THE INFLUENCE OF RISK PERCEPTION AND PROACTIVE BEHAVIOR ON PERFORMANCEOF FIRMS: THE MODERATING ROLES OF ORGANIZATIONAL UNITS AND TYPES OF FIRMS

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Abstract

Research on the role of risk perception and proactive behavior on firm performance has gained more importance, but little is known about the types of firm and different roles of managers that might influence the outcomes of firm performance when they perceive risk and take proactive actions. This study aims to investigate the effects of firms' perceived risk on managers and their proactive behaviors and the 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 in the SET (The Stock Exchange of Thailand) was collected. Results from ordinary least squares regression found a significant associations among risk perception, proactive behavior, and firm performance. These findings suggest that perceived risk tends to increase proactive behavior in managers who work at below average target firms and work in line function unit and that 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 a formal risk management systems will enhance firm performance in terms of financial performance and risk management concepts.

Keywords: Risk perception, Proactive behavior, Firm performance, Types of firm, Organizational units

1. INTRODUCTION

Risk perception, which is presently one of the tool in managing risk to the business, is still the new concept of firms in Thailand for the holistically risk management. What the consequences are if firms do not perceive their risks adequately and promptly is an issue that has not been popular in the past due to the knowledge of enterprise risk management 10 or 20 years ago focus on the actions which are response to what has just happened (Fraser, Simkins, & Narvaez, 2014, p. 628). Thai firms have largely ignored risk management and operate their businesses in a rather simple way (Stiglitz, 2001). Thus, the key problem of firms is that while most of firms focused on efforts to improve production efficiency, they downplay the downside risks of business operations. Presently, firms use more complicated operations and face more complex situations, in conducting their business, such as multifunctional processes in product, manufacturing and collaborative strategies when encountering competitors. Many of the factors influencing these changes in firm's operations are related to changes in technology, innovations, competitors, and external factors. It is difficult for firms to manage risks without accurate information about their risks. If firms do not perceive about the cause of the problems and its consequences, they need to cope with several types of risk, it becomes risk factor endangering firm performance improvement. Moreover, if firms face problems related to employees' ability to perceive risks that are directly related to the firm's operation which leads to risks going undetected. 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. 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.

One significant component for managing risks that can help firms recognize risks and their impact begins with risk perception. When firms can perceive risks well, then they may define methods to manage risks effectively (Sjöberg, Moen, & Rundmo, 2004). In terms of business, not only should business owners know what types of risks impact business, but all employees in an organization have to perceive these risks and make the correct choices to manage them. In addition, employees play a key role in meeting unforeseen occurrences for a firm and finding a solution to the problem, especially managers who face the risks and must make decisions immediately, are one of key success factors in driving business to achieve goals (Rosemann & vom Brocke, 2015). Wilde, Robertson, and Pless (2002) argue that simply a person who does not have sufficient ability, knowledge, or intend to change their behavior cannot keep risk at stable level and may influence a managers' behavior in decision making.

The first objective of this research is to investigate the relationship between risk perception and proactive behavior. The second objective is to investigate the relationship between proactive behavior and firms' performance in terms of financial performance (consisting of profitability, growth, and market value) and risks to firm performance (measured by using the variation of financial performance). Additionally, the research specifically focused on the organizational role of the unit and type of firms. The organizational role of the units were divided into two categories: line function manger and staff function manger. On the other hand, the type of firm was categorized based on two aspects: (1) whether firms between positioned above and below average target in variance of Return on Assets (ROA) for the industry, and (2) whether or not the firms had established a formal risk management department in their organizational structure.

2. LITERATURE REVIEW

The association between working behavior and firm performance in this study are based on two main perspectives that refer to the effect of preventive actions on the working behavior of employees and the effect of the employee's behavior on firm performance. The former is related to protection motivation theory, which was initially established to help elucidate fear appeals that represented people under this theory as protecting themselves (Rogers, 1975). There are four elements, including 1) perceived severity of a threatening event, 2) perceived probability of the occurrence, 3) perceived efficacy of the recommended preventive behavior, and 4) perceived self-efficacy (Bandura, 2000). People, according to this theory, tend to guard themselves when anticipating a negative consequence and shy away from it with the feeling that they can cope with it by employing preventive actions. The latter is the agency theory, which refers to the relationship between principals and agents for delegating of control and is concerned with undertaking problems by managing the relationship between the principal and the agents caused by unaligned goals or different levels of aversion to risk (Ross, 1973). An agent is a person who acts on behalf of the firm owner. Thus, the firm owner delegates decision making authority to the agent under unexpected conditions that may directly impact firm performance. The key support role of managers can be represented in the effect of their behaviors on firm performance. Jensen and Meckling (1976) stated that the best firms organize the relationship between firm owners, who are the principals responsible for determining work roles, and their workers, who are the agents responsible for performing work or making decisions on behalf of the principal. Thus, protection motivation theory was used to describe the actions taken by managers when they seek to prevent negative consequences from risks to their firm, and agency theory was used to explain why manager behaviors influence firm performance.

2.1 Risk Perception

Risk perception involves the major associations made when individuals have awareness of various hazards (Adger, Quinn, Lorenzoni, & Murphy, 2016; Lee, Markowitz, Howe, Ko, & Leiserowitz, 2015). Furthermore, risk perception are included in the likelihood estimation and probability assessment of negative outcome consequences. In terms of this study, risk perception is the recognition of managerial staffs, who are directly responsible for perceiving risks, to discern, be aware of, concerned about, assess, or estimate the negative consequence of a risk that may affect a firm. In particular, the ability of managers to perceive four main types of risk (including strategic risk, operational risk, financial risk, and compliance risk) are emphasized in this study because they are general risk factors for all firms.

2.2 Proactive Behavior

Proactive behavior, as stated by Crant (2000), is complicated by multiple causational phenomena that are reasonably essential for the consequences on the individual and firm. There are several approaches for performing a proactivity study having a common thread, and the initiative is form the action-oriented toward the organizational behaviors (Phipps, Prieto, & Deis, 2015; Schmitt, Den Hartog, & Belschak, 2016). From this perspective, employees are taking an active role in their work approach to form favorable conditions and create situations (DeVaney, 2015). Proactive people actively search for information and chances for improvement, and will not passively wait for them to appear (Gulyani & Bhatnagar, 2017; Hwang, Al-Arabiat, Shin, & Lee, 2016; Jiang & Gu, 2015). In terms of employee actions, proactive behavior is the actions taken by employees actively working to create preferred conditions for career progression, which is separated into two broad categories. Firstly, there are general actions comprised identifying opportunities, challenging the status quo, and forming favorable conditions that can be seen in any work-related situation (Crant, 2000). Lastly, there are context-specific behaviors, or particularly proactive behaviors, that take place in limited domains and consist of feedback seeking, innovation, comprised proactive socialization, issue selling, coping with stress, and career management.

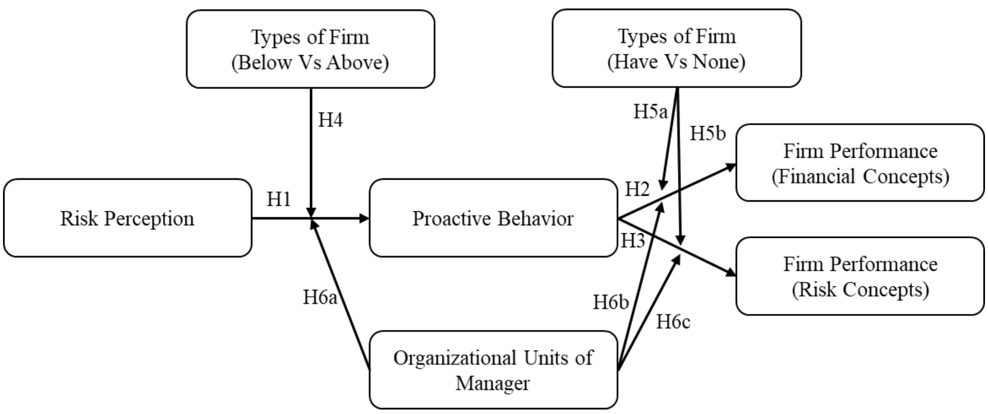
2.3 Firm Performance in Terms of Financial Performance and Risk Management Concepts

The concept of firm performance depends on determining which type of firm it is based on the evaluation of several aspects of the firms' business operations and outcomes (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). In this study, measuring the performance of the listed firms listed on SET was divided into three categories that consisted of 1) profitability performance, used to measure the past ability to generate returns (Miller, Washburn, & Glick, 2013), 2) growth performance, used to measure the past ability to increase a firms' size, and 3) market value, used to measure the expectation of a firms' future performance (Srinivasan & Hanssens, 2009). In previous research, measuring risk related to the firms' returns have defined risk as an unpredictable consequence on the firm's revenues (Dewan & Ren, 2011). Based on risk management concepts, firm performance was measured by using volatility and uncertainty, such as firm's return on assets (ROA), return on equity (ROE), or return on investment (ROI) (Orlitzky & Benjamin, 2001). In this study, the researchers focus on the variance of financial ratios to measure risk to firm performance in terms of financial concepts (Grafton, Lillis, & Widener, 2010; Kraus, Rigtering, Hughes, & Hosman, 2012).

2.4 Research Framework

The conceptual model in this study was developed by associating relationships as the follow: firstly, the influences of risk perception on proactive behavior; secondly, the influences of proactive behavior on firm performance in both financial performance and risk management concepts; thirdly, the occurrence of moderating types of firm and organizational units of management on the primary relationships among risk perception, proactive behavior, and firm performance, as shown in figure 1.

Figure 1
Research Framework



2.5 Hypotheses Development

2.5.1 Risk Perception and Proactive Behavior

According to the Protection Motivation theory, people tend to take action to protect themselves from threatening events when they perceive perils or risks that might have the potential to cause undesirable consequences. Duarte (2011) stated that people tend to engage in certain proactive behaviors after estimating the social costs and other risks. Managers who are responsible for tasks and undesirable occurrences that might happen 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: Risk perception will be positively associated with proactive behavior.

2.5.2 Proactive Behavior and Firm Performance

Based on proactive behavior perspective, employees who work with a consistent behavior can lead to better performance by the firm (Crant, 2000; Frese & Fay, 2001). Proactivity may facilitate firm performance by inspiring firm stakeholders to foster social, financial, and political proactivity in demonstrating the proficient performance of employees. When managers exhibit more proactive behaviors, they will enhance and support the firm's operations and, eventually, tend improve the firm's performance in terms of profitability, growth, and market value. Moreover, they will play a part in mitigating the firm's risks. The relationship between proactivity and firm performance is one of the issues examined in this study. Thus, the following hypotheses are presented:

Hypothesis 2: Proactive behavior will be positively associated with the firms' performance in terms of financial performance concepts.

Hypothesis 3: Proactive behavior will be negatively associated with risks to the firms' performance in terms of financial performance concepts.

2.5.3 Moderating Roles of Types of Firm and Organizational Unit of the Manager

Several previous studies linked the differences in firms as a moderator that affected the main relationships. For example, in studies on product innovation and quality, the relationship was moderated by firm size (Koufteros, Cheng, & Lai, 2007), relationship between board characteristics and firm innovation was contingent upon firm size (Zona, Zattoni, & Minichilli, 2013), or the relationship between firm alliance portfolios and shareholder returns was moderated by portfolio structure and firm-level uncertainty (Mouri, Sarkar, & Frye, 2012). In this study, the differences between firms will focus on the firm's conditions based on the prospect theory, which refers to risk taking firms as those operating below the average target and risk avoiding firms as those operating above average target as indicated by the risk and return of ROA. Because of financial performance pressures, managers who work at firms positioned below average target on ROA will engage in more proactive behavior to enhance the firm's performance when they perceive risks. Thus, the following hypotheses are presented:

Hypothesis 4: The positive relationship between risk perception and proactive behavior will be stronger for managers who work at firms positioned below average target than for those which are positioned above average target.

Another type of firm refers to the organizational structure related to employee behavior related to working, firm generation, development, and implementation of new ideas (Damanpour, 1991), and characteristics of firm structure, such as formalization, centralization, and specialization. When functioning in different structures, firms will operate business differently and generate different outcomes. Some previous research on firm risk management by Pagach and Warr (2011) referred to the positive influence of hiring a Chief Risk Officer

(CRO) on the firm's performance. Hiring a CRO infers the firm is paying attention to risk management and represents different types of firms that focused on integrating risk management units into their organizational structure. Firms that established risk management departments in their organizational structure may have better business performance and a lower level of risk when their managers take proactive actions. Thus, the following hypotheses are presented:

Hypothesis 5_a*:* The positive relationship between proactive behavior and firms' performance, in terms of financial performance concepts, will be stronger for firms with a formal risk management departments than for those without a formal risk management department in their organizational structure.

Hypothesis 5_b*:* The negative relationship between proactive behavior and risks to the firms' performance, in terms of financial performance concepts, will be stronger for firms with a formal risk management departments than for those without a formal risk management departments in their organizational structure.

The other moderating effects in this study emphasized the differences in the organizational units of employees related to job characteristics, tasks, and responsibilities. A study revealed evidence that the relationship between climate perceptions and subunit effectiveness was moderated by whether the task type and the effect of task were referred to as routine or non-routine at the individual level (Schmutz, Hoffmann, Heimberg, & Manser, 2015). In this study, manager roles refers to the differences in organizational units between line functional working and support functional working. Managers, who work in line functional units tend to be more proactive when they perceive risks to their firm than those who work in support functions. In addition, the nature of proactive managers will cause them think about and consider the future, and they will take make decisions and take action to prevent problems, rather than waiting for them to happen and then coping with them. Firm performance should improve when managers working in line functional units take proactive actions when compared to managers working in support units. Moreover, such actions by frontline managers should lower the risk to firm performance, as well. Thus, the following hypotheses are presented:

Hypothesis 6_a*:* The positive relationship between risk perception and proactive behavior will be stronger for managers who work in line function units compared to those working in support function units.

Hypothesis 6_b*:* The positive relationship between proactive behavior and a firms' performance, in terms of financial performance concepts, will be stronger for managers who work in line function units compared to those working in support function units.

Hypothesis 6_c*:* The negative relationship between proactive behavior and risks to a firms' performance, in terms of financial performance concepts, will be stronger for managers who work in line function units compares to those working in support function units.

3. METHODOLOGY

3.1 Research design and units of analysis

The research objective of this study is to investigate the effects of firms' perceived risk by their managers on their proactive behaviors and, eventually, their proactive actions on firm performance. Four hundred and sixty-one firms listed s 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 Samples and procedures

In terms of primary data, the participants for this research were managers working for firms listed on the SET. There were 210 firms used to determine the minimize sample size with a 95% confidence level using Taro Yamane's sample selection formula (Yamane, 1973). Mixed probability sampling methods were used to collect the data, including stratified sampling techniques and simple random sampling techniques. The stratified random sampling method was utilizes to collect the sample by randomly selecting firms according to the percentage of each industry. Then, firms were randomly selected from two types of firms in terms of ROA, based on whether the firms were positioned above or below average target. Next, each selected firm provided at least 2 managers, one working in a line function and another one working in a support function units, as the 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 number of respondents should be as large as possible following Marshall (1996) assertion that the possibility of a sampling error will be smaller when collecting a larger sample size. In total, 840 sets of questionnaires were distributed to these firms. The respondents participated voluntarily and anonymously. Of this total, 488 surveys were completely filled out, yielding a 58 percent response rate.

3.3 Measures

Risk perception was measured by asking the respondents to indicate the level of four types of perceived risk perception that may affect their organization (strategic risk, operational risk, financial risk, and compliance risk) (Adger et al., 2016; Boermans & Willebrands, 2017; Peters, Burraston, & Mertz, 2004; Sjöberg, 2000). These items were scored on a five-point rating scale that represented the characteristics of respondents in perceiving their organizational risks, ranging from 1 (Strongly disagree) to 5 (Strongly agree). This variable was utilized for all hypotheses testing as an interval scale derived from primary data.

Proactive behavior was measured by nine items asking the respondents to indicate behavior on their job. This measure is adapted from a study by (Buys et al., 2017; Crant, 2000). These items were scored on a five-point rating scale that represented the respondents work behaviors, ranging from 1 (Strongly disagree) to 5 (Strongly agree). This variable was utilized for all hypotheses testing as an interval scale derived from primary data.

Firm performance in terms of financial and risk management concepts was measured by using the financial information in the annual report of each firm to indicate firm's performance in terms of both financial and risk concepts over a five-year period (2013 – 2017) . This measure consisted of four items including 1) the profitability performance (including ROA, ROE, ROI, ROS, and EBITDA), 2) the growth performance (including Net Profit Growth Rate and Sales Growth Rate), 3) the market value performance (including Price-to-Earnings Ratio, Market-to-Book Ratio, and Cash Flow per Share), and 4) the risks to financial performance (including variance of profitability, variance of growth, and variance of market value). These items were calculated using the average of each ratio and the average of the total ratios for each concept (including profitability, growth, market value, and risk of firm performance) in the model. Before putting the secondary data into the model, data screening process was performed in order to ensure that this financial data was useable, reliable, and valid for hypothesis testing as the follows. First, Outlier financial data were deleted to remove the extreme values of each financial ratio. Second, available financial ratio for each firm listed on the SET was examined to unsure that at least four of five-year period was revealed. Finally, all financial information of each firm will be matched with the questionnaire data from the respondents of that firm. This variable was utilized for all hypotheses testing as a ratio scale derived from secondary data.

Control variables were adapted from a study by Huibregtse (2014) that consisted of the gender, age, educational level, educational major, organizational unit, current work experience, and salary of the participants. Age and current work experience were measured in years. Gender was measured as a dummy variable (male was coded one, female was coded two). Organizational unit was measured as a dummy variable (line function was coded zero, support-staff function was coded one). Education and salaries were measured as ordinal scales. Educational major was measured as nominal scales. In addition, the researcher added firm of respondents in this study to be the link between primary data collected from managers and secondary data collected from the firms' annual reports.

3.4 Estimation method

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 risk perception and proactive behavior, the relationship between proactive behavior and firm performance in terms of financial performance concepts, and the relationship between proactive behavior and firm performance in terms of risk management concepts. In addition, OLS regression allows researchers to estimate the moderating effects of organizational units and types of firms on the main relationship between the independent variable and dependent variables.

4. RESULTS

4.1 Demographic Information

Of the 488 respondents, 292 (59.8%) were male and 196 (40.2%) were female. The majority of respondents were aged 35 to 44 and 45 to 54 years old (37.5% and 34.8%) respectively. Most respondents possessed a master's degree (56.6%), 209 respondents (42.8%) a bachelor's degree, and only 3 (0.6%) a doctoral degree. The majority of respondents graduated in management (19.7%), science and technology (14.1%), or engineering (12.1%). The average work experience for the current firm was 11 years. Most respondents had an average monthly salary of 45,001 to 60,000 baht (47.5%) or over 60,000 baht (40.2%). Two-hundred and sixty-three respondents (53.9%) worked in line functional units and 225 respondents (46.1%) worked in staff functional units. In terms of type of firm, 249 respondents (51.0%) worked at above average target firms and 239 respondents (49.0%) worked at below average target firms, while 273 respondents (55.9%) worked at non-risk management department firms and 215 respondents (44.1%) worked at firms with established risk management departments.

4.2 Scales validation

Before estimating the Ordinal Least Squares (OLS) model, the researchers executed a validity check for the risk perception and proactive behavior variables, both of which exceeded minimum convergent validity (0.5) as suggested by Var (1998). Then, we executed a reliability analysis by evaluating Cronbach's alpha (α) coefficient. The results showed that all reliability coefficients for both risk perception ($\alpha = 0.979$; 16 items) and proactive behavior ($\alpha = 0.986$; 27 items) variables exceeded 0.7 as recommended by Windle, Bennett, and Noyes (2011). Finally, we executed a variance inflation factor (VIF) analysis as recommended by Petter, Straub, and Rai (2007) to check for multicollinearity, which should be lower than 10. The VIF results showed that all indicators in the model ranged from 1.025 to 3.655, which was lower than the maximum threshold.

4.3 Hypotheses testing

The results from the OLS analysis are shown in Table 2. Hypothesis 1 predicts a positive relationship between a firms' perceived risk by managers and their proactive behaviors. The OLS analysis confirms a positive, and strong, association ($\beta = .706$, $p = .000$). Thus, Hypothesis 1 is statistically supported. Hypothesis 2 predicts a positive relationship between proactive behavior and the firms' performance in terms of financial performance concepts. The result shows that they are positive and statistically related ($\beta = .223$; $p = .000$). Thus, hypothesis 2 is supported.

Hypothesis 3 predicts a negative relationship between proactive behavior and firms' performance in terms of risk management concepts. The OLS analysis confirms a negative, and strong, association ($\beta = -.335$, $p = .000$). Thus, Hypothesis 3 is strongly supported. Hypothesis 4 predicted that the type of firm moderates the relationship between risk perception and proactive behavior. The results show that the moderating role of the type of firm is positively and statistically related to the firms' manager proactive behavior ($\beta = .162$; $p = .000$). It means that this positive relationship is stronger for managers who work at below average firms. Thus, hypothesis 4 is supported.

Hypothesis 5_a predicts a positive relationship between proactive behavior and firms' performance in terms of financial performance concepts that will be stronger for firms with a formal risk management departments than for those without a formal risk management departments. The results show that the moderating role of the type of firm is positively and statistically related to firms' performance in terms of financial performance concepts ($\beta = .113$; $p = .000$). This means that this positive relationship is stronger for firms with a formal risk management departments. Thus, hypothesis 5_a is supported. Hypothesis 5_b predicts a negative relationship between proactive behavior and firms' performance in terms of risk management concepts that will be stronger for firms with a formal risk management department than for those without a formal risk management departments. The results show that the moderating role of this firm type is negatively and statistically related to firms' performance in terms of risk management concepts ($\beta = -.160$; $p = .000$). It means that this negative relationship is stronger for firms with a formal risk management department. Thus, hypothesis 5_b is supported.

Hypothesis 6_a predicts that the organizational unit moderates the relationship between risk perception and proactive behavior. The results show that the moderating role of organizational unit is positive and statistically significant for firms' managers' proactive behavior ($\beta = .182$; $p = .000$). It mean that this positive relationship is stronger for managers working in line function than those working in support function units. Thus, hypothesis 6_a is supported. Hypothesis 6_b predicts a positive relationship between firms' managers' proactive behavior and the firms' performance in terms of financial performance concepts that will be stronger for managers working in line function than those working in support function units. The results show that the moderating role of organizational unit is positive and statistically significant for firms' performance in terms of financial performance concepts ($\beta = .070$; $p = .014$). This means that the positive relationship is stronger for managers working in line function units. Thus, hypothesis 6_b is supported. Hypothesis 6_c predicts a negative relationship between proactive behavior and firms' performance in terms of risk management concepts which will be stronger for managers working in line function units. The result shows that the relationship is negatively and statistically significant ($\beta = -.156$; $p = .016$). This means that the negative relationship is stronger for managers working in line function units. Thus, hypothesis 6_c is supported.

Finally, the significant relationships between the control variables and dependent variables found the following: Proactive behavior of managers is negatively associated with the female dummy variable ($\beta = -.074$; $p = .030$) and positively associated with educational level ($\beta = .077$; $p = .036$). The firms' performance in terms of risk management concepts is positively associated with the type of firm (Have RMD) dummy variable ($\beta = .144$; $p = .020$).

5. DISCUSSION

This research aimed to investigate the effects of firms' managers' perceived risk on their proactive behaviors and firms' manager proactive behavior effects on firm performance, with an emphasis on the moderating roles of the types of firm and the organizational unit of the managers. Regarding the first main effect of perceived risk on proactive behavior, evidence strongly suggests that the higher a firms' perceived risk is, the more proactive managers' behavior becomes because managers tend to take proactive action when they perceive potential negative effects on their firms' operations from a risk. Thus, this result supports the protection motivation phenomenon and previous literature regarding the positive influences of risk perception on proactive behavior (Bubeck, Botzen, & Aerts, 2012; Rogers, 1975). In addition, the analysis of the moderating effects found ample evidence that the role risk perception plays in proactive behavior is significantly contingent on both the type of firm and the organizational unit of the manager. The findings suggest that managers who work at below average target firms, in terms of ROA, take more proactive actions and when the perceived risk of their firm increases, they tend to engage in more proactive behaviors. Moreover, managers who work in line function units are more likely to take proactive actions to counter any perceive more risks. With regard to the second main effect of proactive behavior on firm performance, evidence strongly suggests that higher levels of proactive behavior by managers leads to better firm performance in terms of financial concepts. Because the key role managers play in firm performance is reflected by their behaviors. Thus, these results support the agency theory, which suggests that an agent is a person who acts on behalf of the firm owner. Moreover, 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 studied by González-Benito and González-Benito (2005), that tracked the positive relationship between environmental proactivity and business performance. Additionally, the role proactive behavior of managers plays in firm performance is significantly affected by the moderating roles of both the type of firm and the organizational unit of manager. 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. Moreover, managers who work in line function units have more influence on the level of firm performance when they engage in more proactive behaviors.

Regarding the last main effect of proactive behavior on firm performance, in terms of risk management concepts, evidence strongly suggests that greater amounts of proactive behavior by managers leads to improving firm performance in terms of lowering risk concepts. Because the proactive behaviors of managers enhance and support the operations of the firm, they eventually become part mitigating the firm's risks. Thus, these results support the previous literature regarding the positive influence of proactive behavior on firm performance in terms of reducing risk (Yang & Chau, 2016). In addition, the roles of the proactive behavior of managers on firm performance with regard to risk concepts are significantly affected by the moderating roles of both the type of firm and the organizational unit of manager. The findings suggest that managers who work at firms with a formal risk management department will have greater influence on their firm's performance in terms of risk management concepts, and, when managers engage in higher levels of proactive behaviors, firms will have lower risks related to their financial performance. Moreover, managers who work in line function units have more influence on improving the firm's risk management performance when they take more proactive actions, as well.

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. Then, firms may establish proactive behavior as a part of their organizational culture and core business operational policy which taking proactive behavior a step further is to form business operating model in a way that enables their employees to find and anticipate problems and risks to the firm.

Table 1

Regression Results

Independent Variables	**Dependent Variables:** Proactive Behavior			Firm Performance (Financial Concepts)			Firm Performance (Risk Concepts)		
	H_1	H_{6a}	H_4	H_2	H_{5a}	H_{6b}	H_3	H_{5b}	H_{6c}
Main Effects									
Constant	**.698*** **	**1.089*** **	**1.011*** **	**-.578*** **	**-.369** **	**-.363***	**1.958*** **	**1.662*** **	**1.473*** **
Risk Perception	**.706*** **	**.601*** **	**.623*** **						
Proactive Behavior				**.223*** **	**.173*** **	**.164*** **	**-.335*** **	**-.265*** **	**-.203** **
Organizational Unit (Line=1, Staff=0)	.068	**.079***	**.087***	-.030	-.040	-.024	-.001	.013	-.016
Types of Firm 1 (Below=1)	.025	.040	.025						
Types of Firm 2 (Have RMD=1)				.052	.052	.048	**.144***	**.145***	**.153***
Gender (male=1)	**-.074***	**-.068***	**-.070***	.002	.004	.003	-.031	-.033	-.032
Age	.021	.023	.019	.010	.011	.013	-.018	-.021	-.025
Educational Level	**.077***	**.090***	**.079***	.041	.032	.049	-.021	-.009	-.040
Educational Major	-.011	**-.015** **	**-.013***	.005	.006	.003	.017	.015	.022
Current Work Experience	.000	.000	.000	.004	.004	.004	-.002	-.002	-.002
Salary	.064	.059	**.066***	-.041	-.042	-.043	-.042	-.041	-.036
Interaction Effects									
RP(Z) x OU(Line)		**.182*** **							
RP(Z) x TF1(Below)			**.162*** **						
PB(Z) x TF2(Have)					**.113*** **			**-.160** **	
PB(Z) x OU(Line)						**.070***			**-.156***
R-Square	.823	.834	.832	.314	.339	.322	.196	.207	.206
Adjusted R-Square	.820	.831	.829	.301	.325	.308	.181	.191	.189
Number of observations	488 Respondents								

***0.1% significant level; **1% significant level;*5% significant level

6. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, our findings reveal that risk perception under protection motivation theory is a significant factor in enhancing the proactive behavior of employees in the workplace and in supporting firm performance in terms of both financial and risk concepts. It also depends on how firms use perceived risks in their businesses operational and organizational structures. In terms of moderating effects, the differences in the managers' roles, in relation line function and support function units, influences the relationships between risk perception, proactive behavior, and firm performance. Additionally, establishing a formal risk management department in the organizational structure enhances firm financial performance and the ability to mitigate risks to the firm's financial performance.

Thus, this result, evidence strongly suggests 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. Risk management discipline enhances that the firm has to practice and create an integral part of the overall business strategy because it cannot be defined in a day and cannot be performed in isolation. So, risk management should be a continuous process until it becomes an integral part of organization's risk culture.

Despite the interesting findings, there are several weaknesses that need to be discussed. First, the data used in this study is cross-sectional. Therefore, it is difficult to justify the direction of causality between constructs. Also using a longitudinal design to collect the data would help the author to track changes in the phenomenon of interest more accurately. Second, the sample in this study only included managers. Using a wider variety of respondents would allow attaining a deeper understanding of related employee behaviors.

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