิดว่าในสถานที่ทำงาน ควรที่จะอนุญาตให้พนักงานมีโอกาสล้มเหลวในการทำสิ่งใหม่ๆ	1	2	3	4	5
20. ฉันมักจะให้ผู้ใต้บังคับบัญชาใช้สติปัญญาอย่างอิสระอยู่เสมอ	1	2	3	4	5
21. ฉันมักจะจัดเตรียมทรัพยากรให้กับทีมของฉันในการคิดนวัตกรรมใหม่ๆ	1	2	3	4	5
22. ฉันมักจะเรียนรู้และได้รับทักษะใหม่ๆ อย่างต่อเนื่อง	1	2	3	4	5
23. ฉันมักจะพิจารณาเกี่ยวกับอารมณ์ในการทำงาน เช่น ความพึงพอใจ การชื่นชม	1	2	3	4	5
24. ฉันมุ่งเน้นคุณภาพชีวิตที่ดีและสมดุลในชีวิตการทำงานอยู่เสมอ	1	2	3	4	5
25. ฉันมักจะใช้เวลาในการฟื้นฟูร่างกายในวันที่ต้องทำงานหนัก	1	2	3	4	5
26. ฉันมักจะเรียนรู้ทำอย่างไรให้ผ่อนคลายอยู่เสมอ	1	2	3	4	5
27. ฉันมักจะพัฒนาการตอบสนองต่อสุขภาพของฉันให้ดีขึ้นเพื่อเตรียมความพร้อมสำหรับวันถัดไป	1	2	3	4	5

ส่วนที่ 2 ข้อมูลส่วนบุคคล

1. เพศ

( ) ชาย ( ) หญิง

2. อายุ

( ) 18 – 24 ปี ( ) 25 – 34 ปี ( ) 35 – 44 ปี

( ) 45 – 54 ปี ( ) 55 – 64 ปี ( ) 65 ปีขึ้นไป

3. ระดับการศึกษา

( ) ต่ำกว่าปริญญาตรี ( ) ปริญญาตรี ( ) ปริญญาโท

( ) ปริญญาเอก

4. สาขาวิชาที่สำเร็จการศึกษา

( ) การเงิน ( ) การจัดการความเสี่ยงและประกันภัย ( ) ทรัพยากรมนุษย์

( ) การตลาด ( ) วิศวกรรม ( ) วิทยาศาสตร์และเทคโนโลยี

( ) คอมพิวเตอร์และสารสนเทศ ( ) การขาย ( ) การจัดการ

( ) วิจัยและการวิเคราะห์ ( ) โลจิสติกส์ ( ) อื่น ๆ

5. หน่วยองค์การ (สายงาน)

( ) ส่วนงานหลัก (เกี่ยวข้องการดำเนินงานหลักของบริษัท เช่น ส่วนงานการผลิต)

( ) ส่วนงานสนับสนุน (เกี่ยวข้องกับส่วนงานสนับสนุนของบริษัท เช่น ส่วนงานบุคคล)

6. ประสบการทำงานกับบริษัทปัจจุบัน .....ปี

7. เงินเดือน

( ) ต่ำกว่าหรือเท่ากับ 15,000 บาท ( ) 15,001 – 30,000 บาท ( ) 30,001 – 45,000 บาท

( ) 45,001 – 60,000 บาท ( ) สูงกว่า 60,000 บาท

8. ชื่อบริษัทที่คุณทำงานอยู่ .....

ส่วนที่ 3 ข้อเสนอแนะ

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ขอขอบพระคุณท่านเป็นอย่างสูงที่สละเวลาอันมีค่าของท่านในการตอบแบบสอบถามชุดนี้

BIOGRAPHY

NAME	Sippavit Wongsuwatt
ACADEMIC BACKGROUND	Master of Science (Applied Statistics and Information Technology) National Institute of Development Administration, 2012 Bachelor of Business Administration (Insurance) Prince of Songkla University, 2008
EXPERIENCES	Lecturer, Insurance and Risk Management Faculty of Commerce and Management Prince of Songkla University, Trang Campus Trang Province, Thailand