

**PROACTIVE INTERNAL AUDIT STRATEGY AND  
FIRM PERFORMANCE: EMPIRICAL EVIDENCE  
FROM THAI-LISTED FIRMS**

**TAKAN CHATIWONG**

**A dissertation submitted in partial fulfillment of the requirements for  
the degree of Doctor of Philosophy in Accounting  
at Maharakham University**

**May 2016**

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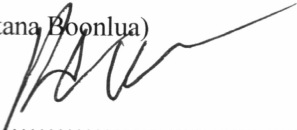


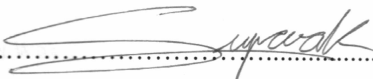


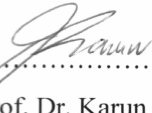
The examining committee has unanimously approved this dissertation, submitted by Mr. Takan Chatiwong, as a partial fulfillment of the requirements for the degree of Doctor of Philosophy in Accounting at Mahasarakham University.


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Takan Chatiwong



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### **ABSTRACT**

In the past decades, although several attempts have been made to continuously improve the quality of audit instruments, frauds and corruption still occur. Some events bring about a financial crisis that causes a tremendous effect on the world economy or creates the conditions for a black swan type of events. To reduce such problem, proactive internal audit strategy is considered as a powerful instrument in detecting and managing mistreatment behavior. At the same time, it can improve internal audit function quality and build the competitive advantage that leads an organization to sustainable goal success in all situations.

Dynamic capability theory provides a coherent framework to explain the proactive internal audit strategy - its consequences relationships. In the meantime, contingency theory describes the relationships between antecedent variables and proactive internal audit strategy as well as stakeholder expectation that serve as the moderating effects of such relationships. A questionnaire was used as the instrument for collecting data from chief internal audit executive, which a sample of 113 (20.66%) Thai-listed firms were collected for hypotheses-testing through Ordinary Least Squares (OLS) regression.

The overall results indicate that internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have a significant impact on its consequences which are stakeholder credibility and firm performance; whereas, the antecedents have a significant effect on all five dimension of proactive internal audit strategy. Additionally, stakeholder expectation has a significantly



moderating effect on the relationships among competitive intensity, environment complexity and participative internal audit, environment complexity, and internal audit system integration; whereas stakeholder expectation has no moderating effect on the relationships among organizational vision, innovative culture and all five dimension of internal audit strategy.

However, future research needs to re-investigate the relationships between outsourcing internal audit utilization and proactive internal audit strategy. For racial diversity of respondents, it needs to be explored in future research. In addition, future research should consider seeking an additional study on the other potential moderating variables. Moreover, future research needs to expand the research contributions and verify generalizability by collecting data from other samples such as audit committee, internal audit staff, and governmental auditors in order to increase reliability-level of research findings.



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# CHAPTER I

## INTRODUCTION

### Overview

Business operations under changing environments over time encounters with obstacles and competitors who are ready to battle for becoming a winner (Bateman and Grant, 1999; Yu, Wang, and Brouthers, 2016). Therefore, the road to success in business may be difficult to an organization if it lacks a powerful instrument. Over the past decades, several organizations attempt to develop an instrument for more effective management, especially in encouraging an internal audit system consistent with best practice standards and business circumstances (The Committee of Sponsoring Organizations of the Treadway Commission: COSO, 2004a). Since such internal audit system plays a key role in providing information to management, it guarantees that the organization can evaluate appropriate internal control systems both in finance and administration together with improvement in performance to ensure that resources are used effectively, efficiently, and economically (Baumgartner and Hamilton, 2004). This may increase the capacity of an organization in preventing the potential damage (James, 2003; The Institute of Internal Auditors: IIA, 2015; Organization for Economic Co-operation and Development: OECD, 2004).

However, although several attempts have been made to continuously improve the quality of audit instruments, frauds and corruption still occur. Moreover, a lack of audit control across the business world creates the conditions for a black swan event. For example, the subprime mortgage crisis affects the level of confidence of the world capital markets which bring about bankruptcy and disastrous effects on several organizations and stakeholders (Roth, 2009). In addition, those people who have collected money in the form of investment encounter losses. This situation reveals the weakness of control system as well as audit system of ineffective financial systems (Andrews, 2008). More recent evidence is the fraud case involving top administrators of King Monkut's Institute of Technology Ladkrabang, Thailand, which causes 1.663 billion baht (50.45 billion dollars) in financial losses (Fredrickson, 2014). Even though





such damage does not significantly affect the world economy, it decreases public's trust in good governance mechanism of Thailand. Questions concerning the improvement and continuous development of an internal audit arise. Such a situation brings about the failure to some organizations such as Worldcom, Enron, and Arthur Andersen; it also calls for resolutions to protect such damages from happening.

Research on firm failure has come up with answers to some questions. Factors that cause failure deals specifically with the lack of skills of defining and creating appropriate strategies which are consistent with the organization's changing business environment. On the one hand, organizations may face poor performance if they fail to continuously develop new knowledge and new strategies (Choi and Lee, 2002). On the other hand, large organizations can survive a world economic downturn because they utilize their resources and come up with strategies effectively (Thornhill and Amit, 2003). That is why strategy is identified as a key instrument (Goll, Johnson, and Rasheed, 2008; Hao and Song, 2016; Leidner et al., 2011; Porter, 2011) that an organization can apply internal audit system for creating superior capabilities (Alic and Rusjan, 2010; Bakhtiari, 2014; Chang et al., 2008; Mahzan and Hassan, 2015; Prawitt et al., 2012).

Proactive internal audit strategy might be an obvious means to create superior capabilities, since it puts an emphasis on providing independence and fairness of assurance as well as consulting services by evaluating and improving the effectiveness and efficiency of risk management together with an appropriate control and a systematic governance (Anderson et al., 2013; COSO, 2004b; Pickett, 2010; IIA, 2015). Through integrating techniques, methods, procedures, and new technology, the organizations are able to maximize their potential in competition and are able to become a leader in business. In doing so, the organizations may be able to gain success in a sustained manner (Porter, 2011).

Moreover, proactive internal audit strategy is dynamic capability resulting from constant integrating, building, and reconfiguring different strategies so as to make the appropriate and effective adaptations to the changing business environment (Ettlie and Pavlou, 2006; Helfat et al., 2007; Pavlou and El-Sawy, 2011; Teece, 2007; Teece, Pisano and Shuen, 1997). In the meantime, proactive internal audit strategy reflects the development of good governance, which serves as an important instrument for



administrators to foresee problems, obstacles, and losses, and prevents problems arising. Additionally, proactive internal audit strategy assists top administrators in seeking opportunities to improve and maximize effectiveness and efficiency of economic resource utilization. For this reason, proactive internal audit strategy serves as a powerful instrument for administrators to bring about strength, potential, and competitive advantages to their organizations (Helfat and Peteraf, 2009; Winter, 2012). It not only increases the level of confidence of stakeholders in the long run but also helps the organizations to achieve their goals in a longer term.

Consequently, proactive internal audit strategy may become the answer for sustainable success by continuously evaluating and improving the effectiveness and efficiency of risk management, internal control, and governance, which are an organization's capabilities. That is because such actions generate new capabilities such as auditing knowledge (Pavlou and El-Sawy, 2011), reflecting different strategies (Kaplan and Norton, 2004) which encourage a competitive advantage that can lead an organization to accomplish its long-term strategic goals (Porter, 2011). In contrary, businesses may face poor performance if the continual creation of new capability does not exist (Choi and Lee, 2002). In addition, the access to valuable resources with unique characteristics is only one way to build sustainable competitive advantage (Zack, 1999). For instance, an organization having superior knowledge can coordinate and combine its resources for giving more service to customers over its competitors (Penrose, 1995). New capabilities, then, are the valuable strategic asset that can offer proprietary competitive advantages (Holsapple, 2013; Winter, 1998; 2012); it is more important for organizations to separate themselves from knowledge of management strategies (Choi and Lee, 2002). Furthermore, proactive internal audit strategy concentrates on creating strategy maps as instruments for assessing the linkage between strategies and performance of an organization (Olve, Roy, and Wetter, 1999; Seminogovas and Rupsys, 2006).

As discussed, proactive internal audit strategy is considered as a key driver for generating a competitive advantage that can contribute to sustainable organizational success. Therefore, the effect of proactive internal audit strategy and firms performance is the issues and topics that should be a priority for research.



## Purposes of the Research

The main purposes of this research are two-fold: (1) to examine the effects of proactive internal audit strategy on firm performance via internal audit consequents, and (2) to investigate the influence of the antecedents on proactive internal audit strategy. The specific research purposes are as follows:

1. To investigate the effect of proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization) on fraud prevention competency, superior operational excellence, transparent business practice, stakeholders credibility, and firm performance,
2. To investigate the effect of fraud prevention competency, superior operational excellence, and transparency business practice on stakeholder credibility and firm performance,
3. To investigate the effect of stakeholder credibility on firm performance,
4. To investigate the effect of organizational vision, innovative culture, competitive intensity, and environment complexity on proactive internal audit strategy, and,
5. To investigate the moderating effect of stakeholder expectation on the relationship between antecedence factors and proactive internal audit strategy.

## Research Questions

The key questions of this research are “How does proactive internal audit strategy affect firm performance?” and “How does the firm enhance proactive internal audit strategy?” Then, the specific research questions need to be answered as listed:

1. How does proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology applications, and outsourcing internal audit utilization) influence fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance?



2. How do fraud prevention competency, superior operational excellence, and transparent business practice influence stakeholder credibility and firm performance?
3. How does stakeholder credibility influence firm performance?
4. How do organizational vision, innovative culture, competitive intensity, and environment complexity influence proactive internal audit strategy? and
5. How does stakeholder expectation moderate the relationships between antecedence factors and proactive internal audit strategy?

### **Scope of the Research**

This research concentrates on the proactive internal audit strategy of Thai-listed firms, comprising of five dimensions: internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology applications, and outsourcing internal audit utilization, which assist firms in accomplishing their goal-setting. This is because proactive internal audit strategy is procedure and guidelines which are created by an organization to strengthen and promote the capability of internal audit system and an organization's achievement. Therefore, this research focuses on how proactive internal audit strategy assists firms to achieve their goals.

Dynamic capability theory describes linkage among the variables in this research and it explains the details of correlation between proactive internal audit strategy and consequences, namely fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. In addition, contingency theory accounts for the examination of a relationship between the antecedents (organizational vision, innovative culture, competitive intensity, and environment complexity) and proactive internal audit strategy. For the moderating effects, stakeholder expectation is placed as the moderator of the relationship between proactive internal audit strategy and antecedence, which is constituted by the contingency theory as well. As a result, the contingency theory and dynamic capability theory are utilized to explain the connection between environmental change, proactive internal audit strategy, competitive advantage and firm's success.



Additionally, Thai-listed firms are chosen as a basis for the investigation of proactive internal audit strategy because of several reasons. First, the firms meet the criteria considered by the Securities and Exchange Commission. It is important to note that the firms with good properties in terms of number and quality, certainly ensured that every firm has an internal audit system. Second, survival and unstoppable destruction in a deep financial crisis of listed firms reflect on that company's ability for adapting and developing other strategies to suit the situation. Third, the obtaining of multi-industry information brings about maximizing observed variance which strengthens the generalizability of the results. Finally, there has been a paucity of known previous empirical research which examines the proactive internal audit strategy on firm performance in Thailand. Therefore, Thai-listed firms are appropriate sample in this research.

Meanwhile, the questionnaire is a major instrument that is employed for data collection in this research. The key informants are chief internal audit executive, internal audit director, or the equivalent of Thai-listed firms. They are selected as the key informants because they are the main persons who are responsible for carrying out the internal audit function of the organization, which can determine the internal audit strategy and policy that impacts the achievements of the organization's goals.

All hypotheses are tested by the ordinary least squares (OLS) regression analyzes. Firm size and firm age are control variables. Owing to firms of different age and size, there might be a significantly different effect on the predicted results. In addition, it also emphasizes that the control variable helps to minimize spurious relationships.

### **Organization of the Dissertation**

This research is organized into five chapters as follows. First, chapter 1 represents an overview and motivation of this research, the purposes of the research, the research questions, and the scope of the research. Chapter 2 consists of a review of the relevant literature, detailing all constructs in the conceptual model, the definitions of each construct, and the relationships among the constructs with the advocated theoretical framework to postulate some hypotheses. Chapter 3 illustrates the research method, including the population and sample selection, the data collection procedures, the variable measurements



of each construct, and the statistical equations to test the hypotheses. Additionally, the examinations of validity, reliability, and non-response bias testing are included to ensure that the results of this research are reliable. Chapter 4 demonstrates the results of this research in company with the discussions. Finally, chapter 5 describes the conclusion, limitations, and implications for stakeholders such as shareholder, investors, regulators and manager, and suggestions for future research.



## CHAPTER II

### LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The previous chapter describes the situation and significance of proactive internal audit strategy that causes the motivation for this research, which leads to the research questions, research objectives, and scope of the research. This chapter emphasizes a conceptual model and the relevant literature.

#### Theoretical Foundations

This research attempts to integrate theoretical perspectives that advocate how proactive internal audit strategy impacts on firm performance. Theories, previous research and relevant literature, and the definition of each construct in a conceptual model, as well as bridges among the constructs and hypotheses development, are discussed respectively. The dynamic capability theory is employed for an explanation of the proactive internal audit strategy - its consequences relationships. Meanwhile, the contingency theory is applied to illustrate the relationships between antecedent variables and proactive internal audit strategy. Additionally, the contingency theory is also used to describe stakeholder expectation that serves as the moderating effects of such relationships.

#### Dynamic Capability Theory

Dynamic capability theory, an organizational theory, describes how firms can purposely adapt their competencies to address internal and external environmental challenges. This adaptation process requires an organization to integrate, build and reconfigure its existing internal and external resources to respond to such business challenges adequately and in a timely manner (Teece, Pisano, and Shuen, 1997; Teece and Pisano, 1994; Teece, 2007). One aspect of this adaptive response may be to create a point of difference, which can assist in business positioning, and identify business opportunities (Teece, 2009; 2012, Winter, 2012).

More specifically, dynamic capability refers to an organization's capacity for purposefully creating, extending, and modifying its resource base (Helfat et al., 2007),



which consists of human resources, physical organization, and assets (Eisenhardt and Martin, 2000). A firm's assets include tangible and intangible assets, which can be beneficially deployed, and reflects a long-term evolution of processes (Amit and Belcourt, 1999). According to Macher and Mowery (2009), the dynamic capability is a firm's assets (e.g., skill-base, techniques, reputation, and technology) resulting from systematically generated learning and accumulated experience. For example, increasing productivity derives from the development and accumulation of experience via repeated operation of similar tasks over time (Argote and Ingram, 2000). Therefore, an ideal combination of resources and capabilities of a firm, defined as new competencies or strategic assets (Winter, 1998), becomes a key dynamic capability, which can bring firm distinctive competencies and strengths. In addition, it also can be applied to improve and develop innovative products (Helfat and Raubitschek, 2000) and reduce delivery and manufacturing costs (Nickerson and Zenger, 2004) that gives rise to superior competencies and abnormally high returns (Porter, 2011; Teece, 2007), as well as organizational rents (Amit and Schoemaker, 2012). This means that strategic assets or new competencies are a key strategy that enables firms to sustain growth and success when faced with new challenges (Helfat and Peteraf, 2015). As discussed by Nonaka (1994), the dynamic capability is one of the most significant strategies to create sustainable competitive advantage, especially in high-performance firms (Hiltrop, 1999).

In terms of a firm's proactive strategy, dynamic capability theory can explain this phenomenon through integrating, rebuilding, and reconfiguring existing internal audit competency frameworks into strategic capabilities that can be tailored to any situation. This generates vital differences in terms of a firm's strategic choices (Kor and Mesko, 2013), which can serve as a quality filter to create effective and efficient processes at every business level. According to Quinn (1999), managing strategic adaptation can provide the organization an opportunity to increase profit, which includes four measurements. The measurements are leveraging the capabilities, concentrating on development, continuous innovation, and eliminating inflexibilities. In like manner, the literature on dynamic capability points out that strategy can provide well-established micro-foundations for the firm (Teece, 2007). For example, Eisenhardt





and Martin (2000) has used new product development routines, cross-functional R&D teams, technology transfer, knowledge transfer routines, and quality control routines as key micro-foundations of dynamic capability for measurement. In terms of innovation, Hofmann, Theyel and Wood (2012) point out that advanced technology adaptation, a firm's alliance experiences, and product innovation capacity enables a firm to add beneficial knowledge about strategic capability, and suggests that firms first should develop certain competencies to achieve sustainable business objectives. This is because capability development processes have several driving forces, which are the keys to dynamic capabilities: organizations, social network, cultural leadership, information technology, and strategic architecture (Montealegre, 2002). Zello and Winter (2002) also identify the evolution of dynamic capabilities stemming from deliberate learning and knowledge development procedures. Defining ordinary or zero-level capabilities as those that allow a firm to make a living in the short term, they are extended, modified or created by higher order dynamic capabilities, called first order, second order and so on (Winter, 2003). This demonstrates that a firm's proactive strategies are a powerful tool that can adapt quickly to new circumstances.

Through the lens of internal audit framework, proactive strategies are acting in anticipation of future problems, needs, or changes. These provide a forward-looking approach in the light of innovative or new adventure activities (Lampkin and Dess, 1996), which facilitates the creation of a strategic management benchmark for internal audit function. As the global survey results by Ernst and Young (2012) have discovered, upgrading internal audit systems, such as improving the risk assessment procedure and strengthening the ability in internal control, are guidance for the future of strategic internal audits. Equally, Al-Matarneh (2011) illustrates that internal control systems (e.g., structure and activity management systems) allow organizations to eliminate barriers to achieving their goal. Besides, focusing on the internal audit approach both at present and in the future gives the greatest benefit to an organization (Alic and Rusjan, 2010). Therefore, a proactive internal audit strategy based on dynamic capabilities is evaluating and improving the effectiveness and efficiency of risk management, control systems, and governance by creating strategy maps (Seminogovas and Rupsys, 2006) to use as a powerful tool for assessing the relationships among environmental factors,



strategies, competitive capabilities, and firm performance. As a note on empirical research in Winter (2003), the firms with the greatest dynamic capabilities attains superior performance. Zahra and Nielsen (2006) find that a firm with a high level of dynamic capability outperforms a smaller one with exiguous dynamic capability, which is confirmed by Teece (2007). However, dynamic capability mentions that proactive internal audit strategy is a new competency or strategic asset of the firm, which is at the heart of core capabilities that can create a competitive advantage, leading to sustainable goal achievement by Thai-listed firms both now and in the future. Additionally, this theory can visually link relationships among the constructs in the conceptual model, which includes a proactive internal audit strategy and its consequences (see Figure 1).

### Contingency Theory

An underlying assumption of the contingency approach, there should be congruent the organization - its environment relationships, and fits between various practice and organizational design (Nightingale and Toulouse, 1977). In their seminal contribution, Selto, Renner and Young (1995) argue that utilizing management system depended on the changing of the environment both internal and external of firms (Pertusa-Ortega, Molina-Azorin, and Calver-Cortes, 2010). Alrawi and Thomas (2007) indicate that when the organization selects operating system or technique, it is inherently based on a specific situation. Therefore, contingency theory is utilized for describing a wide interest on the subject of management and accounting information systems research, which considers both internal and external factors affecting the organization such as size, system, and practice (Anderson and Lanen, 1999; Chenhall, 2003). However, the contingency view is the combination of concepts of administration in four different ways: traditional concept, behavioral concept, quantity concept, and systematic concept (Fiedler, 1967).

Contingency theory serves as a key role in the late 1960s. It is a theory that stems from the concept that states that an appropriate organization should be structured in the way that corresponds with environments and the humanistic environment. It should have nature as a variable and an important factor in determining regulations and planning. It should be reasonable and corresponding with facts as well as environments



and goals of an organization. The members of an organization should have culture, beliefs and needs (Donaldson, 2006; Gordon and Miller, 1976; Lawrence and Lorsch, 1967), for instance, Nisar et al. (2012) which find that a dynamic environment has a significant impact on the organizational structure.

In addition, situation management functions as the concept that is free of theory to back up. Situation management does not have the best administration since each administration differs. It can be used to be consistent with environmental factors. The administration has both a disadvantage and an advantage. Choosing appropriate situational management should be the best policy to manage for appropriateness and kinds of problems. Due to the fact of problems difference, the administration should not be fixed (Barrow, 2014; Child, 1972). Situational management takes both the relationship within an organization and the relationship outside the organization for the sake of an organization that follows if-then situations.

Contingency scholars confirm that performance is a function of the fit between the organization and the environment, and strategy and structure (Baird and Thomas, 1985). An appropriate fit between the organization and its environment and an appropriate organizational design leads to a greater effectiveness, efficiency and participant satisfaction (Cummings and Worley, 2014; Kast and Rosenzweig 1985). This theory demonstrates the ability of the organization to adjust or adapt to the environment that is necessary for consistency between the environment and the infrastructure (Sausser, Reilly, and Shenhar, 2009). Consequently, the contingency maintains an appropriate fit between environment and strategy, resulting in enhanced organizational performance dependent upon firm goals, which reflect differences in satisfied customers and employees (Lee and Miller, 1996). Miller (1991) finds that the match between strategy and the environment is positively related to financial performance, and is unable to find a structure - environment match.

Administration now emphasizes administration of facts. Administration shifts its focus from administration philosophy to the administration of facts (Fiedler, 1967). Situational management theory or contingency takes the steps of administration which state that administration depends on facts that lead to problem-solving in administration. According to this concept, situation determines ways to solve. Situations also determine



how administrators approach and analyze the problems by combining concepts of the close and open system. All circumstances are interrelated. Administration, in this sense, is the relationship between an organization and environments and it needs an immediate decision based on humanism which leads to goals and outcomes of an organization as the key concept of administration (Palmer and Dunford, 2002; Sirmon and Hitt, 2009).

Contingency theory consists of the analysis of situations, which emphasize characteristics of situations as well as decision making of an organization. This theory gives importance of alternative strategies to build competition of organization (Davies and Brady, 2000). Educators such as Chenhall (2005) discovers that the relationship of sanction between learning strategy and outcomes of operation might occur accidentally as a way to find stimuli, which deal especially with the age of organization and duration of an operation. Jiang and Li (2008) recommend that the impact of the strategic administration towards operation may be extended under some conditions and it may be lessened from other conditions. In a broader sense, contingency theory is used as a way to assess such problems closely.

In conclusion, the theory of contingency is appropriate for organizational development especially problem solving outside an organization due to science and technology factors, politics, economics and characteristics within an organization. For example, Reid and Smith (2000) find that the influence of external factors such as the generic contingencies, technological uncertainty, production systems, and market environment lead to organization's complexity of management accounting system. Moreover, contingency theory also gives importance to the combination of concepts appropriate for strategies, behavioral, and management (Chandler, 1962) so as to build the body of knowledge and adjustment of resources (Simonin, 2004). This leads to factors that stress the capability of competitive advantage (Jiang and Li, 2008). From of the reasons above, contingency theory serves as an appropriate concept for this research since proactive internal audit strategy is usually affected by internal circumstances and this leads to the adjustment of appropriate strategies for operation and problem solving effectively. As a result, an organization can stand firmly in continuously changing environments.



## **Relevant Literature Review and Research Hypotheses Development**

A review of the literature related the developing of the conceptual model, proactive internal audit strategy, as the main variable of the research comprising five dimensions: internal audit system integration, participative internal audit, comprehensive business risk management, advanced internal audit technology application, and outsourcing internal audit utilization. The consequences consist of fraud prevention competency, superior organizational excellence, transparency business practices, stakeholder credibility, and firm performance. In the meantime, organizational vision, innovation culture, competitive intensity, and environment complexity are antecedents. In addition, stakeholder expectation is the moderating of the relationships among antecedences and the main variable of this research.

In the past decades, the topic under the title the internal audit strategy has been studied in all accounting fields. There is a little empirical research on proactive internal audit strategy based on a firm strategy in which creates capabilities of the firm, particularly, the new dimension of proactive internal audit strategy that adds high capabilities and achieves sustainability of the firm. Moreover, a large amount of prior research also lacks evidence for strengthening the generalizations of proactive internal audit strategy because the majority of it is interested only in studying innovation, learning, and experience of the firm. Therefore, this research focuses on an empirical study in Thai-listed firms.

To achieve a better understanding of the relationships between proactive internal audit strategy and its consequences and antecedents as well as the moderator, this chapter includes the following topics: theoretical foundations, relevant literature review, research hypotheses, and a summary as discussed earlier. Additionally, the next section makes an effort to generate the theoretical perspectives that advocate how proactive internal audit strategy has an effect on the firm's achievement.

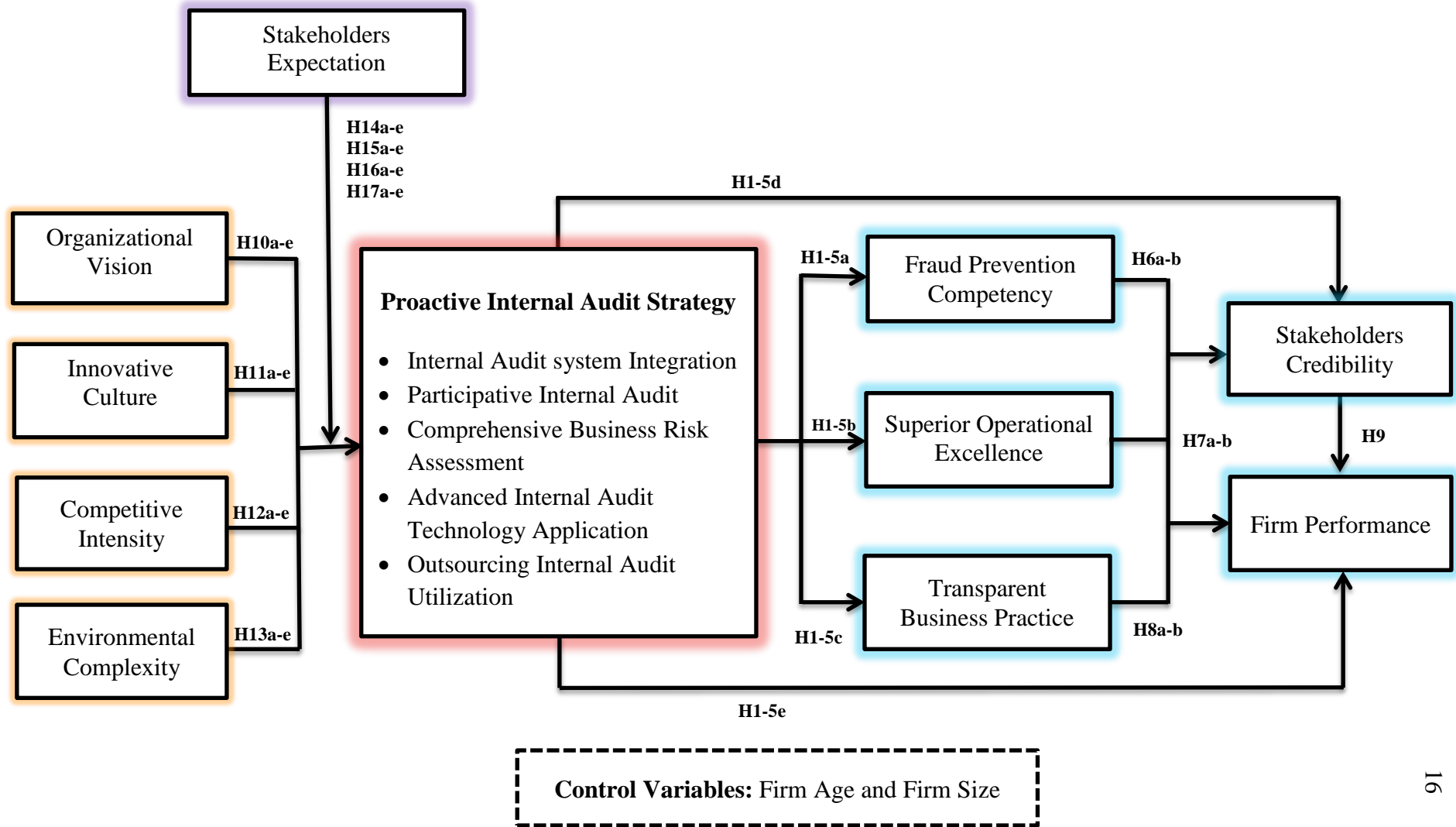
Moreover, the consequence variables of proactive internal audit strategy are namely, fraud prevention competency, superior operational excellence, transparency business practice, stakeholder credibility, and firm performance. In addition, the



moderating variable is stakeholder expectation that has a positive impact on the relationships among five antecedent variables and each dimension of proactive internal audit strategy. As described above, this research agenda presents major theoretical aspects of proactive internal audit strategy to the main ideas of their antecedent and consequence variables, which provides firm performance as the result. Thus, the conceptual model of this research is exhibited in Figure 1 as below.



Figure 1: A Conceptual Model of the Antecedents and Consequences of Proactive Internal Audit Strategy



## **Proactive Internal Audit Strategy Background**

Internal audit expands its activities into entire operating areas of an organization (Moeller, 2016) with purposes of independent assurance and consulting activity designed to add value and improve an organization's operations (The Institute of Internal Auditors: IIA, 2015). An internal audit plays an important part in providing information to management, and it is a guarantee of an organization for evaluating efficiency and effectiveness of appropriate internal control systems in both financial and administration to promote practices for achieving the objectives and goals of an organization by reporting an organization's value-added activities. In addition, being a fair and independent mentor for management in an improvement of performance efficiency increases the effectiveness and ensures that resources are used economically and are cost-effective (Baumgartner and Hamilton, 2004). Internal audit system is driving such success (Cadbury Report, 1992; IIA, 2015; Organization for Economic Co-operation and Development: OECD, 2004) as follows:

1. It enhances good governance processes and operates transparently; preventing misconduct and fraud, and reducing the potential risk factors that make operations not achieve their goal setting.
2. It encourages accountability and responsibility in order for the organization gain information or report responsibly, and it is a basis of transparency and the audibility principle.
3. It strengthens the efficiency and effectiveness of performance in an organization, owing to internal audit system that evaluates, analyzes, and compares all the information of the practices. Thus, its important data that helps to improve an operating system inconvenient, concise, and decreasingly complicated steps in order to fit the situation all the time; and to reduce time and cost, mediating cooperation between manager and practitioners, as well as eliminating the problem of misunderstanding of the policy.
4. It checks and balances measures in which promote the appropriate allocation of resources used by the organization based on priorities, in order to gain results with maximum benefit to an organization.





5. It provides early warning signals of misconduct or corruption in an organization to minimize the chance of severity and potential risk, and adds opportunities for task success.

Further, a good internal audit system is a key instrument for management because it highlights the problems, barriers, and potential corruption. Besides, it also can prevent and mitigate the impact in losing the resources that are not supposed to happen, as well as it helps managements to make a decision concerning effective strategy implementation.

#### Proactive Internal Audit Strategy

A business operation under changing environment over time encounters with competitors who are ready to struggle for becoming a winner. Hence, the long-term success of an organization is difficult if it without a powerful instrument. Proactive internal audit strategy seems to be the best answer for such an issue by continuously evaluating and improving the effectiveness and efficiency of risk management, internal control, and governance, which is an organization's capabilities. That is because such actions generate new knowledge (Pavlou and El-Sawy, 2011; Ettlíe and Pavlou, 2006), reflecting different strategies (Kaplan and Norton, 2004) which enhance a competitive advantage (Argot and Ingram, 2000; Lundvall and Rodrigues, 2002; Sharkie, 2003; Porter, 2011) that can lead an organization to accomplish its long-term strategic goals (Li et al., 2008). According to Choi and Lee (2002), businesses may face poor performance if there is a lack of continual creation of new knowledge. As a part of the perspective internal control system, Al-Matarneh (2011) reveals that the structure and activity management system helps organizations effectively reduce barriers to achieving their objectives. In the same vein, Alic and Rusjan (2010) point out that obtaining full management advocates and focuses attention on the internal audit approach that gives the greatest benefit to an organization.

The access to valuable resources with unique characteristics is an only way to build a competitive advantage that brings about organization's success (Zack, 1999), which several can measure a unique resource measures either traditional financial measures or non-financial measures (Bigelow, 2002; Asif et al., 2010). For instance, an



organization having superior knowledge can coordinate and combine its resources for giving more service to customers than competitor (Penrose, 1995). New knowledge is the valuable strategic asset that can offer proprietary competitive advantages; it is more important for organizations to separate themselves from knowledge of management strategies (Choi and Lee, 2002).

Proactive internal audit strategy not only focuses on evaluation and improvement of the effectiveness of risk management, control, and governance, but also concentrates on creating strategy maps, a diagram used in describing the primary strategic goals, (Seminogovas and Rupsys, 2006) as instruments for assessing the linkage among environmental factors, strategies, and performance of an organization (IIA, 2015). Therefore, proactive internal audit strategy is considered as a key that leads to sustainable goals. This is because it can encourage effective audit mechanism that brings about sustained competitive advantage and contributes an organization to get superior performance outcomes (Alic and Rusjan, 2010; Choi and Lee, 2002; Helfat and Peteraf, 2009; Li et al., 2006; Porter, 2011; Thornhill and Amit, 2003; Winter, 2012).

However, proactive internal audit strategy is derived from two parts, including proactive behavior and internal audit procedure. In the first part, the proactive behavior may refer to behavior that directly alters environments that it has either personal and situational causes, or, acting in anticipation of future problems, needs, or changes (Lumpkin and Dess, 1996; Venkatraman, 1989). As such, proactiveness might be critical to an organization orientation since it advises a forward-looking perspective that is in accompany with innovative or new adventure activities (Lumpkin and Dess, 1996). Being proactive leads an organization to create new ideas (Crant, 2005), enables making some things happen, anticipates and prevents problems, and seizes opportunities, which it brings about to change the environment and oneself to attain a different future (Parker, Bindl, and Strauss, 2010).

Proactivity becomes extremely important in strategic management when the organization encounters more competition and pressure, particularly, in terms of innovation (Crant, 2000; Frese and Fay, 2001; Sonnentag, 2003). Proactive behavior then plays a significant role in work outcomes (Chan, 2006; Crant, 2000; Thomson, 2005). It also affects career success (Seibert, Kraimer, and Crant, 2001; Fuller and



Marler, 2009), services performance (Boyne et al., 2010), proactive resolving of problems and implementing new ideas (Parker, Williams, and Turner, 2006), taking charge (Griffin et al., 2007), initiating change (Frese and Fay, 2001), and network building (Thomson, 2005; Morrison, 2002). Moreover, adopting proactive strategies can reduce financial risks; and helps an organization against external pressures efficiently, which it contributes toward building competitive advantages (Boiral, 2006). The definitions of proactive behavior have a wide-ranging implication as shown in Table 1.

Table 1: The Definition of Proactive Behavior in Organization

Author(s)	Definition
Lewin (1938)	Behavior that directly alters environments, which it has both personal and situational causes
Venkatraman (1989)	Processes aimed at anticipating and acting on future needs by seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle
Covin and Slevin (1990)	Characterized by frequent and extensive technological and product innovation, an aggressive competitive orientation, and a strong risk-taking propensity by top management
Bateman and Crant (1993)	Self-initiated anticipatory action that aims to change and improve the situation or oneself.
Chen and Hambrick (1994)	Proactiveness involves taking the initiative in an effort to shape the environment to one's own advantage
Lumpkin and Dess (1996)	How a firm relates to market opportunities in the process of new entry.



Table 1: The Definition of Proactive Behavior in Organization (continued)

Crant (2000)	Taking the initiative in improving current circumstances or creating new ones
Frese and Fay (2001)	Proactivity means to have a long-term focus and not to wait until one must respond to a demand.
Grant and Ashford (2008)	The anticipatory action that employees take to impact themselves and/or their environments.
Bindl and Parker (2010)	About making things happen. It involves self-initiated, anticipatory action aimed at changing either the situation or oneself.
Parker, Bindl, and Strauss (2010)	Being proactive is about making things happen, anticipating and preventing problems, and seizing opportunities. It involves self-initiated efforts to bring about change in the work environment and/or oneself to achieve a different future.

In the second part, internal audit procedure is defined as an audit process that is performed by the organization to check for completeness, accuracy, and deviations from standard accounting procedures. It verifies the reliability of existing records, safeguards company assets, and ensures that management's policies and established procedures are followed properly (Sueyoshi, Shang, and Chiang, 2009). Normally, audit procedure is used to test the assertion or control; in particular, it is designed for directly testing the assertion or control and testing the overstatement or understatement (PCAOB, 2007). As the global survey about internal audit function by Ernst and Young (2012), state that all stakeholders of an organization need to leverage the internal audit system. Their top five enhancement priorities of internal audit system consist of improving the risk assessment procedure, strengthening the ability to monitor emerged risks, linking internal audit outcomes with business objectives, reducing the cost of internal audit function without extinction of risk coverage, and identifying opportunities in order for cost savings in the business. This is guidance for the future of strategic internal audit.



Thus, an organization must have a clear understanding of the operation and management of a firm to enhance the effectiveness of internal audit procedure.

As described earlier, the proactive internal audit strategy illustrates why some firms have a greater competitive advantage than do other firms. In conclusion, this research shows that the proactive internal audit strategy refers to the internal audit procedure and guidelines that the organization uses in systematical operations and plans in the future, as well as continuously developing to keep pace with changes in the situation. In order to achieve those objectives and targets, they consist of internal audit system integration, participative internal audit, advanced internal audit technology application, comprehensive business risk assessment, and outsourcing internal audit utilization.

Therefore, a summary of the review of the key literature on proactive internal audit strategy is displayed in Table 2.



Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Miller and Friesen (1978)	Archetypes of strategy formulation	Strategy formulation	Firms' characteristics	The proactive often introduced though new product, technologies, administrative techniques.
Miller (1983)	The correlates of entrepreneurship in three types of firms	Entrepreneurship	Types of firms	Proactive innovations are the first one that the entrepreneurial firm used to cope with innovate product or service faster.
Miller and Camp (1985)	Exploring determinants of success in corporate ventures	Corporate ventures	Financial success	Second firm can enter a new market and trend to achieve success via proactive venturing activities.
Liebernam and Montgomery (1988)	First-mover advantages	The best strategy	Superior profit	The first-mover advantage as the best strategy for capitalizing on a market opportunity that can gain superior profit

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Covin and Slevin (1989)	New venture strategic posture, structure, and performance: An industry life cycle analysis	Strategic posture (innovation, proactivity, risk taking)	Financial performance	Strategic posture was more positively correlated with financial performance.
Venkatraman (1989)	Strategic orientation of business enterprises: The construct, dimensionality, and measurement	Strategic orientation (aggressiveness, analysis, futurity, defensiveness, proactiveness, and riskiness)	Performance (growth and profitability)	Proactiveness is a key dimension one in term of strategic orientation that it has validity for prediction performance.
Pearce and Zahra (1991)	The relative power of CEOs and Boards of director: Associations with corporate performance	Board types (caretakers, statutory, proactive, participative)	Performance	Powerful boards, particularly proactive and participative, were strongly associated with superior firm financial performance.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Lin and Carley (1993)	Proactive or Reactive: an analysis of the effect of agent style on organizational decision-making performance	Agent style (proactive or reactive)	Organizational performance	Proactive has not related to organizational performance. Time pressure shows positively relationship between proactive agent style and organization performance.
Crant (1995)	The proactive personality scale as a predictor of entrepreneurial intentions	The proactive personality scale	Entrepreneurial intentions	The proactive personality scale has a strongest associate with entrepreneurial intentions.
Frese, Fay, Hilburger, Leng, and Tag (1997)	The concept of personal initiative: Operationalization, reliability and validity in two German samples	Feature of two German	Personal initiative	Higher initiative existed in small-scale entrepreneurs in the East



Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Claes and Ruiz-Quintanilla (1998)	Influences of early career experiences, occupational group, and national culture on proactive career behavior	Early career experiences, Occupational group membership, National culture	Proactive career behaviors	Early career experiences and national culture have a positive effect on proactive career behaviors Occupational group shows positively impact on skill development and consultation.
Deluga (1998)	American presidential machiavellianism implications for charismatic leadership and rated performance	Presidential machiavellianism, Charismatic leadership	Rated performance	Presidential Machiavellianism has a positively connected with charismatic leadership and rated performance.
Parker (1998)	Enhancing role breadth self-Efficacy: The roles of job enrichment and other Organizational Interventions	Proactive personality	Self-esteem	Increased job enrichment and increased quality of communication predicted the development of greater self-efficacy

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Frohman (1998)	Igniting organizational change from below: The power of personal initiative	The power of personal initiative	Organizational change	People who brought about the changes were easily identified, often not on the company's high potential list, directed the organization needs to go beyond their jobs, driven internally to make a difference, action-oriented, and the results more than teamwork.
Bateman and Crant (1999)	Proactive behavior: Meaning, Impact, Commendations	Proactive behavior	Performances	New strategies can emerge through their ideas and actions.
Becherer and Maurer (1999)	The proactive personality disposition and entrepreneurial behavior among small company presidents	Entrepreneurial behavior	Proactive personality	Entrepreneurial postures of firm (Change in sales and change in profits) have positive effect to proactivity.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Kirkman and Rosen (1999)	Beyond self-management: Antecedents and consequences of team empowerment	Empowered teams	Work team effectiveness	More empowered teams were also more productive and proactive than less empowered teams and had higher levels of customer service, job satisfaction, and organizational and team commitment.
Morrison and Phelps (1999)	Taking charge at work: Extra role efforts to initiate workplace change	Taking charge	Organizationally functional change	Expanding current understanding of extra role behavior, organizations can motivate employees to go beyond the boundaries of their jobs to bring about positive change.
Seibert, Crant, and Kraimer (1999)	Proactive personality and career success	Proactive personality	Career success	Proactive personality has positively effect on career success both self-reported objective (salary and promotions) and subjective (career satisfaction)

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Stockdale, Whitehead and Gresham (1999)	Applying economic evaluation to policing activity (No. 103)	Proactive policy	Resource allocation	Economic evaluation thought proactivity policy has a key role in decisions toward resource allocation
Crant (2000)	Proactive behavior in an organization	Proactive behavior	Outcomes	The four constructs involving proactive behavior: proactive personality, personal initiative, role breadth self-efficacy, and taking charge
Crant and Bateman (2000)	Charismatic leadership viewed from above: The impact of proactive personality	Proactive personality	Charismatic leadership	Self-reported proactive personality is positively associated with supervisors' independent ratings of charismatic leadership.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (Continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Pulakos et al. (2000)	Adaptability in the Workplace: Development of a Taxonomy of Adaptive Performance	Adaptive performance	Performances	The dimensions of adaptive performance are confirmed by CFA: 1) handling emergencies or crises, 2) handling work stress, 3) solving problems creatively, 4) dealing with uncertain and unpredictable work situations, 5) learning work tasks, technologies, and procedures, 6) demonstrating interpersonal adaptability, 7) demonstrating cultural Adaptability, and 8) demonstrating physically oriented adaptability.
Lumpkin and Dess (2001)	Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle	Entrepreneurial orientation	Firm performance (sales growth, profitability, and return on sales)	Proactiveness has a strong positive related to performance. Competitive aggressiveness was negatively associated with sales growth, profitability, and return on sales.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Svensson and Wood (2004)	Proactive versus reactive business ethics performance: A conceptual framework of profile analysis and case illustrations	Proactive vs Reactive	Business ethic performance	Two firms show proactive performance: (1) Tylenol has developed packaging that care socially responsible, and (2) Volvo has developed safety continued: active safety, passive safety, and protection to customer.
Thompson (2005)	Proactive personality and job performance: A social capital perspective	Proactive personality	Job performance	Proactive personality was related to job performance; and more effect when network building and taking was used to mediating.
Chan (2006)	Interactive effects of situational judgment effectiveness and proactive personality on work perceptions and work outcomes	Proactive personality	Predicts work perceptions, Work outcomes	Proactive personality predicts work perceptions and work outcomes positively among individuals with high situational judgment effectiveness (SJE) but negatively among those with low SJE.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (Continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Kirby and Kirby (2006)	Improving task performance: The relationship between morningness and proactive thinking	Morningness and Proactive Thinking	Task Performance	The experimental study shows that proactive and morningness was associated with task performance significantly.
Parker, Williams, and Turner (2006)	Modeling the antecedents of proactive behavior at work	Proactive personality	Proactive behaviors (proactive idea implementation and proactive problem solving)	Proactive personality was significantly associated with proactive work behaviors via role breadth self-efficacy and flexible role orientation
Hartog, and Belschak (2007)	Personal initiative, commitment, and affect at work	Personal initiative	Commitment, Affect	Personal initiative associate whit affect and affective commitment to four distinguishable foci, including the organization, supervisor, work-group, and career.

Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Strauss, Griffin and Rafferty (2009)	Proactivity directed toward the team and organization: The role of leadership, commitment, and role-breadth self-efficacy	Leadership	Proactive behavior	Organizational leaders can increase proactivity by enhancing employee's commitment to an organization.
Belschak and Hartog (2010)	Pro-self, prosocial, and pro-organizational foci of proactive behavior: Differential antecedents and consequences	Proactive behavior (the organization, supervisor, work-group, and career)	Transformational leadership, Goal orientations, Individual task performance	Proactive behavior has differential relationships with transformational leadership, goal orientations, and individual task performance.
Griffin, Parker, and Mason (2010)	Leader vision and the development of adaptive and proactive performance: a longitudinal study	Leader vision	Adaptive and proactive performance	High leader vision can more create adaptive and proactive performance than low leader vision.



Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Menguc, Auh, and Ozanne (2010)	The interactive effect of internal and external factors on a proactive environmental strategy and its influence on a firm's performance	Proactive environment strategy	Firm's performance (Sales and profit growth)	Proactive environment strategy has significantly influence to firm's performance. Governance regulator and customer intensity have effect to the relationships between proactive environment and firm's performance.
Swanson (2012)	Linking maintenance strategies to performance	Maintenance strategies	Performance	Proactive and aggressive maintenance strategies have a strong positive associated with performance.
Jiménez and Delgado-García (2012)	Proactive management of political risk and corporate performance: The case of Spanish multinational enterprises	Political risk	Performance	The use of proactive concept for evaluating political risk, it shows greatest performance achievement.

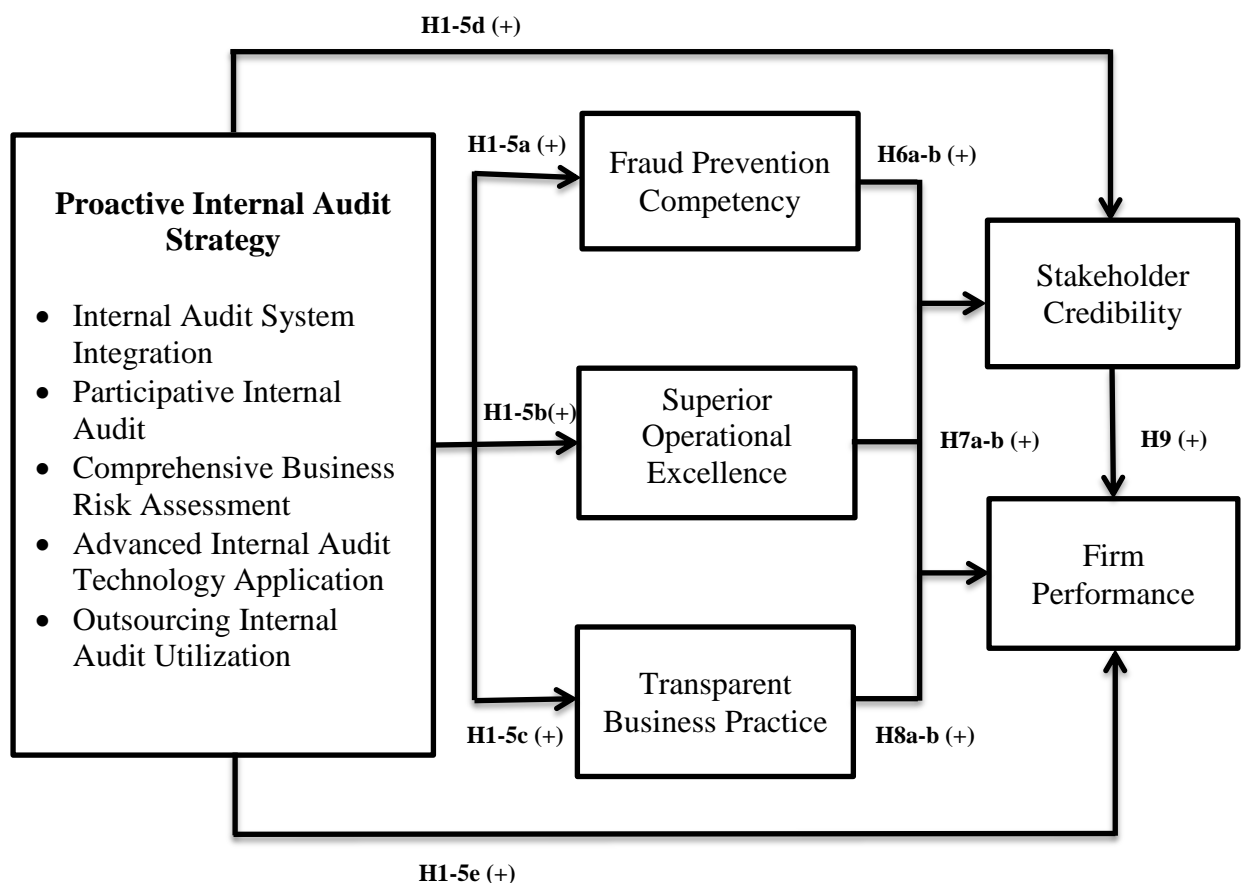
Table 2: The Summary of the Reviews of Key Literature on Proactive Internal Audit Strategy (continued)

<b>Authors</b>	<b>Title</b>	<b>Independent Variables</b>	<b>Dependent Variables</b>	<b>Results</b>
Champion et al. (2014)	A risk assessment based proactive management strategy for aquatic weeds in New Zealand	Proactive management activities	Risk aquatic weeds	Proactive management strategy is effective methods to attain for eliminating or reducing both propagate and colonization pressure of high-risk aquatic weeds.
Leal-Rodríguez et al. (2015)	Organizational unlearning, innovation outcomes, and performance	Proactive strategy (organizational unlearning, innovation outcomes)	Performance	Innovation outcomes (proactive strategy) have an influence to the relationship between organizational unlearning and overall performance, and firm size negatively affects this indirect effect.

## The Effects of Proactive Internal Audit Strategy on Its Consequences

This section emphasizes the effects of the five dimensions of proactive internal audit strategy, including internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization on five consequences which consist of fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance as presented in Figure 2.

Figure 2: The Effects of Proactive Internal Audit Strategy on Its Consequences



### Internal Audit System Integration

Nowadays, internal audit system is a key mechanism of management that enables an organization to add value by evaluating and improving the effectiveness of risk management (Godfrey, Merrill, and Hansen, 2009; Lindow and Race, 2002), control system (COSO, 2004; Hammersley, Myers, and Shakespeare, 2008), and internal governance (Bhagat and Bolton, 2008; IIA, 2015; Tornyeva and Wereco, 2012). Yet, an intensive and rapidly changing environment causes an organization to change its strategy to build a new advantage over rivals (D'Aveni, 1994; Helfat et al., 2007).

Integration is one approach that can be used to make a difference in their capabilities, through the assimilation of the existing knowledge economy (Acworth, 2008). Likewise, Nonaka (1994) notes that it is ability for integrating internally- held knowledge that needs to share its view of the problem by combining and reformulating existing knowledge to generate new insights and solution arises (Marjchrzak, Cooper, and Neece, 2004; Okhuysen and Eisenhardt, 2002; Tasi, 2001; Terwiesch and Loch 1999), which can lead an organization to competitiveness in the long-term. This is because integration relates to the collaboration and synthesis of heterogeneous specialized knowledge that is without extensive communication (Alavi and Tiwana, 2002). These offer a faster and relatively affordable mechanism. For instance, the organization with a robust knowledge application converts their intellectual capital to service and product innovations (Alavi and Tiwana, 2002). In the same vein, De Boer, Van Den Bosch, and Volberda (1999) argue that a firm with suitable combinative capabilities integrates the component of knowledge into architectural knowledge that acts as a platform for creating a new product. In addition, for a cross-regional knowledge integration context, Singh (2008) offers new evidence toward cross-unit integrative mechanisms where firms can achieve superior performance in a multi-unit by knowledge integration and distributed R&D; especially, R&D co-practice – joint technical activities between units that increases the levels of absorptive capacity (Frost and Zhou, 2005). On the other hand, integration is defined as the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment (Lawrence and Lorsch, 1967).



Hence, knowledge integration is at the heart of knowledge application because it is the assimilation of individuals' specialized knowledge to suit the specific-situation (Alavi and Tiwana, 2002). According to Grant (1996), the integration of individuals' specialized knowledge is an important point that an organization uses to analyze the difference in creating the dynamic capabilities, which give rise to success in hypercompetitive markets. In terms of strategy, knowledge integration is the cornerstone of dynamic capabilities (Eisenhardt and Maring, 2000) or a meta-capability in the innovation management research (Furlong and Johnson, 2003; Henderson and Cockburn, 1994). Meanwhile, Alavi and Tiwana (2002) believe that a key element of knowledge application for knowledge integration is comprised of three reasons including sense, interpretation, and respondent to new business prospects and threats.

Moreover, an organization's past integration experience, social capital, and embedded practices also have an influence on the level of coordination that affects the efficiency and scope of integration (Huang and Newell, 2003). According to Ettlir and Reza (1992), an organization's success is caused by the use of integrating mechanisms through creating effective new shapes from several alternative ways of accomplishing these changes. This finding confirms such an aspect. Similarly, Mitchell (2006) indicates that a management's integrative capability, consisting of access to external knowledge and internal knowledge integration, enhances IT project performance. Thus, the connection and assimilation of knowledge is the process of absorbing knowledge from external sources and blending it with technical and skills in business, know-how, and expertise that reside in the information system units of a firm (Okhuysen and Eisenhardt, 2002; Tiwana, Bharadwaj, and Sambamurthy, 2003).

The Institute of Internal Auditors (IIA) officially approve the Standards for the Professional Practice of Internal Auditing in 1978, and it helps in communicating the role, scope, performance, and objectives of internal auditing. It also provides a vehicle that contributes to professionalism in the internal audit and reviews the established systems to ensure compliance with the policies, procedures, plans, regulations, and laws which could have a dramatically effect on operations and reports (Ramamoorti, 2003). Internal audit is the continuous process of examining and evaluating the organization's function (Eden and Moriah, 1996) to improve the accomplishment of an organization by



pointing out weaknesses, enhancing the motivation, deterring the actions that may damage the organization, and increasing the appropriate actions (Globerson and Globerson, 1990). The internal audit activities are recognized as effective in fraud prevention, especially, in-house internal audit (Salameh, et al., 2011). This finding is consistent with Coram, Ferguson and Moroney (2008) who reveal that detecting and self-reporting fraud depend on improving and monitoring the other control systems and environments within the organization. Then, it indicates that the internal audit system not only helps in prevention of capital wastage (Marx, 1981) through fraud, but also enables improvement of operational processes of an organization. For example, the literature points out that external audit fees are reduced when external auditors rely on the work of the internal audit (Krishnamoorthy, 2002; Morrill and Morrill, 2003). While Carmeli and Tishler (2004) find that intangible assets of organizations (e.g., internal audit), have a positively significant impact on firm performance. Moreover, according to the Marxist perspective on accounting, internal audit system can lead an organization to success by improving the productivity of the employee and increasing the return on employed capital (Bryer, 2006).

In summary, internal audit system integration has the potential to affect fraud prevention competency, superior operational excellence, transparency business practice, stakeholder credibility, and firm performance. Therefore, the hypotheses are presented as follows:

*Hypothesis 1a: Internal audit system integration has a positive effect on fraud prevention competency.*

*Hypothesis 1b: Internal audit system integration has a positive effect on superior operational excellence.*

*Hypothesis 1c: Internal audit system integration has a positive effect on transparent business practice.*



*Hypothesis 1d: Internal audit system integration has a positive effect on stakeholder credibility.*

*Hypothesis 1e: Internal audit system integration has a positive effect on firm performance.*

#### Participative Internal Audit

The participative approach often brings about organizational management for the efficiency and effectiveness of operations and goal achievement. In a philosophical perspective, participation is a mechanism that plays an important role in much work redesigned methods and initiatives (Irvin and Stansbury, 2004; Wilson, 1991). Such mechanisms are the types of performance estimation techniques that consist of employee involvement plans, job involvement efforts, and participative management (Feuille and Chachere, 1995). In an administrative perspective, participation can build common support and educate on an agency's activities; in addition, it can also enhance exchanging of information usefulness. From the citizen perspective, it empowers individuals and groups to influence an agency's decision-making (Glass, 1979; De Dreu and West, 2001). Participation reflects people's trust and willingness to participate; especially, in participatory budgeting (Verfürth, 2013) that affects performance and sets goals (Chong, Eggleton, and Leong, 2005). In the corporate sector, participation has been researched as a means for improving the business in connection with processes. For instance, employee participation has an influence on production capacity (Greenwood, 2007; Shetzer, 1993; Fung, 2006)

Additionally, the participative process is a decision process in which subordinates are involved, but the superior makes the final decision (Vroom, 1983). According to De Dreu and West (2001), the participative process increases motivation for generating group decision-making. Typically, workers have more a complete knowledge of their work than another one. Then, when workers are a part of the decision-making process, it may be made an efficient dispatch, which contributes to attaining performance (Chalos and Poon, 2000; Cotton et al., 1988). Consistent with the research of Connor (1992), Melcher (1976), and Schuler (1980), if employees are



involved in the decision-making process, they can take the result of decisions to apply in work procedures. Specifically, an employee's knowledge of the participation process is a crucial mechanism, which manager needs to fulfill for other aspects of their work (McGregor, 2006; Likert, 1967). From the human resources view of participation, participation is important for organizational decisions (De Dreu and West, 2001; Ritchie and Miles, 1970) and productivity through effective mechanisms (Blake and Mouton, 1970). All of the above achieve common goals, values, and cooperation when a higher degree of worker's participation in decisions deals specifically with their own work. It implies that they are partners who are competent, intelligent, and valued (Delmas and Pekovic, 2013). These perspectives suggest that individual's participation brings about greater accomplishment through strengthen high-order needs such as independence, respect, self-expression, equality and trust (Miller and Monge, 1986; Mizrahi, Vigoda-Gadot, and Cohen, 2010).

Moreover, personality traits such as high needs for independence, low authoritarianism and values might mediate the effects of participation on outcomes. As in Abdel-Halim's (1983) findings, it reveals that participation would positively affect only employees who have personalities with high needs for independence, low authoritarianism and realize the value of participation (Carter, 2006). In addition, the participation process depends on the situation that occurs and the number of organizational levels (Jermias and Setiawan, 2008; Favero, Meier, and O'Toole, 2010). For example, the research of Jago and Vroom (1978) indicate that decision-making under participatory modes specified in the rules is more effective than other decisions. Then, the degree of participation in planning, evaluating results, and generating alternatives significantly leads to performance (Black and Gregersen, 1997; Rogerson-Revell, 2008), which can particularly improve cost reduction (Monden, Akter, and Kubo, 1997).

Therefore, participative internal audit refers to the audit that emphasizes coordination in thinking and understanding in an internal audit system among executive, officers, and auditors with equality and independent principles in finding ways to solve problems and accepting the audit result. Based on participative auditing views, which emphasize the key of consulting on **the recipient audits** during audit planning (Adams,





1993), Hawkes and Adams (1995) find that establishing a close relationship between the audit customer and auditors can help strengthen the effectiveness of internal auditing. The findings also demonstrate that participation in strategy plays an important role in achieving organizational operation efficiency (Lin and Tseng, 2006; Tulli, 2014), which leads to superior performance (Huang, Wei, and Yan, 2007). As in Jain and Kini's (1995) research, it suggests that venture capitalist monitoring has a positive influence on operating performance. In a similar vein, McNabb and Whitfield (1998) find that financial participation has a significant effect on financial performance. Moreover, civic participation also reflects on trust in stakeholders (La Porta et. al., 1996) and serves as a strategy for enhancing the flow of vital information in an organization (Miller and Monge, 1986)

In summary, a participative internal audit has the potential to affect fraud prevention competency, superior operational excellence, transparency business practice, stakeholder credibility, and firm performance. Hence, the hypotheses are presented as follows:

*Hypothesis 2a: Participative internal audit has a positive effect on fraud prevention competency.*

*Hypothesis 2b: Participative internal audit has a positive effect on superior operational excellence.*

*Hypothesis 2c: Participative internal audit has a positive effect on transparent business practice.*

*Hypothesis 2d: Participative internal audit has a positive effect on stakeholder credibility.*

*Hypothesis 2e: Participative internal audit has a positive effect on firm performance.*



### Comprehensive Business Risk Assessment

Business risk assessment becomes a crucial issue to which all organizations have turned their attention when financial fraud continuously appeared in the past decade. Risk assessment is seen as a key instrument for evaluating significant risk exposures involved in achieving the organization's strategic objective, the quality of financial and operational information, the efficiency and effectiveness of operations and programs, assets protection, and regulatory compliance with the pressure from a rapidly changing business environment. That is because risk assessment is a systematic process for evaluating and identifying events that might affect both positive and negative achievement of the organization's objectives (Beasley, Branson, and Hancock, 2010; Frigo and Anderson, 2009). Such events may be specified in an organization's both internal and external environments. The external environment includes competition, regulatory force, economic tendency, rapidly changing technologies, and the announcement of the new internal audit function. The internal environment consists of employees, processes, systems, strategies; and other infrastructures, such as changing investments, policies, and structures of an organization. When these potential events intersect with the objectives of an organization, they become a risk (PWC, 2008). In addition, risk assessment is used as a technique to evaluate identified risks, isolate causes, determine the relationship to other risks, and express the adverse effects in terms of both probability and consequence of incidents (Wasilewski, 2012; Beasley, Branson, and Hancock, 2010; Kerzner, 2009).

Risk presents pitfalls, which may occur or change in circumstances that can influence the risk management process, in particular, if its situation is inappropriate (Tušek and Pokrovac, 2010). An organization's risk commonly referred as Enterprise Risk Management or ERM (Gordon, Loeb, and Tseng, 2009) is then the possibility of events that arises and adversely affects the accomplishment of organizational objectives (Koller, 2005). Business, operating in uncertainty, faces risks or opportunities, or both of them together. This causes the reduction or increase of values of an organization (COSO, 2004; Tušek and Pokrovac, 2010). A business's risk assessment process is required and essential for management functions to reach their goals setting (Helliard, Monk, and Stevenson, 2009; Hussain, Sangka, and Hussain, 2012). In addition, it helps



to generate an effective management instrument for coping with extremely uncertain circumstances by which risk assessment clearly provides an organizational view of factors that may be disclosed, whether internal or external, backward or forward-looking (PWC, 2008). Moreover, it offers an integrated analysis, strategies, and reporting in connection with an organization's key risks by focusing on the quality of aggregate exposure, interdependencies, and advocates for the alignment of the oversight function such as in regulatory compliance, audit, and risk in order to reduce the potential risk (Lam, 2014).

Consequently, in this research, comprehensive business risk assessment is defined as determining and assessing process damage that affects the organization's comprehensive objectives, which consist of risk identification, development of assessment criteria, risk assessment, assessing risk interactions, risk prioritization, and risk response (COSO, 2004). As Selim and McNamee (1999) suggest that the new concepts of risk-based internal auditing allows organizations to assess risk and link them to the objectives of business effectively and systematically (DeLoach, 2000), and contributes to a reduction of duplication of an effort (Walker, Shenkir, and Barton, 2003). The risk assessment is then an extremely important matter in an internal audit system. Ballou and Heitger (2005) mentions that the effective assessments are anchored in defining the risk appetite and tolerance of an organization, and gives a basis for determining risk response, as well as building a robust risk assessment process in the internal audit system. Such processes can be applied consistently across the organization and can empower management for their business while maintaining adequate and appropriate control measures to ensure effective and efficient operations, and regulatory compliance of the organization (Beasley, Arens, and Elder, 2007; Power, 2004). Furthermore, business risk assessment reflects social responsibility (Kytte and Ruggie, 2005), management effectiveness (Haines, 2005), transparency (Pennywell, 2009) and fraud prevention of an organization (Trotman and Wright, 2012); and helps to leverage an organization's capabilities, as well as encourage effective decision-making in organizational management (McNamara and Bromiley, 1997)

In past empirical research, a firm's higher level of transparency has a significant negative effect on a firm's lower levels of risk (Pennywell, 2009). This



finding is consistent with Hermalin and Weisbach (2007) who find that under higher levels of firm transparency, managers reduces an organization's risk in order to protect their pay and increase performance. As well, research in terms of multinational enterprises by Bernstein (1969) shows that risk management played a dramatically important role when the organization confronts higher levels of risk. Especially, an organization's specific characteristics have an influence on risk confrontation (Audretsch and Mahmood, 1995). Chang et al. (2008) discuss that risk assessment enables an organization to save money and resources in an internal audit process. Moreover, as to an organization's risk in terms of the adaptation of enterprise risk management, risk management functions as a key instrument that allows an organization to leverage fraud protection (Ciccone, 2006). Meanwhile, Pézier (2003) finds that capital, reputation, a franchise, an astute and cautious management, and development of risk management function have a significant effect on firm's survival. Performance increases when risk assessment is adopted (Pagach and Warr, 2010). The result above confirms that the survival of an organization depends not only on the amount of capital but also on the continuous development and improvement of the business's risk assessment process as well.

In summary, comprehensive business risk assessment has the potential to affect fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. Therefore, the hypotheses are presented as follows:

*Hypothesis 3a: Comprehensive business risk assessment has a positive effect on fraud prevention competency.*

*Hypothesis 3b: Comprehensive business risk assessment has a positive effect on superior operational excellence.*

*Hypothesis 3c: Comprehensive business risk assessment has a positive effect on transparent business practice.*



*Hypothesis 3d: Comprehensive business risk assessment has a positive effect on stakeholder credibility.*

*Hypothesis 3e: Comprehensive business risk assessment has a positive effect on firm performance.*

#### Advanced Internal Audit Technology Applications

For building competitive advantage, advanced technology applications such as information technology, innovative technology, and technology-based audit techniques are referred to as core factors of great importance for the organization at the present (IIA, 2015; Porter, 1991; Ramamoorti, 2003). The value of adopted technology, in that it relies on the cooperation of adopters, is mainly (Farrell and Saloner, 1985) because each organization may have a different incentive to adopt the new technology. The adaptation of new technology is the ability to apply innovative information technology, if successfully adapted (Cooper et al., 1996; Brynjolfsson and Hitt 2000), the practice has changed, and the new system is valid. This means that the adopted technology of both modern software and hardware (Markus and Robey, 1987) denote the organization's capabilities to provide a new product and or service (Koellinger, 2008). According to Kamien and Schwartz (1982), product and service innovation is related to the age of a new production function, which is possible due to the differences in an existing product (Danneels, 2002; Jun, Qiuzhen, and Qingguo, 2011; Miles, 2000). New technology uses, however, cause low costs in the production function of the product and services, which Reinganum's (1981) research find to have a positive effect on production capacity, Beath, Katsoulacos, and Ulph (1995) confirm this finding. Similarly, the empirical research of Falk (2006), in terms of multinationals, shows that new technology is the key factor that influences research and development (R&D) expenditure; and it has a direct effect on productivity growth.

On the other hand, modern technologies are critical factors that strengthen the organization's value and capability (Bharadwaj, 2000). In the view of valuation, this is financial and nonfinancial measurement. For financial measurement, as in the experimental research for the case of FedEx by Williams and Frolick (2001), they



suggest that adopted technology in the business process contributes to the higher achievement of goals. Corresponding with Melville, Kraemer, and Gurbaxani (2004), it reveals that information technology and a firm's complementary resources have an effect on the accomplishment of the business process that can improve organizational performance. Bharadwaj (2000) indicates that firms with high information technology capability are likely to outperform others by using profit and cost-based performance measures. For a nonfinancial measure, in a similar vein, Subramani (2004) find that the adopted information technology in supply chains leads to good relationships with customers. Lai, Wong, and Cheng (2008) reveal that electronic integration has a positive effect on the cost of logistics performance, but not on services. However, Banker, Bardhan, and Asdemir (2006) confirm that new software has a significant positive impact on firm performance (product quality, the decrease of cycle time and product development cost).

In the capabilities view, a large amount of research shows the relationships between the application of computers and operational value. As in a recent work by Brynjolfsson, Hitt, and Yang (2002), the use of computers in an organization gives rise to the efficiency and effectiveness of work practices, especially when using modern computers that affect organizational redesign (Black and Lynch, 2001; Milgrom and Roberts, 1995) and an employee's skill (Bresnahan, Brynjolfsson, and Hitt, 2002 ). Additionally, web technology such as the internet and online channels can increase effective communication, enhance a firm's credibility (Kouzes and Posner, 2011), and add business value (Hulland, Wade, and Antia, 2007). For example, some firms use the internet for creating convenient coordination between supplier and customer (Barua et al., 2004). On the other hand, an organization with superior information technology can assist firms in rapidly accessing a customer information database and reduce its costs for business in the future (Straub and Watson, 2001), as well as increase their revenue (Fahy and Hooley, 2002; Porter, 2001). This means that it contributed to operational excellence, both presently and in the future.

As a result, advanced internal audit technology application in this research refers to innovative information technology application of both modern software and hardware in the organization's internal audit system to maximize potential practice and



flexibility. The investment in technology, an adopted information technology system, or information technology infrastructure is a vital mechanism that gives rise to competitive advantage (Porter, 1991; Bhatt and Grover, 2005; Fink and Nuemann, 2009), which leads an organization to achieving the goals set (Miles and Snow, 1978; Naylor and Ilgen, 1984; Liang, You, and Liu, 2010). A computer investment, at least equal to users, can bring about the organizational change, not only superior outperformance but also productivity growth as well (Brynjolfsson, and Hitt, 2005). Especially, high information technology investment is correlated with high performance (Tam, 1998). Li and Ye's (1999) research finds that information technology investment has a significant positive effect on financial performance, in particular, when there is an extreme environment change, better proactive strategy, and a chief executive officer or chief information officer who is closely monitored.

Consequently, from the empirical evidence research, it is indicated that advanced technology can prevent not only external fraud, but it also enables firms to secure the system from internal fraud (Shaikh, 2004). These findings make a better understanding of whether to use effective modern technology to give unlimited access to the internal auditor for evaluating and checking a wandering point and potential problems in the system. Sharma and Panigrahi (2013) emphasize that applying data-mining techniques in auditing give a primary firm's problems a solution for detecting and classifying fraudulent data. Performance monitoring increases correspondingly when an auditor uses Integrated Test Facility, Test Data, and Generalized Audit Software (Swanger and Chewning, 2001). However, applying technology reflects an organization's credibility (Lee, Kim, and Phaal, 2012) and operational transparency when there is better auditing (Sudhir and Talukdar, 2015).

In summary, advanced internal audit technology applications have the potential to affect fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. Hence, the hypotheses are presented as follows:

*Hypothesis 4a: Advanced internal audit technology applications have a positive effect on fraud prevention competency.*



*Hypothesis 4b: Advanced internal audit technology applications have a positive effect on superior operational excellence.*

*Hypothesis 4c: Advanced internal audit technology applications have a positive effect on transparent business practice.*

*Hypothesis 4d: Advanced internal audit technology applications have a positive effect on stakeholder credibility.*

*Hypothesis 4e: Advanced internal audit technology applications have a positive effect on firm performance.*

#### Outsourcing Internal Audit Utilization

Although the organization's internal audit function designs on an integral part of the organization, by either voluntary or forced by guidelines, regulations, and their local laws; outsourcing is persistent and requires in the world of business. In a survey research by Serafini et al. (2003), it indicates that of the firms that had an internal audit function, 54 percent use services from outsourcing and 43 percent are more likely to use outsourcing in the future. 15 percent of all internal auditors that worked in US firms are outsourcing providers (Carcello, Hermanson, and Raghunandan, 2005), and 64 percent of workers who serve as internal auditors in South Africa's public sector are outsourcing (Barac and Van Staden, 2014). This implies that outsourcing is also very important to the business. That is because the most organizations believe that it can give the organization more of something that is right than in an in-house internal audit such as, in superior service, quality, audit effectiveness, technical competence, and image in the stakeholder view (Carey, Subramaniam, and Ching, 2006; Coram, Ferguson, and Moroney, 2008). Moreover, outsourcing can increase budget flexibility, decrease the need for hiring and training specialized staff, bring in fresh expertise, and reduce some management expenditure (Olive, 2004). Hence, outsourcing represents the basis of the organization's decision-making whether to reject those activities or use outside





suppliers to do it (Busi and McIvor, 2008; Caplan and Kirschenheiter, 2000; Mol, 2007).

The outsourcing concept describes the contracting of professionals from external organizations in order to provide services for various tasks (Endorf, 2004). Then, outsourcing is referred to as the transfer of activities and processes previously conducted internally to an external party (Ellram and Billington, 2001; Hätönen and Eriksson, 2009). Such an external party is the person who has appropriate qualifications, which can assist tasks that require specialized expertise or services in the same way (Beaumont and Sohal, 2004; Lankford and Parsa, 1999). Nowadays, outsourcing increasingly serves as an important role in improving and developing the performance of an organization (McIvor, 2005; Yung-Kung and Yan, 2010); in strategic approach, it claims that can manage a business process in order to build the consistently competitive advantage for achieving a sustainable goal (Rothaermel, Hitt, and Jobe, 2006; Gilley and Rasheed, 2000). For example, empirical literature points out that many Western firms use outsourcing as a primarily strategic concept to save on operational expenditures through cost reduction (Oza and Hill, 2007; PWC, 1999), especially, reducing short-term cost (Holcomb and Hitt, 2007).

Thus, the meaning of outsourcing in internal audit utilization, in this research, refers to hiring the internal audit services provider who has qualifications from outside an organization to assist on tasks that require temporary specialized expertise or in the long-term (Prawitt, Sharp, and Wood, 2012). The literature review suggests that using outsourced internal audit can facilitate the specialized expertise, increase flexibility, and improve efficiency on the cost of a service-proving system. In addition, an organization can also increase cost-efficiency and minimize debt incidence when announcing outsourcing policies (Calabrese and Erbetta, 2005; Caplan and Kirschenheiter, 2000). Similarly, Ramirez-Blust (2007) emphasizes that outsourcing functions of the internal auditor can increase the effectiveness of the organization's operational practice through avoiding the staff development costs such as in recruitment and training, assessing auditors for specialized knowledge and skill in IT fraud, and promoting independence in the function. At the same time, the organization can improve its firm performance by using strategic outsourcing to increase profit (Quinn, 1999) and productivity (Gorg,



Hanley, and Strobl, 2008). This is in agreement with Rothaermel, Hitt, and Jobe (2006) who demonstrate that the use of strategic outsourcing helps an organization to gain superior performance. Moreover, relying on outsourcing for auditing also allows organizations to have effective fraud detection (Coram, Ferguson, and Moroney, 2006).

In summary, outsourcing internal audit utilization has the potential to affect fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. Therefore, the hypotheses are presented as follows:

*Hypothesis 5a: Outsourcing internal audit utilization has a positive effect on fraud prevention competency.*

*Hypothesis 5b: Outsourcing internal audit utilization has a positive effect on superior operational excellence.*

*Hypothesis 5c: Outsourcing internal audit utilization has a positive effect on transparency business practice.*

*Hypothesis 5d: Outsourcing internal audit utilization has a positive effect on stakeholder credibility.*

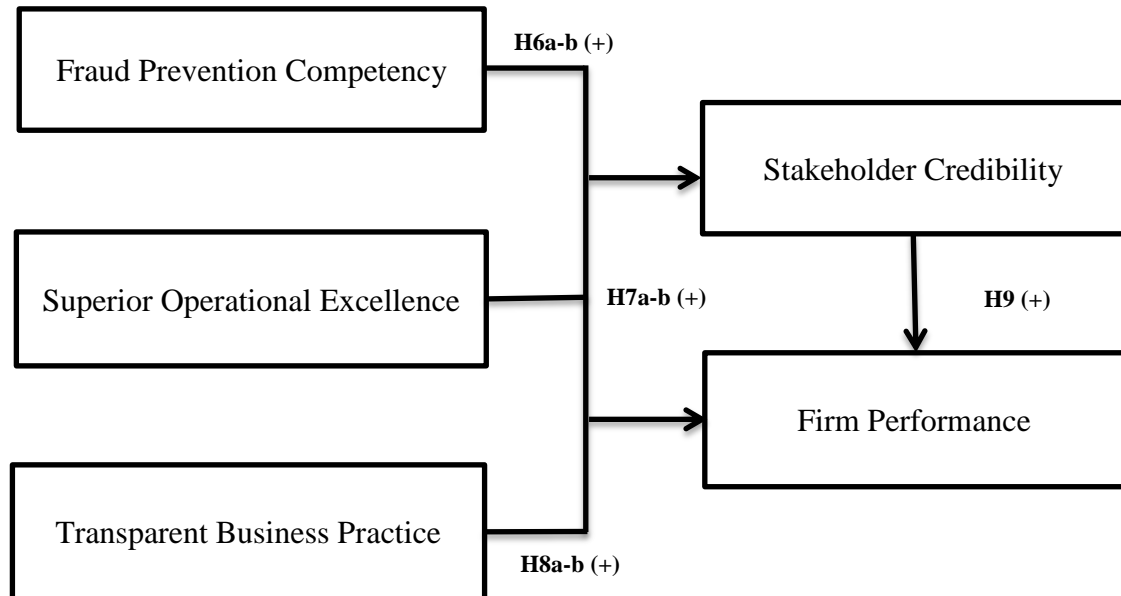
*Hypothesis 5e: Outsourcing internal audit utilization has a positive effect on firm performance.*

### **The Effects of the Proactive Internal Audit Strategy Outcomes on Consequences**

This section investigates the effects of proactive internal audit that consist of fraud prevention competency, superior operational excellence, and transparent business practice on stakeholder credibility and firm performance as shown in Figure 3.



Figure 3: Effects of Proactive Internal Audit Strategy Outcomes on Stakeholder Credibility and Firm Performance



#### Fraud Prevention Competency

One of the most serious businesses problems is fraud because it deals with damage not only to the organization but also on stakeholders, the public, the nation, and more importantly, may give rise to financial issues that evolve into economic crises that can impact a global economy (Colander et al., 2009; Shiller, 2012). For instance, the case of Enron, WorldCom, and Arthur Andersen in 2001 causes the biggest world economic collapse due to fraud (Gabbioneta, 2014). Fraud is an act of deception, deliberately practiced to gain an unlawful advantage; such deception is directed to the detriment of another (Ramos, 2003). Meanwhile, Flesher (1997) emphasizes that fraud means dishonesty in the form of intentional deceptions or a willful misrepresentation of fact. According to Ramos (2003), fraud may occur for three main reasons, including incentive, opportunity, and rationalization (Wells, 2011; Dorminey et al., 2010; Cressey, 2003). Albrecht (1996) suggests that fraud comprises three elements, including: (1) a theft act, which relates to cash, inventory, information, or other assets through computers or the telephone; (2) a concealed or hidden operational procedure from others to benefit oneself; and, (3) a conversion, which involves stolen assets,



whether for selling or converting into cash or other forms. Clearly, fraud can occur at any time when a person or group faces with acquisitiveness, lack of restraint, and an unconscientious (Benjamin, 2001). However, as to the impact on firm outcomes, Feroz, Park, and Pastena (1991) find that abnormal returns in a three-day surrounding window are negative when announcing fraud. In agreement with Karpoff and Lott (1993), they reveal finding negative abnormal returns in a two or three-day surrounding window when reporting a date of fraud. A survey of Global Fraud Research by the Association of Certified Fraud Examiners in 2012 report that each year businesses losses five percent of their revenue amounts to fraud, and have lost too many costs for the detection of potential fraud (Barse, Kvarnstrom, and Jonsson, 2003; Kou, Sirwongwattana, and Huang, 2004; Tackett, 2013). Adams et al. (2006) suggest that prevention is the best way to cope with financial loss through fraud.

Fraud prevention is then a critical issue that the organization must turn its attention to, in reducing cost-effectiveness, which causes radically emerging capabilities in a competitive environment (Phua et al., 2010). Fraud prevention is more than policies creation because it involves further measures, including relentlessly battling against fraud schemes, in either case, recognizing fraud prevention through educating its employees, establishing a strong internal control system, and limiting fraud exposure by effective monitoring instruments (Biegelman and Bartow, 2012). Graham and Bedard's (2003) research find that fraud detection is a complicated feature because each audit client shows different fraud risk factors while planning and performing fraud assessments. Wells (2001) indicates that for fraud prevention, and in particular, cash; an auditor should consider early warning signs of misappropriation such as skimming (e.g., decreasing cash to credit cards and total current assets, increasing costs with declining sales, accounts receivable increases while revenues fell, delayed posting of accounts receivable payments), larceny (e.g., unexplained cash differences, editing or counterfeiting deposit slips, customer billing before due dates and payment complaints), and fraudulent disbursements (e.g., increasing the cost of consulting or advertising; too many voids, missing and destroyed checks). Fraud prevention serves as programs of effective proactive measures to avoid or mitigate fraud that used to occur or may occur (Adams et al., 2006).



In this research, therefore, fraud prevention competency refers to the ability to inhibit or terminate the acts of disintegrity, deliberately misleading, and distortion of the truth for dishonest exploitation of the law for oneself or others. Guardian Analytics (2011) states that fraud prevention, especially proactive fraud management and communication of anti-fraud policies (Krummeck, 2000) lead to an opportunity for banks to strengthen and advocate customer trust thought demonstrates an organization's knowledge and competence towards fraud prevention. Such competence is an important success factor that entails a higher competitive advantage in an industry (Rauyruen and Miller, 2007); if this is so, the organization's fraud prevention knowledge and know-how can significantly affect customer trust. Similarly, the research by Hoffmann and Birnbrich (2012) find that organizations with knowledge about fraud prevention build customer's trust in the operation of a bank. Additionally, fraud prevention also enables the organization to achieve business goals by increasing revenue, decreasing costs, and reducing losses (Montague, 2010). Moreover, fraudulent firms have poor governance, which decreases credibility as well (Farber, 2005).

In summary, fraud prevention competency has the potential to affect stakeholder credibility and firm performance. Therefore, the hypotheses are presented as follows:

*Hypothesis 6a: Fraud prevention competency has a positive effect on stakeholder credibility.*

*Hypothesis 6b: Fraud prevention competency has a positive effect on firm performance.*

#### Superior Operational Excellence

Operational excellence is the goal of conducting business in a manner that improves quality, obtains higher yields, faster throughput, and less waste (Adkins, 2007). At the technical level, operational excellence is an important mechanism that is applied to allow the coordinating and structured benefits of business excellence management to achieve strategic goals. This relates to initiating, planning, creating



teams, and setting targets, which not only focus on operational excellence but also on emphasizing the appropriateness of a balanced view (Lu, Betts, and Croom, 2011; Friedli and Basu, 2013). The past research demonstrates how operational excellence is a part of an organization that succeeds when it is used in the management of decision-making (Leonard and McAdam, 2002).

There are four steps of operational excellence including: (1) assessing internal needs by finding the gap between the status quo and identified business activities; which is coming up with new ideas and improving implementation and processes by using several techniques such as surveys, questionnaires, interviews (e.g., personal, focus groups or both), and observation; (2) understanding current thought practices of management in information requests such as receiving requests for information, logging requests, conducting reference interviews, conducting research, writing up reports, delivering to customers, and following up for feedback; (3) examining alternative practices by both internal and external benchmarking that involves measuring and comparing an existing process, product or service, pinpointing of best practices that entail sustained performance; and (4) modeling best practice by selecting suitable solutions by assessing financial cost and connecting to benefits for an organization, clients, and information center staff (Decker, 2005). Operational excellence is driven by an organization's management approach that gives rise to business growth (Day et al., 2008). For instance, Asif et al. (2010) explore the methodology of operational excellence; the results yielded that operational excellence is a developing, lean process that provides technical structures and routines (manufacturing practices). This finding reveals that manufacturing practices are developed by an organization over time. It makes a practice of subsequently changing with a positive impact on performance (Shah and Ward, 2003).

Additionally, to ensure obtaining operational excellence, the organization needs to build basic requirements in which comprise three main components, namely; establishment, communication, and assessment. Such requirement helps an organization to promote and facilitate the consistent achievement of operational excellence (Bigelow, 2002). In the evolution of sustained business growth, Duggan (2011) states that a design for operational excellence is an important factor that can enable an organization to



create competitive advantage, which leads it to achieve goals, whether they are profit or growth in all circumstances. This means that such capabilities attain the greatest results (Mitchell, 2015). In a survey of 60 organizations from Germany, Japan, Canada, and USA by Harington (2004), it finds that operational excellence (cycle time analysis, process value analysis, process simplification, strategic planning, and using supplier certification programs) has a significantly positive effect on firm performance, which is measured by financial measures (profit and return on investment) and nonfinancial measures (employee value-adding and customer satisfaction). Meanwhile, customer focus is mentioned as the heart of Lean and Six Sigma, which contributes close relationships with customers that bring superior outcomes (Mi Dahlgaard-Park and Dahlgaard, 2007).

Hence, in this research, superior operational excellence refers to the great ability to modify guidelines and methods of solving problems in order to make the processes of the organization more effective and efficient beyond that which is expected (McAdam and Leonard, 2005; Greiner, Böhmman, and Krcmar, 2007). Achieving operational excellence is critically measured by time (Simpson, 2010). In the case of Hewlett-Packard on high-growth markets, Suri (1998) propose a finding that if new product development project is six months late, it causes a 33 percent loss in profits. If the project runs on time, the loss is only 3.5 percent. In addition, missing a new product due date to market not only affects business credibility, it also influences the magnitude and timing of revenue flows (Newbold, 2008; Smith and Reinertsen, 1998).

In summary, superior operational excellence has the potential to affect stakeholder credibility and firm performance. Thus, the hypotheses are presented as follows:

*Hypothesis 7a: Superior operational excellence has a positive effect on stakeholder credibility.*

*Hypothesis 7b: Superior operational excellence has a positive effect on firm performance.*



### Transparent Business Practice

Transparency is a basic for business operations that enable an organization to attain goal setting (Greiner, Ockenfels and Werner, 2011; Soh, Markus and Goh, 2006). Transparency is defined as the availability of firm-specific information to those outside publicly traded firms (Bushman, Piotroski, and Smith, 2004; Holzner and Holzner, 2006; Piotrowski, 2007). Bushman, Piotroski, and Smith, (2004) propose that straightforward information disclosure by reporting, whether voluntary or mandatory, it should be considered towards intensity, governance, measurement, timeliness, and audit quality. Transparency is divided into two categories, in terms of law; namely, political corruption solutions and corporate disclosure requirements (Stiglitz, 2003). To increase the effectiveness of transparency, disclosure needs to be mandatory such as in full disclosure and truthfulness, performance accountability, equal access to information, and information asymmetry reduction (Penno, 1997) together with the agency costs (Ferrell, 2004). As a note on empirical research in Myers and Majluf (1984), more organizations that are transparent tend to count more on equity than debt because equity is more sensitive to information in a market than debt while firms with greater information asymmetry have higher debt ratios (Bharath, Pasquariello, and Wu, 2009). In addition, Chang, Dasgupta, and Hilary (2006) find that greater equity is significantly associated with lower leverage ratios. Ali, Chen, and Radhakrishnan (2007) as well as Wang (2006) state that firm with voluntary disclosures have superior performance (measured by Tobin's Q). These results are in line with Anderson, Duru, and Reeb (2009) who suggest that family firms with more information disclosures in the S&P 500 have Tobin's Q ratio more than nonfamily firms; so, transparency serves as the strategy to correct poor performance (O'Neill, 2006). This means that transparency, at the heart, is clearly a factor in advocating and facilitating firm performance..

Transparency practice is an important issue in both the public sector and private sector because expenditures and revenues of the organization are quantifiable figures that are obvious and easily seen (Brito and Perraut, 2010; Ellig and Brito, 2008; Haniffa and Cooke, 2002). As Stiglitz (2003) has shown, the market rapidly responds to good information; thus, transparency is then an instrument that highlights the credibility of stakeholders, which requires information for effective decision-making. Osborn





(2004) believes that transparency is the way to reduce opportunities for corruption, which helps to increase trust, in the stakeholder view (Rawlins, 2008). Similarly, Damodaran (2007) reveals that markets have strong positive reactions to the transparency of information disclosures by reporting. This means that investors have trust in their information reporting (Ehrmann and Fratzscher, 2005). Moreover, Heald's (2006) findings demonstrate that transparency has a dramatically positive effect on stakeholder trust.

Therefore, transparent business practice refers to business operations on the basis of truthfulness, mutual trust, direct disclosure in appropriate periods, responsibility to administration, and audibility, in this research. Theoretical research reveals that business operation transparency contributes to reduce agency costs, including monitoring costs, reinsurance costs and residual loss (Diamond and Verrecchia, 1991; Jensen and Meckling, 1976; Sengupta, 1998), and allows organizations to improve performance through straightforward information disclosure and accountability (Bansal and Kistruck, 2006) as well as generate a stakeholder's credibility on the performance of the organization. In accordance with Haniffa and Cooke (2002), greater voluntary disclosure and timelier reporting help to decrease the cost of capital and reduce information asymmetry. This is confirmed by the empirical research of Botosan (2000) who indicated that greater transparency (increased voluntary disclosure and timelier reporting) caused superior performance and increased management credibility (Lang and Lundholm, 1999). In the same vein, Akhigbe, McNulty, and Stevenson (2013) also suggest that increased transparency has a significant strong positive effect on profit efficiency. This finding is in agreement with Schnackenberg and Tomlinson (2014) who suggest that an organization's transparency practice contributes to stakeholder trust. Likewise, Heald (2006) emphasize that transparency is anticipated to lead positively to stakeholder trust by building credibility (Jahansoozi, 2006)

In summary, transparent business practice has the potential to affect stakeholder credibility and firm performance. Hence, the hypotheses are presented as follows:



*Hypothesis 8a: Transparent business practice has a positive effect on stakeholder credibility.*

*Hypothesis 8b: Transparent business practice has a positive effect on firm performance.*

### Stakeholder Credibility

One of the critical factors that entail an organization's success is stakeholder credibility. In the literature review, such stakeholder credibility is derived from two main terms; namely, stakeholder trust and stakeholder confidence. Trust is the basic aspect of a stakeholder's moral treatment in the relationship between an organization and stakeholder (Greenwood and Van Buren III, 2010). In terms of fairness, trust is the solution (Phillips, 1997), consent, and power (Van Buren III, 2001) of organizational obligations to stakeholders. Typically, a stakeholder trusts the organization in order to gain a return on benefits or potential harm protection from their involvement or equities (Greenwood and Van Buren III, 2010). In particular, when stakeholders are involved in an investment with the firm, such as accepted investment, such a firm has a duty to the stakeholder for maximizing benefits in the business operation (Greenwood, 2007). Wicks, Berman, and Jones (1999) propose that trust has three major elements, including: (1) rational prediction of outcomes, on which Hosmer (1995) comments that it is the eventual outcomes' expectation of eventuality, (2) emotional bond as Mulford et al. (1998) who revealed that trust occurs without reason, and sometimes it is caused by personal belief (Peccei and Guest, 2002) or a reduced positive feeling toward others, and (3) moral element, which implies that it is an ethical obligation to protect others (Greenwood and Van Buren III, 2010; Peccei and Guest, 2002; Swift, 2001).

In the view of the environment, an organization can build trust with a stakeholder by adopting an ethical standard, implementing an environmental code of conduct in organizational planning, and understanding whether the public requires clean air and water (Iannuzzi, 2000). From an organizational perspective, trust refers to a collective judgment of one group that another group can be honest, meet commitments, and cannot take advantage of others (Rawlins, 2008; Cummings and Bromily, 1996). In



the same vein, Tschannen-Moran and Hoy (2000) identify trust as one party's willingness to be vulnerable to another party, based on the confidence that the latter party is benevolent, reliable, competent, honest, and open. Then, trust is defined as the reliance by one person, group, or firm, upon a voluntarily accepted duty on the part of another person, groups or firms; to act in a manner that is ethically justifiable; and that undertakes morally correct decisions and actions based upon ethical principles of analysis towards all others engaged in a joint endeavor or economic exchange (Hosmer, 1995).

However, the confidence of stakeholders is identified as a key factor that affects the viability of the business operation, and which is directly related to growth strategy (De Jonge et al., 2008; Franken, Edwards, and Lambert, 2009). Their researches indicate that managers and business owners believed that low business confidence would entail a problem towards increasing their employees or expanding their business into new areas. Barach and Ganitsky (1995) have proposed that there are three methods, which can increase the level of confidence in family firms, including: (1) professional training, (2) involvement in business networks, and (3) mentoring relationships. These three methods can increase the level of stakeholder confidence in the future of the business (Barach et al., 1991). Hence, confidence within an organization is important when management organizations can push for changes in new things that are required (McGovern, 2000).

Thus, in this research, stakeholder credibility refers to trust and confidence of stakeholders toward an organization (Post, Preston, and Sachs, 2002). King, Lenox, and Barnett (2002) mention that choosing to work with a reputable stakeholder helps to enhance credibility that entails superior performance. The research of Hagen and Choe (1998) highlights the importance of stakeholder trust on firm performance, where they find that building a cooperative relationship with a partner in their country achieves a higher level of performance than in a different country. Therefore, trust is good, and more trust is better for achieving the organization's goal (Husted, 1998). This result is consistent with Lins, Servaes, and Tamayo (2015) who find that if firm lacks trust from an investor or other stakeholders, markets usually ends up with a negative shock. Trust is good, and trust may be better if it leads an organization to its goals.



In summary, stakeholder credibility has the potential to affect stakeholder credibility, and firm performance. Hence, the hypothesis is presented as follows:

*Hypothesis 9: Stakeholder credibility has a positive effect on firm performance.*

### Firm Performance

Using a performance measurement system is often recommended for supporting strategy implementation and improving operational performance to achieve a firm's objective goals (e.g., Davis and Albright, 2004; Franco-Santos, Lucianetti, and Bourne, 2012; Ittner, Larcker, and Randall, 2003). In particular, a valid and reliable performance measurement allows an organization to explain and employ strategy effectively, assess management effectiveness, and give fundamental rewards (Malina and Selto, 2004). In addition, the use of an appropriated performance measurement also reflects the ability of the processes, technology, and strategy by which an organization performs under environmental changes over time (Johnson and Kaplan, 1987). Moreover, a measurement system is the core of accounting; without an understanding of what is measured and how it is measured, the proper comprehension of accounting is completely impossible (Ijiri, 1967). This is because accounting is a measurement process, which Ijiri defines as a system for communicating the economic events of an entity.

From the literature review, firm performance is usually measured by financial and nonfinancial measures (Arvidsson, 2011; Dossi and Patelli, 2010; Ittner and Larcker, Meyer, 2003; Kaplan and Norton, 1996). Financial measures are the most useful measurement instruments that are used to measure a firm's operation such as profit (Edwards, 2013), budget variances, return on assets (Ittner and Larcker, 1995), return on equity (Delen, Kuzey, and Uyar, 2002), return on investment, return on sales, net income growth, sales growth (Neumann, Roberts, and Cauvin, 2011), revenue growth (Ghosh, Gu, and Jain, 2005), employment, and productivity or profitability (Loof and Heshmati, 2002). While, a great number of research studies have measured firm performance via non-financial measures (Kaplan and Norton, 1996), such as employee turnover (Hancock et al., 2013), customer satisfaction, process efficiency, and



capacity utilization (Abdel-Maksoud, Dugdale, and Luther, 2005). They needs for suitably evaluating firm performance. This issue is in accordance with Ittner, Larcker, and Meyer (2003) who state that if non-financial measures are ignored or have a reduced priority level, then the decision-making of firm managers is likely to result in more short-run profit than long-run shareholder wealth. Non-financial measures are then a key role in achieving long-term profitability and a competitive advantage as well (Brammer and Millington, 2005).

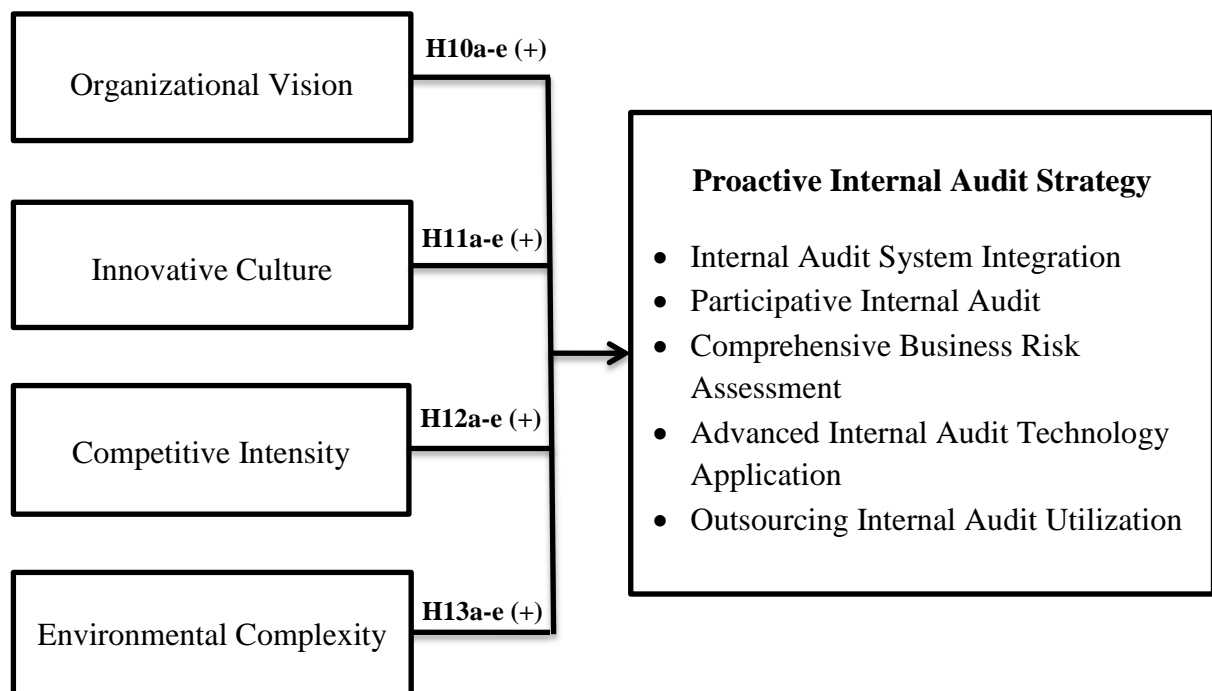
Notwithstanding, firm performance can be measured by financial and non-financial measures such as profitability, the rate of sales growth, market share, customer acceptance, and innovation improvement (Liouville and Bayad, 1998). In this research, nevertheless, firm performance refers to the success and operational outcomes of an organization to achieve its goals by using the utilized resources effectively, efficiently, and economically (Hubbard, 2009). As Srivastava, Franklin, and Martinette's (2013) findings, an organization can attain a sustainable competitive advantage through resources and capabilities such as in strategic planning, management skills, organizational design, and incentives.

### **The Effects of the Antecedent Variables on Proactive Internal Audit Strategy**

This research proposes whether proactive internal audit strategy is influenced by both internal and external factors of an organization. These factors comprise four factors. Organizational vision and innovative culture are internal factors while an external factor consists of competitive intensity and environmental complexity. According to Bantel (1993), effective management depends on the uncertainty of the organization's internal and external environmental factors. Thus, in this research, tests of what and how the antecedents of proactive internal audit strategy have a significant effect on itself are shown in Figure 4 below.



Figure 4: Effects of the Antecedent Variables on Proactive Internal Audit Strategy



### Organizational Vision

Vision is one element of an organization's structure that is used to develop opportunities for exploring competitive advantage (Lipton, 2004; McGivern and Tvor, 1998). The purpose of the organizational vision is usually then related to an ideal target that brings accomplishment in the future (Elenkov, Judge, and Wright, 2005; Kirkpatrick, Wofford, and Baum, 2002; Sosik and Dinger, 2007). As researched by Baum et al. (1998), vision causes venture growth in which Baum and Locke (2004) confirm. In the same vein, Colline and Porras (1994) indicate that vision can create motivation and it is the main element of executive premium. In contrast, if there is no focus on vision, an organization might never develop strong outstanding competence (Lipton, 1996). Nevertheless, organizational vision stimulates the enthusiasm and commitment for sustainable development (Macintyre, Parry, and Angelis, 2011). Other than that, vision also can link to organizational effectiveness as well (Baum, Locke, and Kirkpatrick, 1998; Kantabutra, Sooksan, and Avery, 2010; Kantabutra and Avery, 2006; Wiedower, 2001; Senge, 1990).



Lipton (1996) investigates through a survey of 1,500 senior leaders from 20 different countries. He find that vision is beneficial to the organization because: (1) vision can enhance a wide range of performance measures; especially, long-term vision plays a key role in a stakeholder's decision-making for selecting the firm so as to invest; (2) vision can encourage change since it serves as road map for an organization. Especially, clear vision facilitates and drives organizational changes (Bass and Avolio, 1994; Pothong and Ussahawanitchakit, 2011). Then, if an organization lacks vision, transformation often fails accordingly; (3) vision can provide the foundation for a strategic plan. That is because preliminary vision is crucial in that it entails strategic planning success; (4) vision can motivate individuals and enhance the recruitment of talent by communicating properly to make for clear understanding; (5) vision can help decision-making in each context. Wiedower (2001) points out that sharing a vision contributes to an organization to build a context for effective decision-making. For example, Gerstner (1993), IBM's chairperson, mention that the last thing IBM needs right now is a vision. He creates a vision for the future by spending the time to communicate with the stakeholders of the organization such as customers, employees, shareholders, and business partners to create an understanding of how IBM has to take the best way to support them. This demonstrates the ability of linkage between vision and a new strategy that brings about firm success, which can be seen through switching net loss into net profit the following year. After he announces the vision, net profit increased consistently.

Consequently, in this research, organizational vision means commitment and the intention of determining a clear view of the future of an organization with an emphasis on excellence, opportunity, and providence, which successfully leads an organization to its target. Kantabutra (2006) indicates that vision is future orientation and it reflects sharing the vision with stakeholders. Kouzes and Posner (2012) state that organizational vision should be able to build inspiration because it absorbs commitment, creates a standard of operational excellence, and links the present to the future (Nanus, 1992). This vision is, then, an internal factor that is very important to an organization for achieving goal-setting (Altiok, 2012). Therefore, organizational vision can improve



proactive internal audit strategy, which leads to transforming the internal audit system that, in turn, gives rise to dynamic capabilities. The hypotheses are presented as follows:

*Hypothesis 10a: Organizational vision has a positive effect on internal audit system integration.*

*Hypothesis 10b: Organizational vision has a positive effect on participative internal audit.*

*Hypothesis 10c: Organizational vision has a positive effect on comprehensive business risk assessment.*

*Hypothesis 10d: Organizational vision has a positive effect on advanced internal audit technology application.*

*Hypothesis 10e: Organizational vision has a positive effect on outsourcing internal audit utilization.*

### Innovative Culture

To ensure whether an organization achieves business goal setting, an innovative culture is the one important factor that helps it meet expectations by increasing empowerment and enhancing strategic advantage (Kalyani, 2011). To strengthen such innovative culture, Fetscher (2008) has proposed six steps consisting of (1) agreement about behavior that contributes to creativities, (2) spending time on creative thinking, (3) promoting the development of goals that challenge, (4) building an innovation space when new ideas are emerging, (5) retaining key employees who are creative, and (6) being aware of risk-taking, which may build big ideas that cause the greatest things for the future. The culture of an organization that supports creating innovation has two dimensions; namely, openness to changes and a tolerance of risk (Buhler, 2002). To build an innovative culture, Buhler (2002) mentions that structure is necessary because it can enhance or destroy innovation. Horibe (2009) focuses on





effective innovation in balance, changing the process and mechanisms by emphasizing increased efficiency, reduced risk, and building an infrastructure to advocate the transition from old or non-innovative culture to a new innovative one.

According to Etro (2004), improving the capacity to innovate is a key role for an organization in coping with its environmental changes. Innovation is then the initiation of improved, changed, new products, services, processes, procedures, or ideas by an organization. As Behn (2004) states, an innovative organization always enhance employees for the independent creative thinking (Kalyani, 2011). Likewise, an innovative culture facilitates autonomy and risk-taking; it helps organizations to achieve goals that seemed to be unexpected. Besides, it can also hasten values, ideas, and process; and enrich teamwork values due to its value of openness to the world (Davila, Epstein, and Shelton, 2007).

Therefore, in this research, innovative culture refers to values, beliefs, ideals, and shared understanding of organizational members in support of changes that are useful to an organization (Martins and Terblanche, 2003; Schein, 2006) by creating an atmosphere which supports the personnel to dare in lateral thinking (De Bono, 2015; Lendel and Varmus, 2011), to make decisions, to accept risks from doing something new or different (Heinrichs, 2010), to adapt oneself all the time, and to accept ideas from stakeholders (Ayuso, Rodríguez, and Ricart, 2006). Drawing on the work of Chen et al. (2012), a strong innovative culture is representative of transformational leadership behaviors that would be able to encourage using technological innovation effectively at the level of a business strategy unit. The organizational memberships are more likely to be receptive when an innovative culture is established within their organization, since such innovative cultures can promote organizational members to participate in complicated technologies (Bass, 1985). Then, the only ways in which an organization can develop internal capacity for maintaining high performance is by generating these technical systems in a manner of strategic services (Tushman, 1997). This topic corresponds to Prabhu's (2010) findings that culture is one key driver that gives rise to the development of new products or services that entail creating added value for an organization (Atkinson, 1990). Such a culture of innovation comprises three attitudes (a future market orientation, willing to cannibalize an existing product's success, and risk



tolerance), and three practices (empowering product champions, building internal competition, and providing incentives to firms). Thereby, an organization needs innovative culture to advocates new things that arise in the future; it serves as a driving force for generating a vital strategy that entails an organization's competitive advantage (Birdi et al., 2008).

Thus, innovative culture can facilitate proactive internal audit strategy, which contributes to strategic capabilities that bring about competitive advantage. The hypotheses are presented as follows:

*Hypothesis 11a: Innovative culture has a positive effect on internal audit system integration.*

*Hypothesis 11b: Innovative culture has a positive effect on participative internal audit.*

*Hypothesis 11c: Innovative culture has a positive effect on comprehensive business risk assessment.*

*Hypothesis 11d: Innovative culture has a positive effect on advanced internal audit technology application.*

*Hypothesis 11e: Innovative culture has a positive effect on outsourcing internal audit utilization.*

#### Competitive Intensity

In general, competitiveness is usually used to explain the contexts of organizations, which organizations tend to find themselves in a zero-sum game, whether directly or indirectly, such as behaviors responding to competitors (Chen, Kuo-Hsien, and Tsai, 2007), collaboration (Ang, 2008), and various types of operations (George, 2005). Prior researches (Nauenberg, Basu, and Chand, 1997; Ramaswamy, 2001; Tsaur and Wang, 2011) suggest that the scope of price competition, a number of competitors,



and intensity of rivalry are key elements in measuring competitive intensity. Moreover, industry-level competition has an influence in determining the operation pattern of an organization (George, 2005; Peng, Tan, and Tong, 2004; Tan and Peng, 2003), which contributes to generating new things (Sharpe and Currie, 2008; Geroski, 1990).

Competitive intensity determines the accomplishment of initial strategic planning. Several researchers indicated that, even with high competitive intensity, the chance to success is even greater (Burt, 1992; Bantel, 1998). For example, Ramaswamy and Renforth's (1996) research shows that increasing competitive intensity brings about improving the level of technical effectiveness of the operation. Barnett (1997) finds that industry competitive intensity triggers firms for survival, meaning that a firm's high survival within industry-competitive intensity depends on its specific ability resources (Ang, 2008). According to Cohen (1996), the larger firms that can control resources (strategy) and are able to bear the risk, have more opportunities to succeed; so, high competitive intensity has extreme relevance to strategic decision-making, in particular, the use of a technology-based system (Bantel, 1998; Bourgeois, 1980). As the research by Porter (1980) emphasizes, firms that face high levels of industry competitive intensity might make a difference by integrating, building, and reconfiguring their capabilities into new capabilities (strategy) in order to achieve superior results.

Moreover, competitive intensity is also an important factor for investment considerations (Mahapatra, Das, and Narasimhan, 2012), especially in emerging markets that use strategy for driving free market economies (Ramaswamy, 2001). Jermias's (2008) empirical research of competitive intensity has revealed that it affects business strategy choice, financial leverage-performance relationships, formal controls (Chenholl, 2003), and accounting usage of firms (Guilding and McManus, 2002). Atkins and Liang (2010) find that competitive intensity is a primary determinant of economies of scale; that is, the decision to use outsourcing depend on the competitive intensity of industries whether firms falling in any given situation, the results remained the same. Shy and Stenbacka (2003) indicate that outsourcing can reduce price competition. This finding is in line with Cachon and Harker's (2002) research that outsourcing decreases price competition, which means a competitive environment affects outsourcing decisions. In the same vein, Huang (2011) illustrates that an industry



competitive environment has a positive impact on the spread of new technologies. Nickell (1996) finds that an increasing the number of competitors dramatically related to productivity growth which is measured by technological capabilities (Blundell, Griffith, and Van Reenen, 1999).

Hence, competitive intensity reflects the use of various strategies, causing accomplishment (Cachon and Harker, 2002; Morris, 1998). For this research, competitive intensity refers to the degree of competition that an organization faces a competitor in business (Barnett, 1997; Auh and Menguc, 2005). If so, the rise of competitive intensity makes a change in the vehicle that leads organizations to attain their goals (Earn and Young, 2011). Thereby, competitive intensity might be able to enhance proactive internal audit strategy, which gives rise to strategic capabilities that bring about competitive advantage and firm success. The hypotheses are presented as follows:

*Hypothesis 12a: Competitive intensity has a positive effect on internal audit system integration.*

*Hypothesis 12b: Competitive intensity has a positive effect on participative internal audit.*

*Hypothesis 12c: competitive intensity has a positive effect on comprehensive business risk assessment.*

*Hypothesis 12d: competitive intensity has a positive effect on advanced internal audit technology application.*

*Hypothesis 12e: Competitive intensity has a positive effect on outsourcing internal audit utilization.*



### Environmental Complexity

According to Thompson's (1967) proposal, if the organization needs to survive and succeed, it must adapt to the environment (Cannon and John, 2007; Lawrence and Loarch, 1967). However, since the environment always changes, complexity then occurs and plays an important role in the investigation of the effects of environmental complexity on managing organizations such as in decision-making management (Duncan, 1972; Perrow, 1970; Powell and DiMaggio, 2012), strategy choice (Dess and Origer, 1987; Miller, 1988; Sanchez, 1997), organizational characteristics such as information-processing alternatives, organization structure (Flynn and Flynn, 1999; Sharfman and Dean, 1991), and firm performance (Ashmos, Duchon, and McDaniel Jr., 2000; Bourgeois, 1985; Child, 1972). Thus, complexity is one of the key characteristics of the environment (Cannon and John, 2007).

For components and relevant dimensions of environmental complexity, Emery and Trist (1965) are the first researchers who attempt to describe and define complexity, which thereafter is identified as environmental heterogeneity or diversity by Lawrence and Lorsch (1967) as well as Thompson (1967). Such environmental heterogeneity or diversity describes and has improved definitions and measures by a large number of researchers. For instance, Osborn and Hunt (1974) measured environmental complexity as three important elements consisting of environmental risk, dependency, and interorganizational relationships; and six components by Flynn and Flynn (1999), including manufacturing diversity, goal diversity, process diversity, supplier diversity, and labor diversity. Meanwhile, Cannon and John (2007) suggest that environmental complexity is a multidimensional construct, which is measured by H-index, the 4-firms (market share held by the industry's four largest competitors), the 8-firms (market share held by industry's eight largest competitors), number of establishment size categories, input heterogeneity, market diversity, ratio of primary products shipment to total, number of employees, average asset size per industry establishment, ratio of dollar value of assets to the dollar value of outputs, and percentage of workforce in technical or scientific occupations. In addition, it also explains the effect of uncertainty, analyzability of the manager, predictable situations, and the information for decision-making (Daft and Weick, 1984; Duncan, 1972; Milliken, 1987).



From the foregoing, it leads to creating an understanding that complexity is derived from the uncertainty of an organization's internal and external environment, with the characteristics of external environment that include technology, competitors, customers, suppliers, and sociocultural components (Cannon and John, 2007). In this research, therefore, environment complexity refers to the heterogeneity or diversity of the phenomena that are external environment factors, which have an influence or impact on an organization. Drawing on the literature review in the concept of environment and strategy, they are necessary to integrate the strategy to suit opportunities and be used as a navigator in operations in various environments (Tan and Litsschert, 1994). The strategy-making process expects to help an organization for coming up with environmental challenge and complexity for success (Ashmos and Duchon, 2000; Dess and Origer, 1987). Child (1972) indicates that environmental complexity is the varieties of activities that greatly affect the strategic management of an organization. Aldrich (1979) states that the organization needs specializing and sophisticated technical knowledge in order to cope with environmental complexity (Bobbitt and Ford, 1980; Sharfman and Dean, 1991). Similarly, Mintzberg (1979) notes the breadth and depth of knowledge influencing effective interoperability in the environment, in particular, applying technology for competitive advantage (Kuan and Chau, 2001).

Additionally, Harrington and Kendall (2006) demonstrate that firms engaging in a highly complex environment bring more strategy implementation success, especially where employees are involved in the process. Complexity, as measured by a firm's international strategy, is positively associated with top management team heterogeneity (Carpenter, 2002). Moreover, Sharma and Vredenburg (1998) find that environmental uncertainty (complexity, dynamics) is associated with the unique organizational capabilities that emerge by which such new capabilities (strategies) utilize in creating a competitive advantage. In line with De Sarbo et al. (2005), a highly uncertain environment leads an organization to employ multiple strategies for attaining their goals (Mile and Snow, 1978)

Therefore, environmental complexity might be able to enrich proactive internal audit strategy, which gives rise to the capacity of strategic management that contributes



to organization's competitive advantages and a firm's sustainable growth. The hypotheses are presented as follows:

*Hypothesis 13a: Environmental complexity has a positive effect on internal audit system integration.*

*Hypothesis 13b: Environmental complexity has a positive effect on participative internal audit.*

*Hypothesis 13c: Environmental complexity has a positive effect on comprehensive business risk assessment.*

*Hypothesis 13d: Environmental complexity has a positive effect on advanced internal audit technology application.*

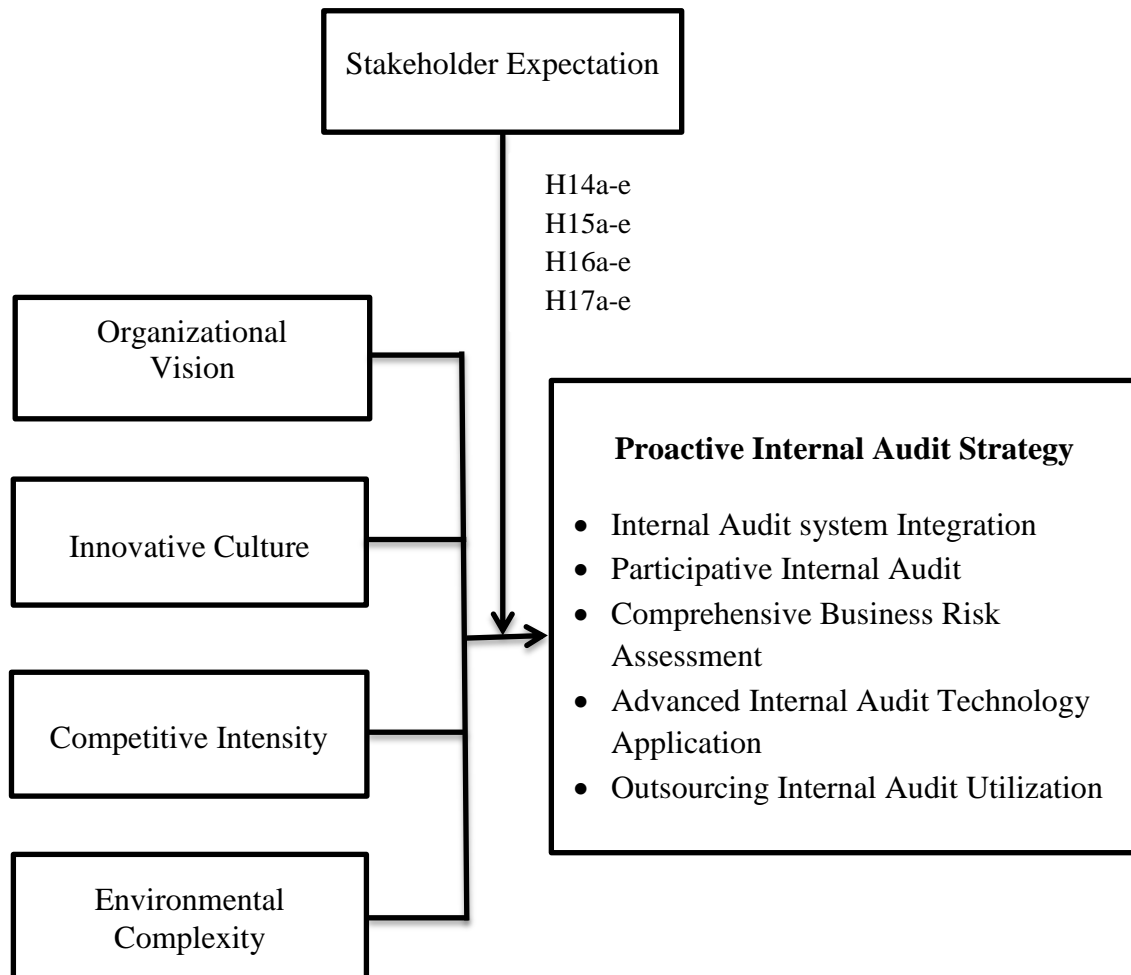
*Hypothesis 13e: Environmental complexity has a positive effect on outsourcing internal audit utilization.*

### **The Moderating Effect of Stakeholder Expectation on The Relationships Among Antecedences and Proactive Internal Audit Strategy**

Stakeholder expectation in this research is determined as the moderating variable on the relationships among antecedences (organizational vision, innovative culture, competitive intensity, and environment complexity) and proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization ), as shown in Figure 5 below.



Figure 5: Moderating Effects of Stakeholder Expectation on the Relationships Among Antecedences and Proactive Internal Audit Strategy



#### Stakeholder Expectation

When the past of financial crises, stakeholders (e.g., investors, shareholders, various users of financial reporting groups) who woke up, attempted to called for legitimacy or responsibility (Tsoi, 2010) and accountability or ethics (Rodgers and Gago, 2004) from the organization. These expectations became a phenomenon, which illustrates stakeholder's requirements to operate an organization in strategy choices (Frooman, 1999; Eljido-Ten, Kloot, and Clarkson, 2010). Thus, an organization not only responds to any one group, but also needs to interact with multiple stakeholders, which have both direct and indirect influences on an organization (Rowley, 1997).





Drawn from the literature review, stakeholders include those individuals, groups, and other organizations who have an interest in the actions of an organization and who have the ability to influence it (Savage et al., 1991). The primary stakeholders consist of shareowners, employees, customers, suppliers, lenders, and society (Freeman and Reed, 1983). Meanwhile, the meaning of stakeholder by Freeman (2010) comprises two senses: (1) the wide sense of stakeholder that refers to a group or individual who can influence achievement of an organization's objectives, including public interest groups, government agencies, protest groups, unions, trade associations, competitors, employees, customer segments, shareowners, and other stakeholders, and (2) the narrow sense of the stakeholder identified as group or individual on which the organization is dependent for its continued survival such as employees, customer segments, certain suppliers, key government agencies, shareowners, and certain financial institutions.

According to Freeman (2001), stakeholders are groups or individuals who can affect the managerial behavior of the organization (Tsai et al., 2005), in particular, strategic management (Frooman, 1999). In the work of Frooman and Murrell (2003, 2005), by using an experimental approach confirmed that the typology of the stakeholder has a dramatic impact on the strategic choices of the organization (Hendry, 2005). These approaches are in accordance with Elijido-Ten, Kloot and Clarkson's (2010) triangulation research that demonstrates whether the relationships between an environment and a firm's strategic choices depend on the stakeholder. This is in the similar vein with Jawahar and Mclaughlin's (2001) research, which claimed an organization's strategy depending on its important stakeholders and the network of stakeholders surrounding it (Rowley, 1997).

Elijido-Ten (2012) indicates that various stakeholders have a positive association with the strategies adopted by an organization by which such relationship influences environmental initiation. Céspedes-Lorente, de Burgos-Jiménez, and Álvarez-Gil (2003) suggest that the behavioral responses of the organization to stakeholder's environmental demands depend on the power of stakeholders and recognizing economic advantages (Kassinis and Vafeas, 2006). In addition, innovative solutions, shared vision, and reduction costs might open the path to win-win



collaboration (Welcomer et al., 2003). Hambrick and Mason (1984) illustrate that using strategies of an organization reflects the value of a top manager who pays attention to the management of a stakeholder's expectations.

Moreover, Sarens and De Beelde (2006) find that senior management's expectations have a significant effect on the internal audit; expect that the internal audit system able to meet the increased environmental complexity, fulfil the role in monitoring and improving risk management and internal control, and require internal auditor monitoring of the corporate culture. Mitchell, Agle, and Wood (1997) note that a stakeholder's demands make an organization change to high-tech machines such as computers (Brynjolfsson and Hitt, 2000) in order to integrate and improve more effective internal audit systems, especially towards the strategy of an organization. Such integration enriches strategic flexibility and helps an organization to cope with rapid external environmental changes. It also can motivate an employee's participation and can make jobs easier (Milgrom and Roberts, 1995). KPMG's (2006) survey finds that 42 percent of the respondents are very satisfied that the internal audit function plan deepened the risk of an organization, meaning that strategic planning reflects stakeholder's expectations, which may be greatly beneficial to an executive for decision-making (Fadun, 2014).

In the last decades, stakeholders often have considered an organization's responsibility and ethics, which influence the reporting performance of the organization (Rodgers and Gago, 2004; Tsoi, 2010). Fadun (2014) indicates that a stakeholder's expectations could improve the firm's image and competitive advantage. Likewise, Windsor (2004) finds that a stakeholder could more effectively influence in the organization towards smart growth over time that leads to sustainability for business operation. Peters and Waterman (2006) state that the voices of customers have a dramatic effect on improvements and development of new products and services that bring an organization to success. This means that a customer's expectation is the one factor that affects strategic implementation.

Therefore, the preliminary internal audit needs to understand a stakeholder's expectation (Mallin, 2011). Stakeholder expectation, in this research, is defined as the needs of a stakeholder towards business operations, management, governance, and firm



performance. Based on the literature reviewed above, stakeholder expectation has the potential to affect relationships among organizational vision, innovative culture, competitive intensity, environmental complexity, and proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization). Hence, the hypotheses are presented as follows:

*Hypothesis 14a: Stakeholder expectation positively moderates the relationship between organizational vision and internal audit system integration.*

*Hypothesis 14b: Stakeholder expectation positively moderates the relationship between organizational vision and participative internal audit.*

*Hypothesis 14c: Stakeholder expectation positively moderates the relationship between organizational vision and comprehensive business risk assessment.*

*Hypothesis 14d: Stakeholder expectation positively moderates the relationship between organizational vision and advanced internal audit technology application.*

*Hypothesis 14e: stakeholder expectation positively moderates the relationship between organizational vision and outsourcing internal audit utilization.*

*Hypothesis 15a: Stakeholder expectation positively moderates the relationship between innovative culture and internal audit system integration.*

*Hypothesis 15b: Stakeholder expectation positively moderates the relationship between innovative culture and participative internal audit.*

*Hypothesis 15c: Stakeholder expectation positively moderates the relationship between innovative culture and comprehensive business risk assessment.*



*Hypothesis 15d: Stakeholder expectation positively moderates the relationship between innovative culture and advanced internal audit technology application.*

*Hypothesis 15e: Stakeholder expectation positively moderates the relationship between innovative culture and outsourcing internal audit utilization.*

*Hypothesis 16a: Stakeholder expectation positively moderates the relationship between competitive intensity and internal audit system integration.*

*Hypothesis 16b: Stakeholder expectation positively moderates the relationship between competitive intensity and participative internal audit.*

*Hypothesis 16c: Stakeholder expectation positively moderates the relationship between competitive intensity and comprehensive business risk assessment.*

*Hypothesis 16d: Stakeholder expectation positively moderates the relationship between competitive intensity and advanced internal audit technology application.*

*Hypothesis 16e: Stakeholder expectation positively moderates the relationship between competitive intensity and outsourcing internal audit utilization.*

*Hypothesis 17a: Stakeholder expectation positively moderates the relationship between environmental complexity and internal audit system integration.*

*Hypothesis 17b: Stakeholder expectation positively moderates the relationship between environmental complexity and participative internal audit.*

*Hypothesis 17c: Stakeholder expectation positively moderates the relationship between environmental complexity and comprehensive business risk assessment.*



*Hypothesis 17d: Stakeholder expectation positively moderates the relationship between environmental complexity and advanced internal audit technology application.*

*Hypothesis 17e: Stakeholder expectation positively moderates the relationship between environmental complexity and outsourcing internal audit utilization.*

## **Summary**

This chapter proposes the conceptual model, detailing the effects of proactive internal audit strategy on firm performance. The theoretical foundation, relevant literature review, and hypotheses development are presented. Consequently, this research derives the conceptual framework from dynamic capabilities that is the theory of the firm. Additionally, this research proposes a set of 17 testable hypotheses. Proactive internal audit strategy is the main concern, which focused on the antecedents and consequences. This research also examines the impacts of fraud prevention competency, superior operational excellence, and transparent business practice that have an influence on stakeholder credibility and firm performance. Moreover, organizational vision, innovative culture, competitive intensity, and environmental complexity are antecedents that have an impact on proactive internal audit strategy. The summary of all hypotheses relationships is shown in Table 3.

The next chapter explains the research methods, including the population/sample selection and data collection procedure, the variable measurements of each construct, methods, statistics, equations to test the hypotheses, as well as a summary of the definitions and operational variables of the constructs.



Table 3: The Summary of Hypothesized Relationships

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H1a	Internal audit system integration has a positive effect on fraud prevention competency.
H1b	Internal audit system integration has a positive effect on superior operational excellence.
H1c	Internal audit system integration has a positive effect on transparent business practice.
H1d	Internal audit system integration has a positive effect on stakeholder credibility.
H1e	Internal audit system integration has a positive effect on firm performance.
H2a	Participative internal audit has a positive effect on fraud prevention competency.
H2b	Participative internal audit has a positive effect on superior operational excellence.
H2c	Participative internal audit has a positive effect on transparent business practice.
H2d	Participative internal audit has a positive effect on stakeholder credibility.
H2e	Participative internal audit has a positive effect on firm performance.
H3a	Comprehensive business risk assessment has a positive effect on fraud prevention competency.
H3b	Comprehensive business risk assessment has a positive effect on superior operational excellence.
H3c	Comprehensive business risk assessment has a positive effect on transparent business practice.



Table 3: The Summary of Hypothesized Relationships (continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H3d	Comprehensive business risk assessment has a positive effect on stakeholder credibility.
H3e	Comprehensive business risk assessment has a positive effect on firm performance.
H4a	Advanced internal audit technology application has a positive effect on fraud prevention competency.
H4b	Advanced internal audit technology application has a positive effect on superior operational excellence.
H4c	Advanced internal audit technology application has a positive effect on transparent business practice.
H4d	Advanced internal audit technology application has a positive effect on stakeholder credibility.
H4e	Advanced internal audit technology application has a positive effect on firm performance.
H5a	Outsourcing internal audit utilization has a positive effect on fraud prevention competency.
H5b	Outsourcing internal audit utilization has a positive effect on superior operational excellence.
H5c	Outsourcing internal audit utilization has a positive effect on transparent business practice.
H5d	Outsourcing internal audit utilization has a positive effect on stakeholder credibility.
H5e	Outsourcing internal audit utilization has a positive effect on firm performance.
H6a	Fraud prevention competency has a positive effect on stakeholder credibility.



Table 3: The Summary of Hypothesized Relationships (continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H6b	Fraud prevention competency has a positive effect on firm performance.
H7a	Superior operational excellence has a positive effect on stakeholder credibility.
H7b	Superior operational excellence has a positive effect on firm performance.
H8a	Transparent business practice has a positive effect on stakeholder credibility.
H8b	Transparent business practice has a positive effect on firm performance.
H9	Stakeholder credibility has a positive effect on stakeholder credibility.
H10a	Organizational vision has a positive effect on internal audit system integration.
H10b	Organizational vision has a positive effect on participative internal audit.
H10c	Organizational vision has a positive effect on comprehensive business risk assessment.
H10d	Organizational vision has a positive effect on advanced internal audit technology application.
H10e	Organizational vision has a positive effect on outsourcing internal audit utilization.
H11a	Innovative culture has a positive effect on internal audit system integration.
H11b	Innovative culture has a positive effect on participative internal audit.
H11c	Innovative culture has a positive effect on comprehensive business risk assessment.
H11d	Innovative culture has a positive effect on advanced internal audit technology application.
H11e	Innovative culture has a positive effect on outsourcing internal audit utilization.





Table 3: The Summary of Hypothesized Relationships (continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H12a	Competitive intensity has a positive effect on internal audit system integration.
H12b	Competitive intensity has a positive effect on participative internal audit.
H12c	Competitive intensity has a positive effect on comprehensive business risk assessment.
H12d	Competitive intensity has a positive effect on advanced internal audit technology application.
H12e	Competitive intensity has a positive effect on outsourcing internal audit utilization.
H13a	Environmental complexity has a positive effect on internal audit system integration.
H13b	Environmental complexity has a positive effect on participative internal audit.
H13c	Environmental complexity has a positive effect on comprehensive business risk assessment.
H13d	Environmental complexity has a positive effect on advanced internal audit technology application.
H13e	Environmental complexity has a positive effect on outsourcing internal audit utilization.
H14a	Stakeholder expectation positively moderates the relationship between organizational vision and internal audit system integration.
H14b	Stakeholder expectation positively moderates the relationship between organizational vision and participative internal audit.
H14c	Stakeholder expectation positively moderates the relationship between organizational vision and comprehensive business risk assessment.



Table 3: The Summary of Hypothesized Relationships (continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H14d	Stakeholder expectation positively moderates the relationship between organizational vision and advanced internal audit technology application.
H14e	Stakeholder expectation positively moderates the relationship between organizational vision and outsourcing internal audit utilization.
H15a	Stakeholder expectation positively moderates the relationship between innovative culture and internal audit system integration.
H15b	Stakeholder expectation positively moderates the relationship between innovative culture and participative internal audit.
H15c	Stakeholder expectation positively moderates the relationship between innovative culture and comprehensive business risk assessment.
H15d	Stakeholder expectation positively moderates the relationship between innovative culture and advanced internal audit technology application.
H15e	Stakeholder expectation positively moderates the relationship between innovative culture and outsourcing internal audit utilization.
H16a	Stakeholder expectation positively moderates the relationship between competitive intensity and internal audit system integration.
H16b	Stakeholder expectation positively moderates the relationship between competitive intensity and participative internal audit.
H16c	Stakeholder expectation positively moderates the relationship between competitive intensity and comprehensive business risk assessment.
H16d	Stakeholder expectation positively moderates the relationship between competitive intensity and advanced internal audit technology application.
H16e	Stakeholder expectation positively moderates the relationship between competitive intensity and outsourcing internal audit utilization.
H17a	Stakeholder expectation positively moderates the relationship between environmental complexity and internal audit system integration.



Table 3: The Summary of Hypothesized Relationships (continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>
H17b	Stakeholder expectation positively moderates the relationship between environmental complexity and participative internal audit.
H17c	Stakeholder expectation positively moderates the relationship between environmental complexity and comprehensive business risk assessment.
H17d	Stakeholder expectation positively moderates the relationship between environmental complexity and advanced internal audit technology application.
H17e	Stakeholder expectation positively moderates the relationship between environmental complexity and outsourcing internal audit utilization.



## CHAPTER III

### RESEARCH METHODS

The previous chapter describes the conception of value creation strategy with a theoretical foundation, literature review, conceptual framework, and hypotheses development; including research methodologies that help to completely understand the hypothesis testing. This chapter explains the research methods which are organized as follows. Firstly, population selection and data collection procedures consist of the population samples, the data collection, and the test of non-response bias, respectively. Secondly, the variable measurements are developed. Thirdly, the instrumental verification includes validity and reliability testing, analytical statistics, and equations relative to regression analysis. Finally, the table of summary of the definitions and operational variables of the constructs is involved.

#### **Population Selection and Data Collection Procedure**

##### Population and Sample

The sample of this research is Thai-listed firms which are chosen from the database of The Stock Exchange of Thailand (SET) that is available on the website: <http://www.set.or.th/th/company/companylist.html>. This database provides complete addresses which can confidently affirm and assert the data of whether the firms still exists in the list, which there are 674 firms of May 1, 2015. There are 113 MAI firms and 14 rehabilitation firms that are not included in this research. As a result, the total population of 547 firms was sampled for the distribution of a mailed survey. These samples are illustrated in eight categories, as in Table 4, consisting of the agro and food industry, consumer products, financials, industrials, property and construction, resources, services, and technology (SET, 2015).



Table 4: The Population and Sample Classification by Industry Group

Industry group	Number of samples
1. Agro and food industry	49
2. Consumer products	42
3. Financials	59
4. Industrials	82
5. Property and construction	147
6. Resources	33
7. Services	95
8. Technology	40
Total	547

The Stock Exchange of Thailand (SET) is estimated to support the promotion of economic growth, stability, social development, and enhance the quality of life of people by emphasizing the key role of funding that can meet the financial opportunity to serve as a center for trading listed securities. It is the expansion of listed firms and the investor base that strengthens intermediary institutions as well as offering a wide range of products and services to create value and to expand financial opportunities for various business and investors for sustainable growth and success.

In this research, Thai-listed firms are interesting to investigate for several reasons. First, the companies meet the criteria of the Securities and Exchange Commission under the requirement of the principles of corporate governance by The Organization for Economic Co-operation and Development (OECD). It is noted that the companies have some good properties in terms of both number and quality such as in great performance, financial stability, transparency disclosure, no conflict of interest, corporate image, and an effective internal audit; and the most importantly, it certainly ensures that every firm has an internal audit system (OECD, 2004).

Second, a listed company can survive and unstopable destruction of a deep financial crisis in which the most devastation can cause a severe worldwide economic downturn here. It reflects on the firm's ability for adapting and developing the other strategies to suit the situation (Hambrick and D'Aveni, 1992). As a result, Noorbakhsh, Paloni and Youssef (2001) demonstrate that industry in each country will survive in the current environment of the world economy. It is based on strategic capabilities and the efficiency of the organization.



Third, the obtaining of multi-industry information brings about the maximizing of observed variance (Maignan and Ferrell, 2000; Thornhill and White, 2007) which strengthens the generalizability of the results (Schafer and Olsen, 1998; Sinharay, Stern, and Russell, 2001). This is in accordance with the study of Pangarkar and Wu (2012), it is pointed out that the sample which came from multi-industries led to an observed variance that brought more generalizable conclusions than a single-industry.

Finally, there has been a paucity of known previous empirical research which investigated proactive internal audit strategy on firm performance in Thailand. Hence, for the reasons mentioned above, Thai-listed firms are considered an appropriate sample in this research.

#### Data Collection

The 68-item questionnaire was employed as an instrument for collecting data via a large-scale industrial mail survey of Thai-listed firms. The reason for choosing the survey method is because a mail survey was deemed to be reaching a large number of respondents at low cost (Dillman, 2011), to decrease distribution bias, to put less pressure for an immediate response on the potential informants, to give respondents a greater feeling of independence (Krumpal, 2013), and to reduce a desirability bias that might cause respondents to misunderstand the meaning of alternatives that the researcher needs (Blamey et al., 1996; Chung and Monroe, 2003; Neuman, 2009). To reduce such bias, the respondents' information is kept confidential (Fink, 2012) by not revealing or sharing with a third party without obtaining written permission (Neuman, 2009). In addition, in the recommendation of Edwards (1953) as well as Mosher and Sirkin (1984), using a forced-choice question format helps to minimize desirability bias (Stocké, 2007), especially, a survey question format such as the scale of the Likert format (Hodge and Gillespie, 2003). It helps preclude or increase the variability of respondents (Nunnally, 1970)

The key informants are chief internal audit executive, internal audit director, or equivalent of Thai-listed firms. They were selected as the key informants because they are the main persons who are responsible for carrying out the internal audit function of the organization. Moreover, they know various aspects of the management of their business and can demystify internal audit system details (Allen, 2013), which can also



determine the internal audit strategy and policy that affects the achievements of an organization's goals. Moreover, they can provide the completeness and accuracy of information that can improve and make for more trustworthiness, reliability, and validity, as well as they can also offer a true understanding of their business.

In this research, multiple-choice scales are used in the questionnaire because they are easy and quick for respondents to answer, easy to code, and easy to analyze statistically (Neuman, 2009). The questionnaire consists of seven parts. Part one asks about the personal information of the key informants, such as gender, age, marital status, the level of education, working experience, and income. Part two consists of general business information and history, such as operating period, registered capital, company's average revenues per year, and the number of full-time employees. Next, part three requests for information about the five dimensions of proactive internal audit strategy, including internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology applications, and outsourcing internal audit utilization. Part four investigates about the perceptions of fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. Part five asks for the perceptions of the influence of internal factors on proactive internal audit strategy, including organizational vision and innovative culture. Part six inquiries about the perceptions of the external factors that affect proactive internal audit strategy consisting of competitive intensity and environment complexity. Finally, part seven contains an open-ended question for the suggestions and opinions of the key informants of Thai-listed firms.

To measure variables in a conceptual model, from parts three to six, each item in the questionnaire is measured using a five-point Likert scale anchored by ranging from 1 to 5 – strongly disagree to strongly agree – (Likert, 1932) to allow respondents to express their opinions in the same direction. According to Nunnally (1978) and Neuman (2009), they point out that the best number of choices usually uses a 4 to 8 - point scale; apart from that, it is not meaningful and it can give rise to confusion (Lissitz and Green, 1975). Furthermore, Norman (2010) claimed that it does not methodically damage scale reliability. Thus, using a five-point scale is suitable for constructing the refined measure of all constructs that are improved and developed for measuring from



the definition and previous literature reviews (Abbott, Parker, and Peters, 2012; Arena and Azzone, 2009; Beasley, Branson, and Hancock, 2010; Law, 2011; Papageorgiou, 2013).

A mailed questionnaire might offer a poor response rate, except for a survey topic that can grab the respondent's interest (Groves, Presser, and Dipko, 2004) such as the permanence of the survey content, the motivation of the respondents (Anseel et al., 2010; Edwards et al., 2005; Erwin and Wheelright, 2002), and abating survey length (Fox, Crask, and Kim, 1988; Dillman, 2000). To eliminate this problem, hence, the following procedures were performed:

1. The questionnaires were conducted equally to a number of samples together with the verification of accuracy, completeness, and validity of the mailing document.
2. A cover letter was submitted by Mahasarakham Business School, Mahasarakham University, for covering the mailed survey, introducing the researcher, describing the objectives, and stating the significance of the research, and to request assistance from the respondents.
3. All of the questionnaires were assigned a code on the right corner with the range from the number of listed samples so as to know who received it and for the convenience of follow-up when the initial mailing had no response within the given period (Dillman, 2000).
4. The mailed questionnaire package was comprised of three parts, including a questionnaire, a cover letter, and a postage pre-paid reply envelope.
5. For the mailed questionnaire, 547 packages were sent to the samples with names and addresses of the key informants of Thai-listed firms, to request assistance, and to ask for collaboration in a mail reply within 15 days after receiving the questionnaire packages in June, 2015.
6. Upon expiration of 15 days (Mangione, 1995), 63 questionnaires packages were returned (response rate: 11.52%) which was quite small in number and a low response rate. Thus, the researcher typically sent follow-up reminder postcards to all non-respondents to ask for information courtesy (Dillman, 2011). After 15 days, 52 of the questionnaire packages were returned. A total of 115 questionnaire packages responded by August 6, 2015. The period of data collection was 60 days.





7. The researcher verified the completeness of 113 questionnaires replied. Then, the data from the questionnaire was used to analyze as the objective of the research.

In conclusion, the total number of questionnaires mailed to the respondents was 547 packages, 115 replied, 2 were unusable, and the completed usable questionnaires were only 113, which could be used further. The effective response rate was approximately 20.66 percentages. According to Aaker, Kumar, and Day (2001), the response rate for a mailed survey, without a proper follow-up procedure, is less than 20 percent. As a result, the response rate for this research was considered acceptable. The details are presented in Table 5.

Table 5: Details of Questionnaire Mailing

Details	Number
Number of questionnaire mailed	547
Received questionnaires	115
Unusable questionnaires	2
Usable questionnaires	113
Response rate $113/(547)*100$	20.66%

#### Test of Non-Response Bias

In the past two decades, mail surveys have been widely criticized for non-response bias because they affect the level of confidence in the generalizability to the population. A t-test comparison of the firm's demographics, such as operating period, registered capital, and a number of full-time employees, is used for testing the potential bias between the early respondents and the late respondents (Armstrong and Overton, 1977). If the result is not statistically significant difference between the two groups, it demonstrates that a non-response bias cannot pose a major problem in the research (Groves and Peytcheva, 2008).

In this research, all received questionnaires are split into two equal groups. The early respondents are the first and the late respondents are the second. Therefore, 57 responses from the first group mailing are used to compare with 56 responses received



from the second group mailing on the basis of their demographic information including industry group ( $t = -0.163, p > .05$ ), the period of time of business operation ( $t = -0.200, p > .05$ ), the period of time in listed firms ( $t = 0.863, p > .05$ ), and award ( $t = 0.692, p > .05$ ). The results demonstrate that there is no statistically significant difference between early and late respondents indicating a non-response bias between respondents and non-respondents in terms of demographics. As a result, a non-response bias is not a key problem in this research (see Appendix C).

## Measurements

From the literature review, in order to identify critical variables of principal components in the conceptual model, a multiple-item scale was used for measuring each construct in which these are abstractions that cannot be directly measured or observed. Owing to the multiple-item measure which is able to increase the validity and reliability (Liu, 2004), the definition of the variable was conducted and developed for measuring such constructs in the conceptual model. To measure each construct, all variables gained from the survey are measured by a five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree). The measuring of variables in this research was based on the definitions and on a review of the literature as shown in Table 6. It provides the definition of each construct, the operational variables, and the scaled source. Hence, the variable measurements of the dependent variable, independent variables, antecedent variables, mediating variables, moderating variables, and control variables of this research are elaborated as follows.

### Dependent Variable

*Firm Performance* is measured by the degree of the respondents' perceptions of success in processes, technology, and strategy of an organization that performs under rapidly changing environment to achieve goal setting. This construct is developed as a new five-item scale from the definition and literature.



### Independent Variables

*Proactive internal audit strategy* is the core construct of this research which comprises five dimensions, including internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology applications, and outsourcing internal audit utilization. These dimensions reflect on the features for identifying, strengthening, and creating superior value proportions of the proactive internal audit. Measuring the construct depends on its definition, which is also detailed.

*Internal Audit System Integration* is measured by the degree of the respondents' perceptions of the ability in knowledge assimilation involving an organization's internal audit functions which is at the heart of creating a new advantage to make goal success. This construct, five-items, is developed as a new scale from the definition and literature.

*Participative Internal Audit* is measured by the degree of the respondents' perceptions of the audit feature that shows the coordination of related party transactions in an internal audit system with equality and independence principles. This construct is developed as a new four-item scale from the definition and literature.

*Comprehensive Business Risk Assessment* is measured by the degree of the respondents' perceptions of the process of determining and assessing potential damage that affects an organization's objective comprehensively, which consists of risk identification, development of assessment criteria, risk assessment, assessing risk interactions, risk prioritization, and risk response. This construct is measured by using six items, which is developed as a new scale from the definition and literature.

*Advanced Internal Audit Technology Applications* is measured by the degree of the respondents' perceptions of adaptation in using innovative information technology both modern software and hardware for audit system to maximize practice and potential advantage. This construct is developed as a new five-item scale from the definition and literature.



*Outsourcing Internal Audit Utilization* is measured by the degree of the respondents' perceptions of the use of external service provider who has qualifications in assisting audit tasks that require specialized technique both temporary and in the long run. This construct is developed as a new five-item scale based on the definition and literature.

#### Consequent Variables

The consequences of proactive internal audit strategy include fraud prevention competitiveness, superior operational excellence, transparent business practice, and stakeholder credibility. Each dimension's measurement complies with its definition, which is illustrated as follows.

*Fraud Prevention Competency* is measured by the degree of the respondents' perceptions of an organization's ability in protecting damage from unfair advantage taking or gain unlawful for themselves or others. Four new items based on developed from the definition and literature are used for measurement.

*Superior Operational Excellence* is measured by the degree of the respondents' perceptions of the great ability in modifying operation guidelines and methods so as to improve quality, less waste, obtains higher yields, as well as higher throughput beyond expectations. This construct, four items, are developed as a new scale from the definition and literature.

*Transparent Business Practice* is measured by the degree of the respondents' perceptions of approach in business operation on the basis of truthfulness, mutual trust, directly disclosure on appropriate period, responsibility for administration, and audibility. Four items, in this construct, are developed as a new scale from the definition and literature for measurement.

*Stakeholder credibility* is measured by the degree of the respondents' perceptions of trust and confidence of stakeholders in business operations. This construct is developed as a new four-item scale from the definition and literature.



### Antecedent Variables

In this research, the antecedent variables place value on the creation of proactive strategy which is divided into two groups. The first group is an internal factor consisting of organizational vision and innovative culture. The second group is an external factor including competitive intensity and environment complexity. The measure of all antecedents depends on their definitions which are discussed as follows.

*Organizational Vision* is measured by the degree of the respondents' perceptions of intention in determining a clear view for the future organization with an emphasis on excellence, opportunity, and providence to enhancing capability and strategic positions of the organization. This construct is developed as a new four-item scale from the definition and literature.

*Innovative Culture* is measured by the degree of the respondents' perceptions of values, beliefs, ideals, and shared the understanding of members of an organization in supporting changes that are useful for development strategic advantage. Five new items in this construct are developed from the definition and literature.

*Competitive Intensity* is measured by the degree of the respondents' perceptions of the competitive environment in which the organization is faced with a number of competitors in the business. This construct is developed as a new four-item scale from the definition and literature.

*Environmental Complexity* is measured by the degree of the respondents' perceptions of the environmental heterogeneity that influences the organization in applying multiple strategies to create a competitive advantage for attaining their goals set. This construct is developed as a new four-item scale from the definition and literature.



### Moderating Variables

Stakeholders' expectation in this research is placed as the moderator of the relationships among each dimension of proactive internal audit strategy and its antecedents. Like other variables, these moderators are measured by their definitions which are constructed as a new scale. The details are presented as follows.

*Stakeholders Expectation* is measured by the degree of the respondents' perceptions of stakeholders needs in operations, managements, governance, and performance of the organization. This construct is developed as a new four-item scale from the definition and literature.

### Control Variables

Firm age and firm size are determined as control variables. Due to firms being of different age and size, there might be a significantly different effect on the prediction of results (Fama and French, 2012; Loderer and Waelchli, 2010; Thornhill, 2006). Besides, Bowling (2007), as well as Hedström and Swedberg (1998) also emphasize that the control variable helps to minimize spurious relationships. These points of view are discussed as follows:

*Firm age* is defined as the period of time that the firm has been in business (Aggrey, Eliab, and Joseph, 2010). In this research, firm age played a key role in the areas of the internal audit and organization. Previous research has reviewed that firm age affects internal audit function (Doyle, Ge, and McVay, 2007). In addition, firm age has an impact on firm performance (Coad, Segarra, and Teruel, 2013), innovation probability (Huerger and Jaumandreu, 2004), and cyclical dynamics (Fort et al., 2013). In the same vein, Balasubramanian and Lee (2008) find that firm age has an influence on technical quality, failure and governance (Loderer, Neusser, and Waelchli, 2011), internal audit system (Sarens et al., 2011), and firm survival (Park, Shin, and Kim, 2010). Hence, firm age may have an effect on the conduct of proactive strategy in terms of the internal audit. Firm age, in this research, is denoted by dummy variables in which 0 means the period of time of business operation is less than or equal to 20 years, and 1 means the period of time of business operation is more than 20 years.



*Firm size* refers to the scale and scope of operations (Aldrich 1972). In this research, different indicators can represent it both in typically monetary (e.g., total assets, annual sales, market value, and sales turnover), and nonmonetary (e.g., employee number, productivity, and market share) aspects. The logic of these measurements is used as an important strategy in considering the suitability of the measure. The prior empirical research by Carey et al. (2006) suggested that the size of an organization determines the internal audit activities. Meanwhile, Watt and Zimmerman (1986) have explained that a large firm tends to be sensitive to the politic, and then tends to manage accounting information for reducing the political cost. As a result, decreased net income meant that firm value declined accordingly, while the largest investor believed that large firm provides more useful information for making decisions in investments than small firms (Redding, 1997). Kumar, Rajan, and Zingales (2001) pointed out that a large firm requires capital funding and resources of organization development; the size difference is caused industry characteristics because some industries require high capital, but other industries have a demand for physical capital. In general, a large firm was an advantage on the economy of scale, distribution, and advertisement; which these lead to different competitive advantages (Powell, 2001). Therefore, firm size may affect a firm's achievement (Ussahawanitchakit, 2005) and it should be controlled. In this research, firm size was measured by total assets; and represented by a dummy variable (0 = total assets that are less than or equal to 5,000 billion baht, and 1 = total assets that are more than 5,000 billion baht).

## **Methods**

The constructs of the conceptual model are developed as new scales, and are modified from a review of the literature. In order to assess instrument quality, a pre-test method is properly conducted to assert validity and reliability of the questionnaire. Furthermore, two academic experts in the field are requested to review and adjust the instrument for content validity (Lawshe, 1975). In this case, the first thirty who responded to the questionnaires were pre-tested for verifying validity and reliability of all of the items that were used on the questionnaires; and it was included in final data analysis for testing assumptions and hypotheses through multiple regression analysis.



### Validity and Reliability

Validity and reliability are often defined as necessary criteria for assessing measurement scales in the research because they represent the quality and credibility of a survey instrument, as well as the believability of the findings (Neuman, 2006).

*Validity* is an accurate measurement of a construct or concept (Hair et al., 2015). The survey measure accurately reflects the intended constructs (Groves, Presser, and Dipko, 2004) and processes of testing the accuracy of a particular prediction or inference which was conducted from a test score (Cronbach, 1971). To give the questionnaire trust, it represents a powerful predictor of future behaviors (Piercy and Morgan, 1994) and gives rise to being useful for predictive purposes (Wainer and Braun, 2013). It is necessary to test the instrument's quality and credibility. Then, validity in this research is appropriate for accurately measuring and confirming the constructs or concepts in the conceptual model. The testing operation of two main types of validity, including content and construct validity, are presented as follows.

*Content validity* is defined as the degree to which the element of an assessment instrument is relevant to, and representative of the targeted construct for a particular assessment purpose (Haynes, Richard, and Kubany, 1995; Johnston et al., 2012) which is based on professional judgments (Moss, 2007). Moreover, content validity also depends on an empirical measurement (Carmines and Zeller, 1979) that reflects the representativeness with content that covers domain (Messick, 1987) and generalizability (Cronbach, 1989). Thus, this validity assessment instrument is crucial evidence that performs an examinee assessment (Wilson, Pan, and Schumky, 2012). In this case, validity is improved by an extensive systematic literature review of the questionnaire. Also, two academic views on the expertise in this field are requested for the peer reviewer instrument. This is making sure that the questionnaire is adequately designed by evaluation to cover the content domain (Bailey, 1987).

*Construct validity* refers to the property of test score interpretations in terms of constructs that reflects the strength of the evidence represented (Borsboom et al., 2009). Construct validity is the measuring of an instrument's internal consistency





(Trochim, 1999). Without assessing construct validity, it cannot be used to evaluate and modify for the confounding effect of random error and method variance. The theoretical result may be ambiguous. That is, the findings might be incorrect or the hypothesis is rejected because the error is excessive (Bagozzi, Yi, and Phillips, 1991). Consequently, the various assessment methods were employed to eliminate such a problem. Campbell and Friske (1959) suggested two aspects of construct validity which consist of convergent and discriminant validity. Convergent Validity is the degree to which multiple attempts to measure the same concept are in agreement; while Discriminant Validity is the degree to which one measures different concepts that are distinct. Besides, Exploratory Factor Analysis (EFA), a powerful method, was utilized for emphasizing construct validity (Jöreskog and Sörbom, 1996). In conclusion, construct validity is represented as an appropriate method that can summarize the information from a large number of variables into a much smaller number of variables or factors (Hair et al., 2015). As a rule-of-thumb by Nunnally and Bernstein (1994), factor loadings should be greater than a 0.40 cut-off score which is acceptable.

*Reliability* is the degree to which the measurement is true and error-free of the observed variable; it indicates the degree of internal consistency between the multiple variables (Hair et al., 2015). Due to reliability which indicates that the questionnaire performs consistently (Greco, Walop, and McCarthy, 1987), four statistical techniques have been developed for estimating the test reliability of the instrument, including the test-retest, alternative-form, split-half, and internal consistency methods (Carmines and Zeller, 1979). What is the most proper indicator of scale reliability when multi-items are used for measurement? Previous research revealed that Cronbach's coefficient alpha is frequently used for their measure (Cuijpers et al., 2009; Eisinga, Grotenhuis, and Pelzer, 2012; Löwe, Kroenke, and Gräfe, 2005). This is because a coefficient can measure the internal consistency or the construct reliability (Hair et al., 2015). Therefore, this measure is applied to the method of reliability assessment. According to Nunnally and Bernstein (1994) and Hair et al., (2015), if Cronbach's coefficient alpha value is greater than or equal to 0.70, it is widely accepted as valid.



The results show that factor loading and Cronbach's alpha for multiple-item scales; and reveal that each item of all variables was loaded on only one factor. Also, the factor loadings of each item were expressed between 0.651-0.972, which is greater than the 0.40 cut-off, and statistically significant, indicating that there was construct validity (Nunnally and Bernstein, 1994). In addition, the Cronbach's alpha coefficients for all variables are presented between 0.824 - 0.952, which are greater than 0.70 as recommended by Hair et al. (2015). As a result, all constructs of this research had internal consistency reliability and the reliability of all variables is adopted (see Appendix B).

### **Statistical Techniques**

Before hypotheses testing, the raw data were examined to verify the accuracy. Then, the study proceeded to check the basic regression assumption which consists of normality, linearity, heteroscedasticity, autocorrelation, and outliers (see Appendix D). Several statistical techniques were used in this research such as variance inflation factor (*VIF*), correlation analysis, and multiple regression analysis, as discussed below.

*Correlation analysis* is a basic statistical measure of the strength of a linear relationship between paired variables. The purposes of this technique are to explore the relationship among the exploratory variables, and to verify the collinearity problem or the existent of multicollinearity. Pearson's correlation coefficient ( $r$ ), the most commonly used correlation technique (Mertler and Vannatta, 2002), was applied to measure such correlation. The correlation coefficient can range between  $\pm 1$ . If the value is closer to +1 or -1, it implies the stronger linear correlation. In the same way, Hair et al., (2015) suggested that variable correlations at 0.80 or more pose a multicollinearity problem.

*Variance inflation factors (VIF)* is the statistical value that used as an indicator of the degree of multicollinearity among the explanatory variables. When a full model is conducted, VIF plays an important role in the confirmation of the potential effects of multicollinearity. In general, the maximum acceptable score is equal to or smaller than



10; if there is any higher number, it points out that multicollinearity is a problem (Cohen et al., 2013); that is, multicollinearity is a problem for multiple regression analysis which gives rise to spurious results (Felipe and McCombie, 2013). Therefore, this research employs the variance inflation factors (VIF) for diagnosing the multicollinearity problem.

*Multiple regression analysis* is mentioned as the best combination of the predictor of dependent variables (Mertler and Vannatta, 2002). Hence, it is used in this research to account for the influence of expiratory variables on a firm's achievement, which both are categorical and interval data (Hair et al., 2006; Cohen et al., 2013). The Ordinary Least Squares (OLS) regression analysis is a technique where one can describe such a relationship; especially, a series for testing all hypotheses in the conceptual model. As a result, the hypotheses are transformed into eighteen statistical equations. Each equation includes a predictor variable, a control variable, and an outcome variable; as well as a residual variable or error term. All of the above is presented as below.

$$\text{Equation 1: } FPC = \alpha_1 + \beta_1 IAS_i + \beta_2 PIA + \beta_3 CBRa + \beta_4 AIATa + \beta_5 OIAu + \beta_6 C\_FA + \beta_7 C\_FS + \varepsilon_1$$

$$\text{Equation 2: } SOE = \alpha_2 + \beta_8 IAS_i + \beta_9 PIA + \beta_{10} CBRa + \beta_{11} AIATa + \beta_{12} OIAu + \beta_{13} C\_FA + \beta_{14} C\_FS + \varepsilon_2$$

$$\text{Equation 3: } TBP = \alpha_3 + \beta_{15} IAS_i + \beta_{16} PIA + \beta_{17} CBRa + \beta_{18} AIATa + \beta_{19} OIAu + \beta_{20} C\_FA + \beta_{21} C\_FS + \varepsilon_3$$

$$\text{Equation 4: } SC = \alpha_4 + \beta_{22} IAS_i + \beta_{23} PIA + \beta_{24} CBRa + \beta_{25} AIATa + \beta_{26} OIAu + \beta_{27} C\_FA + \beta_{28} C\_FS + \varepsilon_4$$

$$\text{Equation 5: } FP = \alpha_6 + \beta_{29} IAS_i + \beta_{30} PIA + \beta_{31} CBRa + \beta_{32} AIATa + \beta_{33} OIAu + \beta_{34} C\_FA + \beta_{35} C\_FS + \varepsilon_6$$

$$\text{Equation 6: } SC = \alpha_5 + \beta_{36} FPC + \beta_{37} SOE + \beta_{38} TBP + \beta_{39} C\_FA + \beta_{40} C\_FS + \varepsilon_5$$

$$\text{Equation 7: } FP = \alpha_7 + \beta_{41} FPC + \beta_{42} SOE + \beta_{43} TBP + \beta_{44} C\_FA + \beta_{45} C\_FS + \varepsilon_7$$

$$\text{Equation 8: } FP = \alpha_8 + \beta_{46} SC + \beta_{47} C\_FA + \beta_{48} C\_FS + \varepsilon_8$$



$$\text{Equation 9: } IAS_i = \alpha_9 + \beta_{49}OV + \beta_{50}IC + \beta_{51}CI + \beta_{52}EC + \beta_{53}C\_FA + \beta_{54}C\_FS + \varepsilon_9$$

$$\text{Equation 10: } IAS_i = \alpha_{10} + \beta_{55}OV + \beta_{56}IC + \beta_{57}CI + \beta_{58}EC + \beta_{59}SE + \beta_{60}(OV*SE) + \beta_{61}(IC*SE) + \beta_{62}(CI*SE) + \beta_{63}(EC*SE) + \beta_{64}C\_FA + \beta_{65}C\_FS + \varepsilon_{10}$$

$$\text{Equation 11: } PIA = \alpha_{11} + \beta_{66}OV + \beta_{67}IC + \beta_{68}CI + \beta_{69}EC + \beta_{70}C\_FA + \beta_{71}C\_FS + \varepsilon_{11}$$

$$\text{Equation 12: } PIA = \alpha_{12} + \beta_{72}OV + \beta_{73}IC + \beta_{74}CI + \beta_{75}EC + \beta_{76}SE + \beta_{77}(OV*SE) + \beta_{78}(IC*SE) + \beta_{79}(CI*SE) + \beta_{80}(EC*SE) + \beta_{81}C\_FA + \beta_{82}C\_FS + \varepsilon_{12}$$

$$\text{Equation 13: } CBRa = \alpha_{13} + \beta_{83}OV + \beta_{84}IC + \beta_{85}CI + \beta_{86}EC + \beta_{87}C\_FA + \beta_{88}C\_FS + \varepsilon_{13}$$

$$\text{Equation 14: } CBRa = \alpha_{14} + \beta_{89}OV + \beta_{90}IC + \beta_{91}CI + \beta_{92}EC + \beta_{93}SE + \beta_{94}(OV*SE) + \beta_{95}(IC*SE) + \beta_{96}(CI*SE) + \beta_{97}(EC*SE) + \beta_{98}C\_FA + \beta_{99}C\_FS + \varepsilon_{14}$$

$$\text{Equation 15: } AIATa = \alpha_{15} + \beta_{100}OV + \beta_{101}IC + \beta_{102}CI + \beta_{103}EC + \beta_{104}C\_FA + \beta_{105}C\_FS + \varepsilon_{15}$$

$$\text{Equation 16: } AIATa = \alpha_{16} + \beta_{106}OV + \beta_{107}IC + \beta_{108}CI + \beta_{109}EC + \beta_{110}SE + \beta_{111}(OV*SE) + \beta_{112}(IC*SE) + \beta_{113}(CI*SE) + \beta_{114}(EC*SE) + \beta_{115}C\_FA + \beta_{116}C\_FS + \varepsilon_{16}$$

$$\text{Equation 17: } OIAu = \alpha_{17} + \beta_{117}OV + \beta_{118}IC + \beta_{119}CI + \beta_{120}EC + \beta_{121}C\_FA + \beta_{122}C\_FS + \varepsilon_{17}$$

$$\text{Equation 18: } OIAu = \alpha_{18} + \beta_{123}OV + \beta_{124}IC + \beta_{125}CI + \beta_{126}EC + \beta_{127}SE + \beta_{128}(OV*SE) + \beta_{129}(IC*SE) + \beta_{130}(CI*SE) + \beta_{131}(EC*SE) + \beta_{132}C\_FA + \beta_{133}C\_FS + \varepsilon_{18}$$

Where,

*PIAS* = Proactive Internal Audit Strategy

*IAS<sub>i</sub>* = Internal Audit System Integration

*PTA* = Participative Internal Audit

*CBRa* = Comprehensive Business Risk Assessment

*AIATa* = Advanced Internal Audit Technology Application



<i>OIAu</i>	=	Outsourcing Internal Audit Utilization
<i>FPC</i>	=	Fraud Prevention Competency
<i>SOE</i>	=	Superior Operational Excellence
<i>TBP</i>	=	Transparent Business Practice
<i>SC</i>	=	Stakeholder credibility
<i>FP</i>	=	Firm Performance
<i>OV</i>	=	Organizational Vision
<i>IC</i>	=	Innovative Culture
<i>CI</i>	=	Competitive Intensity
<i>EC</i>	=	Environment Complexity
<i>SE</i>	=	Stakeholders Expectation
<i>C_FS</i>	=	Firm Size
<i>C_FA</i>	=	Firm Age
$\varepsilon$	=	Error Term
$\alpha$	=	Constant value
$\beta$	=	Standardized coefficients (standard deviation score form)

## Summary

This chapter presents the research methodology for creating, developing, and testing hypotheses to answer the research questions. The research statements consist of population selection and data collection procedures, measurements, methods, statistical techniques, and equations. Thai-listed firms from the database of the SET are chosen as the sample and for mailing questionnaires as an instrument for collecting data from key informants who served as internal audit executives or the equivalent. A verification tool is based on the test of validity and reliability. Multivariate regression analysis by the OLS technique is used to describe the relationship between the variables, and eighteen equations are formulated for hypotheses testing. Lastly, a detail of variable measurements is shown in Table 6.



Table 6: Definitions and Operational Variables of Constructs

Construct/ Abbreviation	Definitions	Operational Variables	Scale Source/ Items
<b><u>Independent variables</u></b>			
Integrative Internal Audit System (IIAs)	The connection and assimilation of knowledge related to the organization's internal audit system for effectively advocating the key organizational targets of success.	Evaluating the effective of coherence and harmonious knowledge as well as a process proven for application strategy in internal audit system, which measured by a five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree)	New scale (5 items)
Participative Internal Audit (PIA)	The audit that emphasizes coordination to thinking and understanding in an internal audit system among auditor, executive, and officer with equality and independence principles in finding ways to solve problems and accepting the audit result.	Evaluating an internal auditing by means of coordination among participative internal audit system, which measured by a five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree).	New scale (4 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

<b>Construct/ Abbreviation</b>	<b>Definitions</b>	<b>Operational Variables</b>	<b>Scale Source/ Items</b>
Comprehensive Business Risk Assessments ( <i>CBRa</i> )	Determining and assessing process damage that affects the organization's objective comprehensively consisting of risk. identification, development of assessment criteria, risks assessment, assessing risk interactions, risks prioritization, and risks response.	Determining and assessing process damage that affects the organization's objective comprehensively are measured by Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree).	New scale (6 items)
Advanced Internal Audit Technology Applications ( <i>AIATa</i> )	The innovative information technology (IT) application both modern software and hardware in the organization's internal audit system to maximize practice potential and flexibility.	Applying innovative tool both software and hardware to increase effective an internal audit are measured by Likert scale, ranging from 1 to 5.	New scale (5 items)
Outsourcing Internal Audit Utilization. ( <i>OIAu</i> )	The hiring the internal audit services provider who has qualifications from outside an organization to assist on task that require specialized expertise temporarily or in a long run.	Using an external services provider to assist in internal audit task, which measured by a five-point Likert scale, ranking from 1 to 5 (strongly disagree to strongly agree)	New scale (5 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

Construct/ Abbreviation	Definitions	Operational Variables	Scale Source/ Items
<b><u>Consequent Variables</u></b>			
Fraud Prevention Competency (FPC)	Ability to inhibit or terminate the acts of disintegrity, deliberately misleading, and distortion of the truth to dishonestly exploitation by law for themselves or others.	Evaluating the ability to inhibit or terminate the acts of disintegrity, deliberately misleading, and distortion of the truth to dishonestly exploitation. These are measured by five-point Likert scale, ranking from 1 to 5 (strongly disagree to strongly agree)	New scale (4 items)
Superior Operational Excellence (SOE)	A greater ability to modify guidelines and methods of solving problems so as to make the processes of an organization more effective and efficient beyond expected	Assessing a greater ability to modify guidelines and methods of solving problems to make more effective and efficient beyond expected. This are measured by Likert scale, ranging from 1-5 (strongly disagree to strongly agree)	New scale (4 items)





Table 6: Definitions and Operational Variables of Constructs (continued)

<b>Construct/ Abbreviation</b>	<b>Definitions</b>	<b>Operational Variables</b>	<b>Scale Source/ Items</b>
Transparent Business Practice ( <i>TBP</i> )	The business operation on the basis of truthfulness, mutual trust, directly disclosure on appropriate period, responsibility to administration, and auditability.	Evaluating the basis of truthfulness, mutual trust, directly disclosure on appropriate period, responsibility to administration, and auditability through using a five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree), for measuring.	New scale (4 items)
Stakeholder credibility ( <i>SC</i> )	The trust and confidence of stakeholders towards an organization.	Evaluating the trust and confidence of a stakeholders towards an organization, which are measured by five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree).	New scale (4 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

Construct/ Abbreviation	Definitions	Operational Variables	Scale Source/ Items
<b><u>Dependent Variable</u></b>			
Firm Performance ( <i>FP</i> )	The success and operational outcomes of an organization to achieve its goals by using the utilized resources effectively, efficiently, and economically	Evaluating the success and operational outcomes via the ability of an organization to achieve its goals for using the utilized resources effectively, efficiently, and economically by five-point Likert scale, ranging from 1 to 5 (strongly disagree to strongly agree).	New scale (5 items)
<b><u>Antecedent Variables</u></b>			
Organizational Vision ( <i>OV</i> )	Commitment and intension of determining a clear view of the future organization with an emphasis on excellence, opportunity, and providence which leads an organization to its target successfully.	Determining a clear view of the future organization with an emphasis on excellence, opportunity, and providence. This are measured by Likert scale, ranging from 1-5 (strongly disagree to strongly agree).	New scale (4 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

<b>Construct/ Abbreviation</b>	<b>Definitions</b>	<b>Operational Variables</b>	<b>Scale Source/ Items</b>
Innovative Culture ( <i>IC</i> )	Value, beliefs, ideals, and shared understanding of members of an organization for supporting changes that are useful to an organization by creating an atmosphere which supports personnel who dare to have lateral thinking, to make a decision, to accept risks from doing something new or different, to always adapt oneself, and to accept ideas from stakeholders.	Assessing value, ideal, beliefs, and shared understanding of an organization's member in supporting changes. This are measured by five-point Likert scale, ranging from 1-5 (strongly disagree to strongly agree).	New scale (5 items)
Competitive Intensity ( <i>CI</i> )	The degree of competitive to which an organization faces a competitor in business.	Evaluating the degree of competition which the organizations have to face a competitor in business. This are measured by Likert scale, ranging from 1-5 (strongly disagree to strongly agree).	New scale (4 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

<b>Construct/ Abbreviation</b>	<b>Definitions</b>	<b>Operational Variables</b>	<b>Scale Source/ Items</b>
Environment Complexity ( <i>EC</i> )	The diversity of external environmental factors which have influence or affect an organization.	Assessing external environmental factors which influences or affects organizational behavior. This are measured by Likert scale, ranging from 1-5 (strongly disagree to strongly agree)	New scale (4 items)
<b><u>Moderating Variables</u></b>			
Stakeholders Expectation ( <i>SE</i> )	The needs of stakeholders towards business operation, management, governance, and firm performance.	Evaluating the needs of stakeholders towards business operation, management, corporate governance, and firm performance by using five-point Likert scale, ranging from 1-5 (strongly disagree to strongly agree).	New scale (4 items)



Table 6: Definitions and Operational Variables of Constructs (continued)

<b>Construct/ Abbreviation</b>	<b>Definitions</b>	<b>Operational Variables</b>	<b>Scale Source/ Items</b>
<b><u>Control Variables</u></b>			
<i>Firm Age</i> ( <i>C_FA</i> )	The period of time that the firm has been in business	Dummy variable: 0 = the period of time in business is equal or less than 20 years, and 1 = the period of time in business is more than 20 years.	Doyle et al., 2007; Yen, 2012
<i>Firm Size</i> ( <i>C_FS</i> )	The number of total assets currently	Dummy variable: 0 = Firm has total assets less than 5,000 million baht, 1 = Firm has total assets equal or more than 5,000 million baht	Carey et al., 2006; Zhou, 2000



## CHAPTER IV

### RESULTS AND DISCUSSION

This chapter describes the details of analyses of research results and discussion which are organized in three parts. First, it presents the respondent characteristics and descriptive statistics. Second, the chapter elaborates on hypotheses testing and results. Finally, the summary of all hypotheses testing is provided.

#### **Respondent Characteristics and Descriptive Statistics**

##### Respondent Characteristics

The internal audit executives or equivalent of Thai-listed firms are the respondents in this research because they are the main persons who understand an organization's internal audit function, demystify internal audit system details, and determine the internal audit strategy and policy of an organization. Therefore, the demographic characteristics are used to describe participants' characteristics including gender, age, marital status, education level, working experience, average revenues per month, and position. In addition, the characteristics of Thai-listed firms are presented through industry category, the current registered capital, the period of time in business, the period of time in listed firms, number of employees, net annual income, total assets, and good corporate governance award.

From 113 key respondents showing that 51.33 percent of the participants are male and 48.67 percent are female, with the age ranges between 41-50 years old (36.28 percent). Sixty-four participants are married (56.64 percent) and have received higher than undergraduate level education (59.29 percent). Most participants have over 15 years of working experience (46.90 percent). Moreover, the participants also receive an average income less than 100,000 baht per month (53.10 percent). Finally, the working position of participants is the internal audit director (64.60 percent). See Appendix E for more details on participants.



### Firm Characteristics

The results of 113 Thai-listed firms illustrate that 22 (19.47 percent) firms are property and construction; 19 (16.81 percent) firms are Services, and 17 (15.04 percent) firms are industrials. The current registered capital is less than 1,000 million baht (50.44 percent). The period of time in business is more than 30 years (41.59 percent) and the period of time in listed firm is between 10-20 years (34.51 percent). The number of employees of firms is less than 500 employees (40.71 percent). Additionally, most of firm's net annual incomes are less than 1,000 million baht (31.86 percent) and the total assets of firms are more than 10,000 million baht. Moreover, 61.06 percent of most firms have been awarded good corporate governance. See Appendix E for more details on firm characteristics.

### Results of Descriptive Statistics and Correlation Analysis

The basic features of 113 participants in this research are described by using descriptive statistics. Overall, the results show that the mean scores ( $\bar{X}$ ) of all variables are 3.66 - 4.22 and the standard deviation values (S.D.) are 0.56 - 0.73, see Table 7. Additionally, Table 7 also shows two results of the Pearson correlation analysis, namely performing and exploring the relationships between the variables and checking the presence of a multicollinearity problem, which occurs when the variables have inter-correlation exceeding 0.80 (Hair et. al., 2015). With bivariate analysis, the finding demonstrates the correlation coefficient matrixes for each pair of variables to be between 0.299 and 0.797, which is less than .80, a conventional cutoff value; this means that there are no multicollinearity issues in this research.

Moreover, the results show that the dimensions of proactive internal audit have a significant positive relationship with fraud prevention competency, superior operational excellence, transparency business practice, stakeholder credibility, and firm performance ( $r = 0.299 - 0.771$ ,  $p < .01$ ). For the antecedents, they are significantly related to all dimensions of proactive internal audit strategy ( $r = 0.341 - 0.771$ ,  $p < .01$ ). However, generally accepted principles of multicollinearity problem-solving are diagnosed by using Variance Inflation Factors (VIFs) (Hair et. al., 2015), which are elaborated in the next part.



Table 7: Descriptive Statistics and Correlation Matrix of Proactive Internal Audit Strategy, Its Consequences, Antecedents, and Stakeholder Expectation as a Moderator

Variables	IASi	PIA	CBRa	AIATa	OIAu	FPC	SOE	TBP	SC	FP	OV	IC	CI	EC	SE	C_FA	C_FS
Mean	4.13	4.04	4.11	3.82	3.66	4.11	3.96	4.22	4.05	3.99	4.20	4.07	4.19	4.07	4.22	n/a	n/a
S.D.	.61	.63	.65	.73	.71	.63	.62	.60	.60	.56	.62	.62	.57	.62	.62	n/a	n/a
IASi	1.000																
PIA	.796***	1.000															
CBRa	.756***	.765***	1.000														
AIATa	.680***	.681***	.716***	1.000													
OIAu	.410***	.476***	.529***	.473***	1.000												
FPC	.701***	.672***	.762***	.662***	.448***	1.000											
SOE	.745***	.653***	.723***	.701***	.369***	.770***	1.000										
TBP	.729***	.627***	.771***	.538***	.354***	.796***	.773***	1.000									
SC	.630***	.589***	.684***	.616***	.299***	.644***	.683***	.776***	1.000								
FP	.665***	.674***	.728***	.708***	.379***	.756***	.792***	.788***	.783***	1.000							
OV	.766***	.696***	.793***	.707***	.443***	.754***	.744***	.797***	.714***	.779***	1.000						
IC	.680***	.642***	.771***	.740***	.470***	.657***	.706***	.712***	.704***	.757***	.768***	1.000					
CI	.657***	.588***	.729***	.574***	.341***	.648***	.656***	.662***	.571***	.658***	.690***	.625***	1.000				
EC	.677***	.672***	.685***	.622***	.416***	.604***	.651***	.630***	.605***	.688***	.706***	.694***	.696***	1.000			
SE	.647***	.585***	.673***	.580***	.478***	.616***	.583***	.625***	.567***	.621***	.684***	.641***	.668***	.772***	1.000		
C_FA	.194**	.160*	.181*	.163*	.063	.133*	.147*	.151*	.078	.102	.196**	.121	.107	.104	.060	1.000	
C_FS	.145*	.099	.180*	.204**	.070	.214**	.238**	.257***	.206**	.288***	.169*	.126	.186**	.116	.198**	-.046	1.000

Note: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10



## Hypotheses Testing and Results

The ordinary least squares (OLS) are used for hypotheses testing because a linear regression equation is created from the independent variables that can describe and predict the dependent variable (Aulakh, Masaaki, and Hildy, 2000). Such OLS is then an appropriate method for examining the hypotheses of all eighteen equations. Moreover, firm age and firm size is two dummy that are included in those equations for testing statistical hypotheses as follows.

### The Effects of Proactive Internal Audit Strategy on Its consequences

With respect to testing hypotheses 1 to 5, the regression equations 1, 2, 3, 4, and 5 as stated in Chapter 3 are used to analyze these hypotheses which fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance are dependent variables. Five dimensions of proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization) are independent variables.

The results in Table 7 show the correlations among dependence and independence variables. The results indicate that internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have significant positive correlation with fraud prevention competency ( $r = 0.448 - 0.762$ ,  $p < .01$ ). Formerly, internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have significantly positive correlated with superior operational excellence ( $r = 0.369 - 0.745$ ,  $p < .01$ ). In addition, internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have significantly positive correlated with transparent business practice ( $r = 0.354 - 0.771$ ,  $p < .01$ ). Moreover, internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have significant



positive correlation with stakeholder credibility ( $r = 0.299 - 0.684$ ,  $p < .01$ ). In addition, internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization have a positive correlation with firm performance ( $r = 0.379 - 0.728$ ,  $p < .01$ ). Accordingly, the evidence suggests that inter-correlation between the variables is not multicollinearity problem because these correlation values are less than 0.80 (Hair et al., 2015). However, in order to provide clear evidence, variance inflation factors (VIFs) are used to test such multicollinearity problems of the variables (see in Table 8). In this case, the results demonstrate that the maximum VIF is 3.859, which is below the cut-off value of 10 (Cohen et al., 2013). This means that there are no significant multicollinearity problems confronting in this research. For the results of the OLS regression analysis of the relationships between proactive internal audit strategy and its consequences, they are shown in Table 9.

Table 8: Descriptive Statistics and Correlation Matrix of Proactive Internal Audit Strategy and Its Consequences

Variables	IASi	PIA	CBRa	AIATa	OIAu	FPC	SOE	TBP	SC	FP	C_FA	C_FS
Mean	4.13	4.04	4.11	3.82	3.66	4.11	3.96	4.22	4.05	3.99	n/a	n/a
S.D.	.61	.63	.65	.73	.71	.63	.63	.61	.61	.56	n/a	n/a
IASi	1.000											
PIA	.796***	1.000										
CBRa	.756***	.765***	1.000									
AIATa	.680***	.681***	.716***	1.000								
OIAu	.410***	.476***	.529***	.473***	1.000							
FPC	.701***	.672***	.762***	.662***	.448***	1.000						
SOE	.745***	.653***	.723***	.701***	.369***	.770***	1.000					
TBP	.729***	.627***	.771***	.538***	.354***	.796***	.773***	1.000				
SC	.630***	.589***	.684***	.616***	.299***	.644***	.683***	.776***	1.000			
FP	.665***	.674***	.728***	.708***	.379***	.756***	.792***	.788***	.783***	1.000		
C_FA	.194**	.160*	.181*	.163*	.063	.133*	.147*	.151*	.078	.102	1.000	
C_FS	.145*	.099	.180*	.204**	.070	.214**	.238**	.257***	.206**	.288***	-.046	1.000

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$



Table 9: Results of the Effects of Proactive Internal Audit Strategy on Its Consequences

Independent Variables	Dependent Variable				
	Eq. 1 H1a-5a	Eq. 2 H1b-5b	Eq. 3 H1c-5c	Eq. 4 H1d-5d	Eq. 5 H1e-5e
	FBP	SOE	TBP	SC	FP
Constant (a)	-.040 (.092)	-.057 (.090)	-.101 (.089)	.008 (104)	-.069 (.091)
Internal Audit System Integration (IASi)	.153 (.116)	<b>.376***</b> (.113)	<b>.336***</b> (.112)	.130 (.131)	<b>.230**</b> (.115)
Participative Internal Audit (PIA)	.098 (.109)	.001 (.106)	.001 (.105)	.057 (.122)	<b>.191*</b> (.107)
Comprehensive Business Risk Assessment (CBRa)	<b>.418***</b> (.117)	<b>.219*</b> (.114)	<b>.581***</b> (.113)	<b>.432***</b> (.132)	<b>.344***</b> (.115)
Advanced Internal Audit Technology Application (AIATa)	<b>.162*</b> (.092)	<b>.293***</b> (.089)	-.111 (.089)	<b>.235**</b> (.104)	<b>.319***</b> (.091)
Outsourcing Internal Audit Utilization (OIAu)	.037 (.072)	-.046 (.070)	-.048 (.070)	-.122 (.081)	-.065 (.071)
C_FA	-.027 (.123)	-.014 (.120)	.015 (.119)	-.125 (.139)	-.078 (.122)
C_FS	.148 (.129)	.182 (.125)	<b>.274**</b> (.125)	.128 (.145)	<b>.293**</b> (.127)
Adjusted R <sup>2</sup>	.604	.624	.628	.495	.614
Maximum VIF	3.859	3.859	3.859	3.859	3.859

Note: <sup>a</sup>Beta coefficients with standard errors in parenthesis, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10

The results of OLS regression analysis of the relationship of each dimension of proactive internal audit strategy, including internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization and its consequences (fraud prevention competency, superior operational excellence, transparency business practice, stakeholder credibility, and firm performance) are followed by Hypotheses 1 to 5.

Firstly, the result shows that internal audit system integration has a significantly positive effect on superior operational excellence (H1b:  $\beta_8 = 0.376$ ,  $p < .01$ ), transparent business practice (H1c:  $\beta_{15} = 0.336$ ,  $p < .01$ ), and firm performance (H1e:  $\beta_{29} = 0.230$ ,  $p < .05$ ). These are consistent with previous research by Krishnamoorthy (2002) and Morrill and Morrill (2003) who indicate that the internal audit system enables an organization to improve operational processes. For instance, external audit fees may be reduced if the works of external auditors depend on firm's internal audit system. Since internal audit system integrations help in connecting the role, scope, practice, and



objectives of internal auditing and it offers a vehicle that leads to professionalism in internal auditing. Moreover, it reviews firm's transparency systems established to ensure compliance with the policies, procedures, plans, regulations, and laws which Ramamoorti (2003) shows that it has a dramatically impact on operations and reports of firms. In the same vein, Carmeli and Tishler (2004) find that internal audit system has a significantly positive effect on firm performance. **Hence, Hypotheses 1b, 1c and 1e are supported.**

On the other hand, internal audit system integration also has no significant effect on fraud prevention competency (H1a:  $\beta_1 = 0.153$ ,  $p > .10$ ) and stakeholder credibility (H1d:  $\beta_{22} = 0.130$ ,  $p > .10$ ). A possible reason for this issue is that strategy-making process to prevent fraud and to build credibility for stakeholder sometimes does not need to make a difference over rivals because the internal audit system is created by the national regulator who constitutes the governance agents. Without cost for creating an effective instrument, value can be added to a firm when it uses such free instrument by evaluating and improving the effectiveness of risk management control system, and internal governance (Walker et al., 2003; Hammersley, Myers, and Shakespeare, 2008; Tornyeva and Wereko, 2012). **Thus, Hypotheses 1a and 1d are not supported.**

Secondly, the results indicate that participative internal audit significantly and positively impact on firm performance (H2e:  $\beta_{30} = 0.191$ ,  $p < .05$ ). These are consistent with Chong, Eggleton, and Leong (2005) who indicate that participation reflects people's trust and willingness to participate which has a significant effect on performance; especially, in participatory budgeting that positively impacts on firm performance (Verfürth, 2013). This is because participation can create common support and educate around activities of an agency. Additionally, it can enhance exchanging of information usefulness; and it encourages individuals and groups to get involve with agency's decision-making about strategic processes (Glass, 1979). In the corporate sector, Fung (2006) shows that participation has mean for improving the business in connection with processes. Similarly, Greenwood (2007) finds that employee participation has an influence on production capacity which significantly impacts on firm performance. Then, the degree of participation in planning, evaluating results, and generating alternatives significantly leads the firm to the best performance (Black and



Gregersen, 1997; Rogerson-Revell, 2008); and it functions as a starting point for achieving success in business. ***Therefore, Hypothesis 2e is supported.***

In contrary, an analysis of the relationship between participative internal audit and its consequents shows that there is no significant effect on fraud prevention competency (H2a:  $\beta_2 = 0.098$ ,  $p > .10$ ), superior operational excellence (H2b:  $\beta_9 = 0.001$ ,  $p > .10$ ), transparent business practice (H2c:  $\beta_{16} = 0.001$ ,  $p > .10$ ), and stakeholder credibility (H2d:  $\beta_{23} = 0.130$ ,  $p > .10$ ). This is because the participation process depends on the situation that occurs as well as the organizational levels (Jermias and Setiawan, 2008). Thus, creating good corporate governance, including internal audit system; especially in a specific policy, is more significant than participation of employee in the political decision-making process. As in KPMG (1999) survey, it suggests that fraud prevention and detection strategy are regarded as an improvement in the internal control system by increasing the focus on top management team. The result also finds that various types of collusion among top management, employees, and external parties lead to cause fraud. This issue is consistent with COSO (1999) reports stating that top management team including Chief Executive Officer (CEO) and Chief Financial Officer (CFO) are often involved with fraud cases. In the same way, Oakland (2014) mentions that firms' improving overall performance is one of the greatest tangible benefits of excellence to become leading companies; the greater employee participation is important for firms in the shorter term. If this is so, the degree of internal audit participation in planning, evaluating results, and generating alternatives may affect superior operational excellence in the long-term. This is consistent with the research of auditing strategic environmental assessment practice in Canada by Noble (2003) who asserts that there is no evidence that shows that the set of audit criteria is appropriate for evaluating the quality of strategic environmental assessment practice applications. This may be because the participation elements of policy keep pursuing the truth, irrespective of environmental changes (Reid, 2002). Especially, assurance and consulting activities need to be appropriate to improve an internal audit system in the key areas (D'Silva and Ridley, 2007). Moreover, some disclosure of information is still regulated by law to ensure in transparency and trust creation of firms' good and services to public purchase (Parigi, Geeta, and Kailasam, 2004). ***Thus, Hypotheses 2a, 2b, 2c, and 2d are not supported.***



Thirdly, the hypotheses testing in Table 9 reviews that comprehensive business risk assessment has a significantly positive impact on fraud prevention competency (H3a:  $\beta_3 = 0.418$ ,  $p < .01$ ), superior operational excellence (H3b:  $\beta_{10} = 0.219$ ,  $p < .10$ ), transparent business practice (H3c:  $\beta_{17} = 0.581$ ,  $p > .10$ ), stakeholder credibility (H3d:  $\beta_{24} = 0.432$ ,  $p < .01$ ), and firm performance (H3e:  $\beta_{31} = 0.344$ ,  $p < .01$ ). These results are consistent with Selim and McNamee (1999) who point out that the concepts of risk-based internal auditing helps organizations to evaluate risk and link them to business objectives effectively and systematically (DeLoach, 2000). It also leads to a reduction of duplication in effort (Walker, Shenkir, and Barton, 2003). Additionally, the risk assessment process reflects management effectiveness (Haines, 2005), social responsibility (Kytte and Ruggie, 2005), transparency in business (Pennywell, 2009; Hermalin and Weisbach, 2007), and the level of fraud prevention strategy of an organization (Trotman and Wright, 2012), as well as helps to leverage an organization's capabilities for operational excellence (McNamara and Bromiley, 1997). As empirical research in Chang et al. (2008), it suggests that risk assessment has a positive influence on the ability to reduce cost in an internal audit process and to enhance fraud prevention (Ciccione, 2006), which makes performance increase (Pagach and Warr, 2010). Moreover, the continuing development of risk management function has a significant influence on firm's survival (Pézier, 2003). **Therefore, Hypotheses 3a, 3b, 3c, 3d, and 3e are fully supported.**

Fourthly, with regards to advanced internal audit technology application, the results show that it has significantly positive effects on fraud prevention competency (H4a:  $\beta_4 = 0.162$ ,  $p < .10$ ), superior operational excellence (H4b:  $\beta_{11} = 0.293$ ,  $p < .01$ ), stakeholder credibility (H4d:  $\beta_{25} = 0.235$ ,  $p < .05$ ), and firm performance (H4e:  $\beta_{32} = 0.319$ ,  $p < .01$ ). These are consistent with Brynjolfsson, Hitt, and Yang (2002); Black and Lynch (2001) who show that the application of technology has a positive impact on operational value. An organization with superior information technologies can assist firms in rapidly accessing information, reducing its costs for business, and increasing their revenue (Porter, 2001). Especially, high information technology investment (e.g., Test Facility, Test Data, and Generalized Audit Software) can effectively prevent both external fraud and the system from internal fraud (Shaikh, 2005; Swanger and Chewning, 2001; Tam, 1998). This means that application of technology in the internal



audit process contributes to the operational excellence and superior outperformance both at present and in the future (Brynjolfsson and Hitt, 2005). Furthermore, applying technology reflects an organization's credibility as well (Lee, Kim, and Phaal, 2012).

***Thus, Hypotheses 4a, 4b, 4d, and 4e are supported.***

In the meantime, the result shows no significant effect on the relationship between advanced internal audit technology application and transparent business practice (H4c:  $\beta_{18} = -.111$ ,  $p > .10$ ). It may be because resource constraints (e.g., low budget allocation, staff rejection, and top management unsupported; see Ireland, Kuratko and Morris, 2006; PWC, 2009) affect the application of modern technology, which leads to less transparent practice of firms (Broz, 2002; Ismail, 2012). At the same time, new technology is used in internal audit process; it might not be useful or motivate staff to create new ideas and new processes that give rise to innovation (Ashenbaum, Salzarulo, and Newman, 2012), which leads firm to the best practice in transparency. Besides, if audit software does not meet expectation of user it cannot effectively improve internal controls system. That means advanced internal audit technology application does not cause transparency in operational process of firms (Moorthy et al., 2011). ***Therefore, Hypothesis H4c is not supported.***

Finally, through the lens of outsourcing internal audit utilization, the results indicate that outsourcing internal audit utilization has no significant effect on fraud prevention competency (H5a:  $\beta_5 = 0.037$ ,  $p > .10$ ), superior operational excellence (H5b:  $\beta_{12} = -0.046$ ,  $p > .10$ ), transparent business practice (H5c:  $\beta_{19} = -0.048$ ,  $p > .10$ ), stakeholder credibility (H5d:  $\beta_{26} = -0.122$ ,  $p > .10$ ), and firm performance (H5e:  $\beta_{33} = -0.065$ ,  $p > .10$ ). Indeed, this is because the firms assert that not everyone can really understand the internal audit system of firms more than company insiders. As in Fitoussi and Gurbaxani's (2012) finding, it shows that the effectiveness of performance audit increases, while satisfactory internal audit outcome decreases. In addition, outsourcing services also build frustration owing to endless cost-service payment and loss of control their IT (Willcocks and Cullen, 2013). Moreover, outsourcing providers can lead firms to a loss of skills in strategically important areas (McIvor, 2013). ***Hence, Hypotheses 5a, 5b, 5c, 5d, and 5e are not supported.***

In summary, the results reveal that all of dimensions of proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive



business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization) have significant direct effect on its consequence. Therefore, Hypotheses 1, 2, 3, and 4 are partially supported while Hypothesis 5 is not supported.

For control variables, namely firm age and firm size, there is only firm size (total assets) that has a significant effect on transparent business practice ( $\beta_{21} = 0.274$ ,  $p < .05$ ) and firm performance ( $\beta_{35} = 0.293$ ,  $p < .05$ ). A possible explanation is that large firms with thick capital will be able to invest in developing innovation, research, human resources, and more attractive oversight of the internal control procedures and auditing activities more than smaller firms (Bedard et al., 2008; Zenger and Lazzarini, 2004). Additionally, the largest investor such as institutional investor believes that larger firms provide more useful information for decision-making in investments than smaller firms (Redding, 1997). Moreover, larger firms are an advantage on the economies of scale, distribution, and advertisement which give rise to different competitive advantages (Altinkılıç and Hansen, 2000) that leads to operational transparency (e.g., transparent in financial reporting, Abbott et al., 2015; compensation, Berber, Pasula, and Radošević, 2012) and superior performance (Elhamma, 2015; Lun and Quaddus, 2011)

#### The Effects of Fraud Prevention Competency, Superior Operational Excellence, Transparency Business Practice, and Stakeholder Credibility on Firm Performance

On the subject of the relationships, the results comprise two parts, including Pearson's bivariate correlation coefficient ( $r$ ) and the effect of fraud prevention competency, superior operational excellence, transparency business practice, and stakeholder credibility on firm performance as shown in hypotheses 6 to 9. These hypotheses are evaluated by using the regression equations 6, 7, 8 and 9, as reported in Chapter 3.





Table 10: Descriptive Statistics and Correlation Matrix of Proactive Internal Audit Strategy's Consequences

Variables	FPC	SOE	TBP	SC	FP	C_FA	C_FS
<b>Mean</b>	4.11	3.96	4.22	4.05	3.99	n/a	n/a
<b>S.D.</b>	.63	.63	.61	.61	.56	n/a	n/a
FPC	1.000						
SOE	.770***	1.000					
TBP	.796***	.773***	1.000				
SC	.644***	.683***	.776***	1.000			
FP	.756***	.792***	.788***	.783***	1.000		
C_FA	.133*	.147*	.151*	.078	.102	1.000	
C_FS	.214**	.238**	.257***	.206**	.288***	-.046	1.000

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$

For the first part, the results show that fraud prevention competency, superior operational excellence, transparent business practice have positively correlated with stakeholder credibility ( $r = 0.644 - 0.776$ ,  $p < .01$ ) and firm performance ( $r = 0.756 - 0.792$ ,  $p < .01$ ). In view of that, the evidence suggests that inter-correlation between the variables is not multicollinearity problem because these correlation are less than 0.80 (Hair et al., 2015). However, in order to provide clear evidence, variance inflation factors (VIFs) are used to test such multicollinearity problems of the variables (see Table 10). In this case, the results illustrate that the maximum VIF is 3.394 which is below the cut-off value of 10 (Kutner, Nachtsheim, and Neter, 2008; Cohen et al., 2013). This means that there are no significant multicollinearity issues confronting in this research.



Table 11: Results of the Effects of Proactive Internal Audit Strategy's  
Consequences on Firm performance

Independent Variables	Dependent Variable		
	Eq. 6 H6a-8a	Eq. 7 H6b-8b	Eq. 8 H9
	SC	FP	FP
Constant (a)	.044 (.092)	-.030 (.079)	-.131 (0.082)
Fraud Prevention Competency (FPC)	-.029 (.108)	<b>.189**</b> (.093)	
Superior Operational Excellence (SOE)	<b>.222**</b> (.102)	<b>.379***</b> (.088)	
Transparent Business Practice (TBP)	<b>.637***</b> (.110)	<b>.329***</b> (.094)	
Stakeholder Credibility (SC)			<b>.788***</b> (.055)
C_FA	-.094 (.122)	-.050 (.105)	.093 (.109)
C_FS	-.015 (.130)	.149 (.122)	<b>.268**</b> (.115)
Adjusted R <sup>2</sup>	.604	.707	.495
Maximum VIF	3.394	3.394	1.053

Note: <sup>a</sup>Beta coefficients with standard errors in parenthesis, \*\*\* p < 0.01, \*\* p < 0.05

Table 11 demonstrates the results in OLS regression analysis of the effect of fraud prevention competency, superior operational excellence, transparency business practice, and stakeholder credibility on firm performance which are followed by Hypotheses 6 to 8; the relationship between stakeholder credibility and firm performance are followed by Hypotheses 9.

Firstly, for the investigation on the part of the effect on fraud prevention competency and stakeholder credibility, the results show that there is no significant correlation between those variables (H6a:  $\beta_{36} = -0.029$ ,  $p > .10$ ). This may be because fraud detection procedures used in the firms is unnecessarily technical, complex and higher cost, so the programs itself is not appropriately supported and understudied at the top management of firms. For this reason, any program aimed at preventing fraud will usually fail. Moreover, investigations of fraud are often expensive and uncomfortable, when events usually bring to negotiate a settlement (e.g., voluntary resignation or early retirement) without punishment. This exhibits ineffectiveness of fraud detection procedures. In the eyes of stakeholder, it undermine firms' credibility (Samociuk and Iyer, 2012), which is at the heart of business if it loses any disastrous consequences



(Barker, D'Amato, and Sheridan, 2008). Consistently Bhasin (2013) points out that an increasing number of frauds have subverted integrity and reliability of financial reporting, participation to substantial economic losses, and destroyed trust and confidence of investor as well. **Thus, Hypothesis 6a is not supported.**

On the other hand, the evidence in Table 11 points out that fraud prevention competency has a positive influence on firm performance (H6b:  $\beta_{41} = 0.189$ ,  $p < .05$ ). In accordance with Montague's (2010) findings, it demonstrates that fraud prevention enables the firms to achieve business goals by increasing revenue, decreasing costs, and reducing losses. In the same manner, Guardian Analytics (2011) states that fraud prevention, especially proactive fraud management and communication anti-fraud policies (Krummeck, 2000), leads to opportunity for banks to strengthen and advocate customer trust through demonstration of an organization's knowledge and competence towards fraud prevention (Rauyruen and Miller, 2007). Such competence is an important success factor that entails higher competitive advantage of industry (Agha, Alrubaiee, and Jamhour, 2012). **As a result, Hypothesis 6b is supported.**

Secondly, the results indicate that superior operational excellence has a positive effects on stakeholder credibility (H7a:  $\beta_{37} = 0.222$ ,  $p < .05$ ) and firm performance (H7b:  $\beta_{42} = 0.379$ ,  $p < .01$ ). These are consistent with Day et al. (2008) who demonstrate that operational excellence drives on an organization's management approach that gives rise to business growth. Exploring the methodology of operational excellence by Asif et al. (2010), it reveals that manufacturing practices is developed by an organization over time. It makes practice subsequently change with a positive impact on performance (Shah and Ward, 2003). Operational excellence becomes a key factor that contributes to create competitive advantage, which leads the firms to achieve goals in all situations (Duggan, 2011). Moreover, operational excellence leads to increase the level of employees' trust in management (Nahm, Lauver, and Keyes, 2012) and to ensure the practice operational designs meet stakeholders different needs and firm value (Hurley, Gong, and Waqar, 2014; Sharma, 2005). **Hence, Hypotheses 7a and 7b are supported.**

Thirdly, the results also indicate that transparent business practice has a significantly positive effect on stakeholder credibility (H8a:  $\beta_{38} = 0.637$ ,  $p < .01$ ) and firm performance (H8b:  $\beta_{43} = 0.329$ ,  $p < .01$ ). The findings are consistent with empirical



research by Myers and Majluf (1984) who reveal that organizations with greater degree of transparent are more likely to expose equity than debt because equity is more sensitive to information in a capital market than debt. Similarly, Stiglitz (2003) indicates that the market may rapidly respond to good information; hence, transparency is a major instrument that shed light on the credibility of stakeholders. Osborn (2004) asserts that transparency is the way to reduce the opportunities for corruption, which helps to increase stakeholder's trust (Rawlins, 2008). Additionally, Anderson, Duru, and Reeb (2009) find empirically that firms with voluntary disclosures will get superior performance and serves as the strategy to correct poor performance (O'Neill, 2006). **Therefore, Hypotheses 8a and 8b are supported.**

Finally, the finding demonstrates that stakeholder credibility has a positive impact on firm performance (H9:  $\beta_{46} = 0.788$ ,  $p < .01$ ). In accordance with Li's (2008) findings, the maxim-based trust (trust that is based on the self-commitment of the partners to behave in a non-opportunistic way) has a significantly positive effect on firm performance. Trust causes exchanges partners for pursuing governance mechanisms that entails improving firm's outcomes (McEvily, Perrone, and Zaheer, 2003). As in King, Lenox and Barnett (2002) show that the reputable stakeholder can encourage credibility that entails superior performance by which Tzafrir (2005) confirms that level of firm performance can when stakeholders' trust is high. The credibility of stakeholders is then good because it helps an organization to effectively achieve its goals (Lins, Servaes, and Tamayo, 2015). **Hence, Hypothesis 9 is supported.**

In conclusion, fraud prevention competency, superior operational excellence, transparent business practice have positively associated with stakeholder credibility and firm performance. Besides, stakeholder credibility also has a significantly positive impact on firm performance. Therefore, Hypotheses 7, 8, and 9 are strongly supported, while Hypothesis 6 is partially supported.

For control variables, the results indicate that firm size has a positive effect on firm performance ( $\beta_{48} = 0.268$ ,  $p < .05$ ). This is accounts for resource heterogeneity of firms that give rise to a difference at the level of goal achievement. Niederkofler (1991) reveals that smaller firms lack experience, resource, and staff does not create more competitive advantage than large firms with the amount of resources and management skills more apt to generate, to build, and to reconfigure existing competency that



matches with environmental shift (Mellewigt, Madhok, and Weibel, 2007). These views are consistent with Geringer, Tallman, and Olsen (2000) who find a significantly positive relation between firm size and profitability (Beck, Demirgüç-Kunt, and Maksimovic, 2005; Li et al., 2008). However, firm size does not affect stakeholder credibility ( $\beta_{39} = -0.015$ ,  $p > .10$ ). Besides, firm age is not associated with stakeholder credibility ( $\beta_{44} = -0.094$ ,  $p > .10$ ) and firm performance ( $\beta_{47} = -0.050$ ,  $p > .10$ ). These results can describe the fact that age reflects only on time in listed firms but does not demonstrate the viability and credibility of the organization regarding subsequent success. In accordance with Boeker (1997), he asserts that older firms are busy with creating a solid competency for their routines which often lack new learning processes, sightlessness a visual strategy, and conservatism. These cause poor performance and may lead to operating result decreased (Durand and Coeurderoy, 2001; Szulanski, 1996). Older firms are more likely to achieve lower performance than younger firms (Autio, Sapienza, and Almeida, 2000; Watson, 2007). Under environmental uncertainty, Gaur et al. (2011) reveal that firm age has no significant influence on firm performance whether it is measured by accounting base or market base. As empirical evidence by Li, Hess, and Valacich (2008) demonstrate that firm age is not a key predictor of profitability and build trust in stakeholder (Tzafrir, 2005)

#### The Effects of Antecedents Variables on Proactive Internal Audit Strategy

For the regression equations 13, 16, 19, 22, and 25 in Chapter 3, they are used for testing hypotheses 12 to 16. In the regression equation, dependent variables are five dimensions of proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization). Independent variables include organizational vision, innovative culture, competitive intensity, environment complexity, and stakeholder expectation regarding control variables (firm age and firm size) as shown in Figure 4 in Chapter 2.



Table 12: Descriptive Statistics and Correlation Matrix of Proactive Internal Audit Strategy and Its Antecedence

Variables	IASi	PIA	CBRa	AIATa	OIAu	OV	IC	CI	EC	SE	C_FA	C_FS
Mean	4.13	4.04	4.11	3.82	3.66	4.20	4.072	4.19	4.07	4.22	n/a	n/a
S.D.	.61	.63	.65	.73	.71	.62	.62	.59	.62	.62	n/a	n/a
IASi	1.000											
PIA	.796***	1.000										
CBRa	.756***	.765***	1.000									
AIATa	.680***	.681***	.716***	1.000								
OIAu	.410***	.476***	.529***	.473***	1.000							
OV	.766***	.696***	.793***	.707***	.443***	1.000						
IC	.680***	.642***	.771***	.740***	.470***	.768***	1.000					
CI	.657***	.588***	.729***	.574***	.341***	.690***	.625***	1.000				
EC	.677***	.672***	.685***	.622***	.416***	.706***	.694***	.696***	1.000			
SE	.647***	.585***	.673***	.580***	.478***	.684***	.641***	.668***	.772***	1.000		
C_FA	.194**	.160*	.181*	.163*	.063	.196**	.121	.107	.104	.060	1.000	
C_FS	.145*	.099*	.180*	.204**	.070	.169*	.126	.186**	.116*	.198**	-.046	1.000

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$

The finding of the correlations among the antecedent variables and all five dimension of proactive internal audit strategy are presented in Table 12. The results showed a significant correlation between the antecedent variables and each dimension of proactive internal audit strategy. The first is a positive correlation between the antecedent variables and internal audit system integration ( $r = 0.647 - 0.766$ ,  $p < .01$ ). The second is a positive correlation between the antecedent variables and participative internal audit ( $r = 0.585 - 0.696$ ,  $p < .01$ ). The third is a positive correlation between the antecedent variables and comprehensive business risk assessment ( $r = 0.673 - 0.793$ ,  $p < .01$ ). The fourth is a positive correlation between the antecedent variables and advanced internal audit technology application ( $r = 0.580 - 0.740$ ,  $p < .01$ ). Finally, it is a positive correlation between the antecedent variables and outsourcing internal audit utilization ( $r = 0.341 - 0.478$ ,  $p < .01$ ).

Consequently, the evidence suggests that inter-correlation between the variables is not multicollinearity problem because these correlation are less than 0.80 (Hair et al., 2015). However, in order to provide clear evidence, variance inflation factors (VIFs) are used to test such multicollinearity problems of the variables (see Table 13). In this case, the results demonstrate that the maximum VIF is 4.438, which is below the cut-off



value of 10 (Cohen et al., 2013). This means that there are no significant multicollinearity problems confronting in this research. For the results of the OLS regression analysis of the antecedent variables - five dimensions of proactive internal audit strategy relationships are shown in Table 13.

Table 13: Results of the Effects of Antecedents on Proactive Internal Audit Strategy

Independent Variables	Dependent Variable				
	Eq. 9 H10a-13a	Eq. 11 H10b-13b	Eq. 13 H10c-13c	Eq. 15 H10d-13d	Eq. 17 H10e-13e
	IASi	PIA	CBRa	AIATa	OIAu
Constant (a)	-.058 (.090)	-.020 (.100)	-.053 (.075)	-.120 (.095)	.004 (.131)
Organizational Vision (OV)	<b>.474***</b> (.123)	<b>.352**</b> (.136)	<b>.451***</b> (.102)	.152 (.130)	.106 (.178)
Innovative Culture (IC)	.027 (.114)	.074 (.126)	<b>.183*</b> (.094)	<b>.457***</b> (.120)	<b>.282*</b> (.165)
Competitive Intensity (CI)	<b>.164*</b> (.089)	.079 (.099)	<b>.256***</b> (.074)	.066 (.094)	-.019 (.129)
Environment Complexity (EC)	<b>.202**</b> (.093)	<b>.316**</b> (.103)	.054 (.077)	.133 (.098)	.160 (.135)
C_FA	.120 (.121)	.082 (.134)	.079 (.100)	.124 (.128)	-.012 (.176)
C_FS	.022 (.125)	-.039 (.139)	.060 (.104)	.199 (.132)	.003 (.182)
Adjusted R <sup>2</sup>	.619	.530	.628	.574	.196
Maximum VIF	4.438	4.438	4.438	4.438	4.438

Note: <sup>a</sup>Beta coefficients with standard errors in parenthesis, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10

Regarding the effects of five dimensions of proactive internal audit strategy and its antecedences (organizational vision, innovative culture, competitive intensity, and environment complexity), a results Table 12 illustrates that organizational vision has a significantly positive impact on internal audit system integration (H10a:  $\beta_{49} = 0.474$ ,  $p < .01$ ), participative internal audit (H10b:  $\beta_{66} = 0.352$ ,  $p < .05$ ), and comprehensive business risk assessment (H10c:  $\beta_{83} = 0.451$ ,  $p < .01$ ). These are consistent with Getie-Mihret and Zemenu-Woldeyohannis (2008) who find that strategic goal, particularly strategic (future- oriented) terms (Kantabutra, 2006), is conducted by organization can enhance effectiveness of internal audit department (Hargie and Tourish, 2009) such as strategic planning success and communicating



properly to make clear understanding, especially business risk assessment (Lipton, 1996). If this so, vision can create motivation for developing the internal audit process and reduce uncreative conflict to communication of audit team (Bou-Raad, 2000; Rittenberg and Anderson, 2006). **Therefore, Hypotheses 10a, 10b, and 10c are supported.**

In contrast, the result indicates that organizational vision does not significantly affect advanced internal audit technology application (H10d:  $\beta_{100} = .152$ ,  $p > .10$ ), and outsourcing internal audit utilization (H10e:  $\beta_{117} = .106$ ,  $p > .10$ ). This is because a firm believes that the creation of vision follows audit technology which is rapidly changing; and it is obsessed with internal audit outsourcing. It does not cause effectiveness and value in internal audit function in the longer run when compared with the cost that must be paid to those technologies including additional cost such as staff training cost, maintenance cost, and endless technical consultant cost. In accordance with Gewald and Helbig (2006), they mention that at the partner level (vision), cost of economic is still used to consider for innovative investment. Similarly, Barrett and Gendron's (2006) research, they investigate the unrealized vision of developing auditor trustworthiness in cyberspace; the results illustrate that in internal audit function, a firm still trusts internal auditors who have expertise and are professional. Moreover, Leavy (2004) indicates that the use of outsourcing may cause the risk of losing some skills that is a key to compete in the future; in the evolution of industry, it can give rise to the risk of turning to outsourcing at the wrong stage. **Thus, Hypotheses 10d and 10e are not supported.**

For testing innovative culture, the results show that innovative culture has a positive effect on comprehensive business risk assessment (H11c:  $\beta_{84} = 0.183$ ,  $p < .10$ ), advanced internal audit technology application (H11d:  $\beta_{101} = 0.457$ ,  $p < .01$ ), and outsourcing internal audit utilization (H11e:  $\beta_{118} = 0.282$ ,  $p < .10$ ). These are corresponds with Prabhu's (2010) findings which indicate that innovative culture is one key driver that entails developing new products or services. Chen et al. (2012) illustrate that a strong innovative culture causes leadership change in behavior that is beneficial to promote the use of technological innovation more effective at the level of a business strategy unit (Heller, 2004; Oke, Munshi, and Walumbwa, 2009). In particularly when an innovative culture is established within their organization, it helps promote participation in complicated technologies (Fetscher, 2008; Nazali-Mohd-Noor and Pitt,





2009) and becomes a behavioral factor for an organization in culture expression that have a key influence on risk management (Hillson and Simon, 2007; Hillson and Muray-Webster, 2007; PWC, 2009). More importantly, it is not manipulated by robots (Hindson, 2010). So, enterprise risk management cannot meet success if it does not embrace at cultural levels that strengthen innovation process. As in Enkel, Kausch, and Gassmann's (2005) finding, inherent risk to customer system integration can be minimized by comprehensive risk management methods. In addition, Beardsell (2009) asserts that culture is a key success factor for outsourcing more than prize; while Nunes and Aasi (2012) claim that cultural traits affect IT outsourcing. This means that innovative culture is a crucial success factor for outsourcing (Fjermestad and Saitta, 2005). Thereby, an organization needs innovative culture to advocate new things that will arise in the future, serving as a driving force for generating a vital strategy that leads an organization to competitive advantage (Birdi et al., 2008). **Hence, Hypotheses 11c, 11d, and 11e are supported.**

On the other hand, the result demonstrates that innovative culture has no a significant effect on internal audit system integration (H11a:  $\beta_{50} = 0.027$ ,  $p > .10$ ), and participative internal audit (H11b:  $\beta_{67} = 0.074$ ,  $p > .10$ ); since innovation in internal audit system needs long-term investment and risk-taking that may occur, while internal auditor requires to perceive that an organization will be openness to new ideas and cultivated internal capabilities in adopting those new ideas, processes, and products (Spira and Page, 2003). According to Naranjo-Valencia et al. (2011), a low level of innovative culture typically lack of independence and hinder flexibility in employee creativity including decreases an organization's openness and responsiveness to change (Pawar and Eastman, 1997). This is consistent with Hyland and Beckett (2005) who mention that an innovative culture is relying on people's participation in an organization. Moreover, Lægreid, Roness, and Verhoest (2011) find that there are no direct affect between innovative culture and activity (e.g., integrating internal audit function). **As a result, Hypotheses 11a and 11b are not supported.**

Owing to competitive intensity, the results indicate that competitive intensity has a positive effect on internal audit system integration (H12a:  $\beta_{51} = 0.164$ ,  $p < .10$ ) and comprehensive business risk assessment (H12c:  $\beta_{85} = 0.256$ ,  $p < .01$ ). These are consistent with empirical evidence from Jermias's (2008) research. It shows that



competitive intensity affects business strategy choice, formal control system, and adaptive mechanisms of individual organizations (Barnett, 1997; Chenhall, 2003). Meanwhile, industry-level competition has an influence in determining the operation pattern of an organization (George, 2005; Peng, Tan, and Tong, 2004; Tan and Peng, 2003), which contributes to generating new things (Sharpe and Currie, 2008; Geroski, 1990). As a result, firms that face the higher levels of industry competitive intensity will make a difference by integrating, building, and reconfiguring their capabilities into new capabilities (strategy) in order to achieve superior results (Porter, 1980). In particularly internal audit system, Collier (2009) indicates that risk assessment methods and procedures are a crucial factor in protecting customer databases from competitor when competitive intensity has increased continuously. ***Therefore, Hypotheses 12a and 12c are supported.***

Meanwhile, the results show that competitive intensity has no significant impact on participative internal audit (H12b:  $\beta_{68} = 0.079$ ,  $p > .10$ ), advanced internal audit technology application (H12d:  $\beta_{102} = 0.066$ ,  $p < .01$ ), and outsourcing internal audit utilization (H12e:  $\beta_{119} = -0.019$ ,  $p < .10$ ). Indeed, competitive intensity primarily determines economic of scale, whether firms may be in any circumstances; the decision to use outsourcing is still depending on industries' competitive intensity (Atkins and Liang, 2010). Additionally, the price erosion among outsourcing, in view of employer, reduces a reliability of audit efficiency including a firm's desire to minimize cost (Barthelemy, 2001; Hung-Lau and Zhang, 2006; Lynch, 2004). Similarly, Khandwalla (1973) reports that the relationship between price competition and the use of management controls are not significant. In corresponding with Gao, Xu, and Yang's (2008) findings, they reveal that competitive intensity has no effect on organization's innovation (e.g., radical product innovation, incremental product innovation, and process innovation). ***Thus, Hypotheses 12b, 12d, and 12e are not supported.***

The results also indicate that environmental complexity has a significantly positive impact on internal audit system integration (H13a:  $\beta_{52} = 0.202$ ,  $p < .05$ ) and participative internal audit (H13b:  $\beta_{69} = 0.316$ ,  $p < .05$ ). These are in accordance with findings by Harrington and Kendall (2006) who demonstrate that firms engaging with a highly complex environment bring more strategy implementation success, especially where employees are involved in the process. As Felix, Gramling, and Maletta (2001)



indicate that coordination between the internal audit function and the external auditor is significant. Likewise, Carpenter (2002) finds that complexity, particularly in feature international strategy of an organization, positively associates with top management team heterogeneity. In addition, Sharma and Vredenburg (1998) find that environmental uncertainty (complexity and dynamics) is correlated with the unique organizational capabilities that emerge. Such new capabilities (e.g., integrating internal audit function) are used for creating strategy in auditing. In line with Mile and Snow (1978), a higher level of uncertain environment leads an organization to employ multiple strategies (e.g., integrating audit processes, and participatory management) for attaining its goals. **Thus, Hypotheses 13a and 13b are supported.**

Moreover, the result shows that environmental complexity has no significant effect on comprehensive business risk assessment (H13c:  $\beta_{86} = 0.054$ ,  $p > .10$ ), advanced internal audit technology application (H13d:  $\beta_{103} = 0.133$ ,  $p > .10$ ), and outsourcing internal audit utilization (H13e:  $\beta_{120} = 0.160$ ,  $p > .10$ ). These are consistent with results of empirical studies by Spekle, Van-Elten, and Kruis (2007) who indicate that environmental uncertainty does not affect internal audit outsourcing decisions. In the same vein, Gordon, Loeb, and Tseng (2009) find that firm complexity does not correlate with enterprise risk management. Besides, Maletta (1993) reveals that control system strengthening is insignificant when external auditors make reliance decisions through using internal auditors as assistants; this means that environmental complexity has no influence on risk assessment. Although innovation is used in organization such as the internet, and comprise many IT workers in this job, but finding IT auditors who are tully equipped with auditing and IT skills remains difficult. In particular, auditors have experienced with enterprise resource planning applications such as SAP (Gray, 2004). **Thus, Hypotheses 13c, 13d, and 13e are not supported.**

In summary, organizational vision, innovative culture, competitive intensity, and environment complexity have an association with five dimensions of proactive internal audit strategy. As a result, Hypotheses 10, 11, 12 and 13 are partial supported. For the control variable, firm age and firm size, there are no significant relationships among the antecedents and all five dimensions of proactive internal audit. These are consistent with Brown and Caylor (2006) who find that firm age has no significant effect on Gov-Score. For example, directors are subject to shareholder guidelines.



Company is shareholder approval and board guidelines are in each proxy statement. Similarly, Alsaeed (2006) reveals that firm age cannot explain disclosure level; especially disclosing a material weakness in internal control (Doyle, Ge, and McVay, 2007). Besides, firm's size is not significant and it influences the internal control risk attributes (Ashbaugh-Skaife, Collins, and Kinney, 2007). In accordance with findings by Carey, Simnett, and Tanewski (2000) firm size does not affect the demand for internal and external audit. Moreover, under different environmental conditions, the results demonstrate that firm size and firm age do not impact organization's strategic management such as the outsourcing or in-house internal audit choice (James, 2003).

#### The Impacts of Antecedents Variables on Proactive Internal Audit Strategy and Moderating Effects of Stakeholder Expectation

For the regression equations 10, 12, 14, 16, and 18 according to Chapter 3, they are used for testing hypotheses 14 to 18. In the regression equation, stakeholder expectation is posing as the moderating effect on the relationships among antecedents (organizational vision, innovative culture, competitive intensity, and environment complexity) and five dimensions of proactive internal audit strategy

Findings from Table 12 illustrates that the correlations between stakeholder expectation and comprehensive business risk assessment ( $r = 0.673$ ,  $p < .01$ ) are the highest, and the lowest is the correlations between stakeholder expectation and outsourcing internal audit utilization ( $r = 0.478$ ,  $p < .01$ ). Further, the results illustrate that stakeholder expectation has a positive correlation with the antecedence variables and all five dimensions of proactive internal audit strategy, but inter-correlation between the variables is not multicollinearity problem because the most of correlation are less than 0.80 (Hair et al., 2015). However, in order to provide clear evidence, variance inflation factors (VIFs) are used to test such multicollinearity problems of the variables (see Table 14). In this case, the results demonstrate that the maximum VIF is 6.565, which is below the cut-off value of 10 (Cohen et al., 2013). This means that there are no significant multicollinearity problems confronting in this research.



Table 14: The Results of Stakeholder Expectation as Moderator on  
The Relationships between Antecedents and Proactive Internal  
Audit Strategy

Independent Variables	Dependent Variable									
	Eq. 9	Eq. 10	Eq. 11	Eq. 12	Eq. 13	Eq. 14	Eq. 15	Eq. 16	Eq. 17	Eq. 18
	H10-13a	H14-17a	H10-13b	H14-17b	H10-13c	H14-17c	H10-13d	H14-17d	H14-17d	H14-17e
	IASi		PIA		CBRa		AIATa		OIAu	
Constant (a)	-.058 (.090)	-.128 (-.094)	-.020 (.100)	-0.128 (-.103)	-.053 (.075)	-.098 (-.082)	-.120 (.095)	<b>-0.254**</b> <b>(-0.101)</b>	.004 (.131)	-0.022 (-0.141)
Organizational Vision (OV)	<b>.474***</b> <b>(.123)</b>	<b>.337**</b> <b>(-.130)</b>	<b>.352**</b> <b>(.136)</b>	<b>.284**</b> <b>(-.142)</b>	<b>.451***</b> <b>(-.142)</b>	<b>.483***</b> <b>(-.113)</b>	.152 (.130)	<b>0.259*</b> <b>-0.14</b>	.106 (.178)	0.146 -0.195
Innovative Culture (IC)	.027 (.114)	.088 (-.111)	.074 (.126)	.165 (-.122)	<b>.183*</b> <b>(.094)</b>	<b>.185*</b> <b>(-.097)</b>	<b>.457***</b> <b>(.120)</b>	<b>0.437***</b> <b>-0.12</b>	<b>.282*</b> <b>(.165)</b>	0.227 -0.167
Competitive Intensity (CI)	<b>.164*</b> <b>(.089)</b>	<b>.205**</b> <b>(-.089)</b>	.079 (.099)	.133 (-.097)	<b>.256***</b> <b>(.074)</b>	<b>.268***</b> <b>(-.077)</b>	.066 (.094)	0.07 -0.096	-.019 (.129)	-0.077 -0.133
Environment Complexity (EC)	<b>.202**</b> <b>(.093)</b>	.057 (-.105)	<b>.316**</b> <b>(.103)</b>	.175 (-.115)	.054 (.077)	-.023 (-.091)	.133 (.098)	0.021 -0.114	.160 (.135)	-0.003 -0.158
Stakeholder Expectation (SE)		.156 (-.099)		.027 (-.108)		.056 (-.086)		0.062 -0.106		<b>0.318**</b> <b>-0.148</b>
OV*SE		-.173 (-.135)		.025 (-.147)		.192 (-.117)		0.199 -0.145		0.196 -0.203
IC*SE		-.122 (-.143)		-.230 (-.156)		-.203 (-.124)		-0.073 -0.154		-0.064 -0.215
CI*SE		-.026 (-.093)		<b>.223**</b> <b>(-.120)</b>		.020 (-.081)		-0.006 -0.1		0.124 -0.14
EC*SE		<b>.411***</b> <b>(-.116)</b>		<b>.543***</b> <b>(-.127)</b>		.051 (-.101)		0.097 -0.126		-0.189 -0.175
C_FA	.120 (.121)	.065 (-.118)	.182 (.134)	.082 (-.134)	.179 (.100)	.072 (-.103)	.124 (.128)	0.07 -0.128	-.012 (.176)	0.01 -0.178
C_FS	.022 (.125)	-.003 (-.120)	-.039 (.139)	-.039 (-.139)	.060 (.104)	.040 (-.105)	.199 (.132)	0.194 -0.13	.003 (.182)	-0.036 -0.181
Adjusted R <sup>2</sup>	.619	.656	.530	.587	.628	.740	.574	0.598	.196	0.219
Maximum VIF	4.438	6.565	4.438	6.565	4.438	6.565	4.438	6.565	4.438	6.565

Note: <sup>a</sup>Beta coefficients with standard errors in parenthesis, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10

Table 14 shows the results of OLS regression analysis of Hypotheses 14 to 18. The results demonstrate that stakeholder expectation has a positive moderating effect on the relationships between competitive intensity and participative internal audit (H17b:  $\beta_{79} = 0.223$ ,  $p < .05$ ), the relationships between environmental complexity and internal audit system integration (H18a:  $\beta_{63} = 0.411$ ,  $p < .01$ ), and the relationships between



environment complexity and participative internal audit (H18b:  $\beta_{80} = 0.543$ ,  $p < .01$ ). These are in accordance with organizational behavior that is likely to respond to competitive intensity whether the competitors (Chen, Kuo-Hsien, and Tsai, 2007), various types of operations (George, 2005) or collaboration (Ang, 2008) by determining operational pattern (strategic planning) of an organization (George, 2005; KPMG, 2006) matches with environment shift. This aims at generating new things (Sharpe and Currie, 2008) that can reflect people's trust and willingness to participation (Verfürth, 2013). As in Greenwood's (2007) findings, they indicate that employee participation has an influence on production capacity (Fung, 2006). Specifically, an employee's knowledge in the participation process is a vital mechanism, which manager needs to fulfill his propose for other aspects of their work (Likert, 1967). Mitchell, Agle, and Wood (1997) assert that a stakeholder's demands make an organization to integrate and improve more effective internal audit systems. Such integration enriches strategic flexibility and helps an organization to cope with rapid external environmental changes. It also can motivate an employee's participation and can make jobs easier (Milgrom and Roberts, 1995). This issue is in the line with Eljido-Ten, Kloot and Clarkson's (2010) triangulation research who assert that the relationships between an environment and a firm's strategic choices are dependent on stakeholder, which Hambrick and Mason (1984) demonstrate that using strategy of firm reflects the value of a top manager who cares about a stakeholder's expectations. Moreover, Sarens and De Beelde (2006) find that senior management's expectations have a dramatic effect on the internal audit; it expects that the internal audit system able to meet the increased environmental complexity and fulfill the role in monitoring of internal auditor. **Therefore, Hypotheses 16b, 17a, and 17b are supported.**

Additionally, the results also demonstrate that stakeholder expectation has no significantly moderating impact on the relationships between organizational vision and internal audit system integration (H14a:  $\beta_{60} = -0.173$ ,  $p > .10$ ), participative internal audit (H14b:  $\beta_{77} = 0.025$ ,  $p > .10$ ), comprehensive business risk assessment (H14c:  $\beta_{94} = 0.192$ ,  $p > .10$ ), advanced internal audit technology application (H14d:  $\beta_{111} = .199$ ,  $p > .10$ ), and outsourcing internal audit utilization (H14e:  $\beta_{128} = 0.196$ ,  $p > .10$ ). This include the relationships between innovative culture and internal audit system integration (H15a:  $\beta_{61} = -0.122$ ,  $p > .10$ ), participative internal audit (H15b:  $\beta_{78} = -0.230$ ,  $p > .10$ ),



comprehensive business risk assessment (H15c:  $\beta_{95} = -0.203$ ,  $p > .10$ ), advanced internal audit technology application (H15d:  $\beta_{112} = -0.073$ ,  $p > .10$ ), and outsourcing internal audit utilization (H15e:  $\beta_{129} = -0.064$ ,  $p > .10$ ). This is accompanied by the relationships between competitive intensity and internal audit system integration (H16a:  $\beta_{62} = -0.026$ ,  $p > .10$ ), comprehensive business risk assessment (H16c:  $\beta_{96} = 0.020$ ,  $p > .10$ ), advanced internal audit technology application (H16d:  $\beta_{112} = -0.006$ ,  $p > .10$ ), and outsourcing internal audit utilization (H16e:  $\beta_{130} = 0.124$ ,  $p > .10$ ). Finally, stakeholder expectation has no significantly moderating impact on the relationships between environmental complexity and comprehensive business risk assessment (H17c:  $\beta_{97} = 0.051$ ,  $p > .10$ ), advanced internal audit technology application (H17d:  $\beta_{114} = 0.097$ ,  $p > .10$ ), and outsourcing internal audit utilization (H17e:  $\beta_{131} = -0.189$ ,  $p > .10$ ). In fact, stakeholder's expectation plays a key role in internal audit whether strategy choices or strategy adaptation (Elijido-Ten, 2012; Ernst and Young, 2012; Frooman, 1999; Mitchell, Agle, and Wood, 1997; Peters and Waterman, 1982; Sarens and De Beelde, 2006). In addition, it can improve the firm's image and increase competitive advantage (Fadun, 2014) as well as lead organization to sustainable goal setting (Windsor, 2004). Moreover, stakeholder's expectation serves as a factor that encourages accountability and business ethics. For this reason, if the organization lacks stakeholder's expectation, business may be likely to fail. **Therefore, Hypotheses 14a-e, 15a-e, 16a, 16c, 16d, 16e, 17c, 17d, and 17e are not supported.**

In conclusion, stakeholder expectation has a significantly moderating effect on the relationships among competitive intensity, environment complexity and internal audit system integration, participative internal audit. Meanwhile, stakeholder expectation does not have a moderating effect on the relationships among organizational vision, innovative culture and all five dimension of internal audit strategy. Accordingly, Hypotheses 16 and 17 are partially supported while Hypotheses 14 and 15 are not supported; stakeholder expectation has a direct effect on outsourcing internal audit utilization.

For control variables, the results point out that firm age and firm size have no impact on internal audit system integration ( $\beta_{64} = 0.065$ ,  $p > .10$ ;  $\beta_{65} = -0.003$ ,  $p > .10$ ), participative internal audit ( $\beta_{81} = 0.082$ ,  $p > .10$ ;  $\beta_{82} = -0.039$ ,  $p > .10$ ), comprehensive business risk assessment ( $\beta_{98} = 0.072$ ,  $p > .10$ ;  $\beta_{99} = 0.040$ ,  $p > .10$ ), advanced internal





audit technology application ( $\beta_{115} = 0.070$ ,  $p > .10$ ;  $\beta_{116} = 0.194$ ,  $p > .10$ ), and outsourcing internal audit utilization ( $\beta_{132} = 0.070$ ,  $p > .10$ ;  $\beta_{133} = 0.194$ ,  $p > .10$ ). This means that large firms that have more or less total asset, younger or older, tend to respond to stakeholder's expectation by creating internal audit strategy that matches with all situations. Although large firms (wealthy and older) invest much money in technology, research, and development in various innovations (Balasubramanian and Lee, 2008; Zenger and Lazzarini, 2004) including more attention to strategic management than smaller firms such as risk management (Bedard, Hoitash, and Hoitash, 2008), there is still no impact on proactive internal audit strategy.

### Summary of the Results of Hypotheses Testing

Table 15: The Summary of the Results of Hypotheses Testing

Hypothesis	Description of Hypothesized Relationships	Results
H1a	Internal audit system integration has a positive effect on fraud prevention competency.	Not Supported
H1b	Internal audit system integration has a positive effect on superior operational excellence.	Supported
H1c	Internal audit system integration has a positive effect on transparent business practice.	Supported
H1d	Internal audit system integration has a positive effect on stakeholder credibility.	Not Supported
H1e	Internal audit system integration has a positive effect on firm performance.	Supported
H2a	Participative internal audit has a positive effect on fraud prevention competency.	Not Supported
H2b	Participative internal audit has a positive effect on superior operational excellence.	Not Supported
H2c	Participative internal audit has a positive effect on transparent business practice.	Not Supported





Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H2d	Participative internal audit has a positive effect on stakeholder credibility.	Not Supported
H2e	Participative internal audit has a positive effect on firm performance.	Supported
H3a	Comprehensive business risk assessment has a positive effect on fraud prevention competency.	Supported
H3b	Comprehensive business risk assessment has a positive effect on superior operational excellence.	Supported
H3c	Comprehensive business risk assessment has a positive effect on transparent business practice.	Supported
H3d	Comprehensive business risk assessment has a positive effect on stakeholder credibility.	Supported
H3e	Comprehensive business risk assessment has a positive effect on firm performance.	Supported
H4a	Advanced internal audit technology applications have a positive effect on fraud prevention competency.	Supported
H4b	Advanced internal audit technology applications have a positive effect on superior operational excellence.	Supported
H4c	Advanced internal audit technology applications have a positive effect on transparent business practice.	Not Supported
H4d	Advanced internal audit technology applications have a positive effect on stakeholder credibility.	Supported
H4e	Advanced internal audit technology applications have a positive effect on firm performance.	Supported
H5b	Outsourcing internal audit utilization has a positive effect on superior operational excellence.	Not Supported
H5c	Outsourcing internal audit utilization has a positive effect on transparency business practice.	Not Supported



Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H5d	Outsourcing internal audit utilization has a positive effect on stakeholder credibility.	Not Supported
H5e	Outsourcing internal audit utilization has a positive effect on firm performance.	Not Supported
H6a	Fraud prevention competency has a positive effect on stakeholder credibility.	Not Supported
H6b	Fraud prevention competency has a positive effect on firm performance.	Supported
H7a	Superior operational excellence has a positive effect on stakeholder credibility.	Supported
H7b	Superior operational excellence has a positive effect on firm performance.	Supported
H8a	Transparent business practice has a positive effect on stakeholder credibility.	Supported
H8b	Transparent business practice has a positive effect on firm performance.	Supported
H9	Stakeholder credibility has a positive effect on firm performance.	Supported
H10a	Organizational vision has a positive association with internal audit system integration.	Supported
H10b	Organizational vision has a positive association with participative internal audit.	Supported
H10c	Organizational vision has a positive association with comprehensive business risk assessment.	Supported
H10d	Organizational vision has a positive association with advanced internal audit technology application.	Not Supported
H10e	Organizational vision has a positive association with outsourcing internal audit utilization.	Not Supported



Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H11a	Innovative culture has a positive association with internal audit system integration.	Not Supported
H11b	Innovative culture has a positive association with participative internal audit.	Not Supported
H11c	Innovative culture has a positive association with comprehensive business risk assessment.	Supported
H11d	Innovative culture has a positive association with advanced internal audit technology application.	Supported
H11e	Innovative culture has a positive association with outsourcing internal audit utilization.	Supported
H12a	Competitive intensity has a positive association with internal audit system integration.	Supported
H12b	Competitive intensity has a positive association with participative internal audit.	Not Supported
H12c	Competitive intensity has a positive association with comprehensive business risk assessment.	Supported
H12d	Competitive intensity has a positive association with advanced internal audit technology application.	Not Supported
H12e	Competitive intensity has a positive association with outsourcing internal audit utilization.	Not Supported
H13a	Environmental complexity has a positive association with internal audit system integration.	Supported
H13b	Environmental complexity has a positive association with participative internal audit.	Supported
H13c	Environmental complexity has a positive association with comprehensive business risk assessment.	Not Supported
H13d	Environmental complexity has a positive association with advanced internal audit technology application.	Not Supported



Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H13e	Environmental complexity has a positive association with outsourcing internal audit utilization.	Not Supported
H14a	Stakeholder expectation positively moderates the relationship between organizational vision and internal audit system integration.	Not Supported
H14b	Stakeholder expectation positively moderates the relationship between organizational vision and participative internal audit.	Not Supported
H14c	Stakeholder expectation positively moderates the relationship between organizational vision and comprehensive business risk assessment.	Not Supported
H14d	Stakeholder expectation positively moderates the relationship between organizational vision and advanced internal audit technology application.	Not Supported
H14e	Stakeholder expectation positively moderates the relationship between organizational vision and outsourcing internal audit utilization.	Not Supported
H15a	Stakeholder expectation positively moderates the relationship between innovative culture and internal audit system integration.	Not Supported
H15b	Stakeholder expectation positively moderates the relationship between innovative culture and participative internal audit.	Not Supported
H15c	Stakeholder expectation positively moderates the relationship between innovative culture and comprehensive business risk assessment.	Not Supported



Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H15d	Stakeholder expectation positively moderates the relationship between innovative culture and advanced internal audit technology application.	Not Supported
H15e	Stakeholder expectation positively moderates the relationship between innovative culture and outsourcing internal audit utilization.	Not Supported
H16a	Stakeholder expectation positively moderates the relationship between competitive intensity and internal audit system integration.	Not Supported
H16b	Stakeholder expectation positively moderates the relationship between competitive intensity and participative internal audit.	Supported
H16c	Stakeholder expectation positively moderates the relationship between competitive intensity and comprehensive business risk assessment.	Not Supported
H16d	Stakeholder expectation positively moderates the relationship between competitive intensity and advanced internal audit technology application.	Not Supported
H16e	Stakeholder expectation positively moderates the relationship between competitive intensity and outsourcing internal audit utilization.	Not Supported
H17a	Stakeholder expectation positively moderates the relationship between environmental complexity and internal audit system integration.	Supported
H17b	Stakeholder expectation positively moderates the relationship between environmental complexity and participative internal audit.	Supported



Table 15: The Summary of the Results of Hypotheses Testing (Continued)

<b>Hypothesis</b>	<b>Description of Hypothesized Relationships</b>	<b>Results</b>
H17c	Stakeholder expectation positively moderates the relationship between environmental complexity and comprehensive business risk assessment.	Not Supported
H17d	Stakeholder expectation positively moderates the relationship between environmental complexity and advanced internal audit technology application.	Not Supported
H17e	Stakeholder expectation positively moderates the relationship between environmental complexity and outsourcing internal audit utilization.	Not Supported



## CHAPTER V

### CONCLUSION

This research investigates the effect of proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization) on fraud prevention competency, superior operational excellences, transparent business practice, stakeholder credibility, and firm performance. Additionally, the relations of fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility with firm performance are examined. Moreover, organizational vision, innovative culture, competitive intensity, and environmental complexity are posted as antecedence of proactive internal audit strategy. Furthermore, stakeholder expectation is used as a moderator for testing the relationships among the antecedent variables and each dimension of proactive internal audit strategy.

The vital questions of this research are: “How does proactive internal audit strategy affect firm performance?” and, “How does the firm enhance proactive internal audit strategy?” Then, the specific research questions need to be answered as listed: (1) How does proactive internal audit strategy (internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology applications, and outsourcing internal audit utilization) influence fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance? (2) How do fraud prevention competency, superior operational excellence, and transparent business practice influence stakeholder credibility and firm performance? (3) How does stakeholder credibility influence firm performance? (4) How do organizational vision, innovative culture, competitive intensity, and environment complexity influence proactive internal audit strategy? and, (5) How does stakeholder expectation moderate the relationships between antecedence factors and proactive internal audit strategy?

Dynamic capability theory is used to describe the relationships between proactive internal audit strategy and its consequences: fraud prevention competency,



superior operational excellence, transparency business practice, stakeholder credibility, and firm performance. In addition, contingency theory is employed to account for an examination of the relations of antecedents with proactive internal audit strategy. For the moderating effects, stakeholder expectation is placed as the moderator of proactive internal audit strategy – antecedence relationships, which are considered by contingency theory as well. Thereby, contingency theory and dynamic capability theory explained connections among environmental change, proactive internal audit strategy, competitive advantage, and firm's success.

In this research, the questionnaire consists of seven parts. Multiple-choice and scale questions are used in the questionnaire. The chief internal audit director, internal audit manager, or equivalents of Thai-listed firms are selected as the key informants because they are the main persons who are responsible for carrying out the internal audit function of an organization. In addition, they know various aspects of the management of their business and can demystify internal audit system details together with determining the internal audit strategy and regulating policy that affects the achievements of the organization's goals. Moreover, they can provide useful information for more reliability, validity, and trustworthiness. Furthermore, they can offer a true understanding of their business as well.

The samples of this research are Thai-listed firms, which are chosen from the database of The Stock Exchange of Thailand (SET). This database provides complete addresses which can confidently affirm and assert the data of whether the firms still exists in the list, which there are 674 firms of May 1, 2015; 113 MAI firms and 14 rehabilitation firms are not included in this research. Thus, the total population of 547 firms was sampled for the distribution of a mailed survey. A valid mailing was 547, 115 replied, 2 unusable, and the completed usable questionnaires were only 113. The effective response rate was approximately 20.66 percent.

The overall results find that proactive internal audit strategy: internal audit system integration, participative internal audit, comprehensive business risk assessment, and advanced internal audit technology application have a significant impact on their consequences; except outsourcing internal audit utilization which is not significant. Fraud prevention competency, superior operational excellence, transparent business practice, have a positive relationship with stakeholder credibility and firm performance;





while stakeholder credibility has a strong positive effect on firm performance. In addition, organizational vision, innovative culture, competitive intensity, and environmental complexity have a significant influence on each dimension of proactive internal audit strategy. Moreover, stakeholder expectation has a significant positive moderating effect on competitive intensity – participative internal audit relationships, environmental complexity – internal audit system integration, and participative internal audit relationships. Furthermore, the finding of stakeholder expectation has no significant moderating effect on the relationships between organizational vision, innovative culture and each dimension of proactive internal audit strategy. The results also indicate that it has no significant effect on internal audit system integration, participative internal audit, comprehensive business risk assessment, advanced internal audit technology application, and outsourcing internal audit utilization.

In conclusion, the main research question is supported by the empirical evidence. As described earlier, the summary of all research questions and results are included in Table 16 and Figure 6

Table 16: Summary of Results in All Hypotheses Testing

Research Questions	Hypotheses	Results	Conclusion
(1) How does proactive internal audit strategy influence fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance?	Hypotheses 1a-d, 2a-d, 3a-d, 4a-d, and 5a-d	Internal audit system integration, participative internal audit, comprehensive business risk assessment, and advanced internal audit technology application have a significant influence on their consequences; except outsourcing internal audit utilization does not significant	Partially Supported

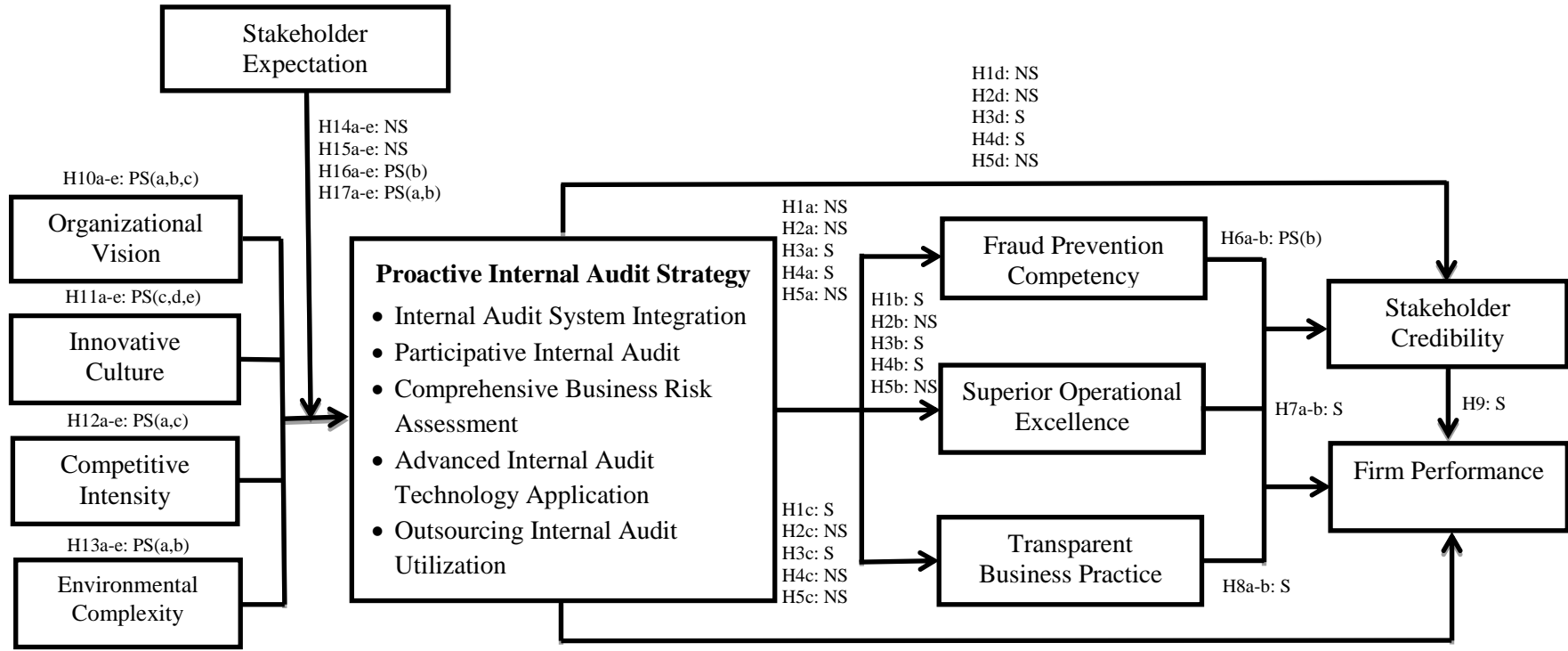


Table 16: Summary of Results in All Hypotheses Testing (Continued)

<b>Research Questions</b>	<b>Hypotheses</b>	<b>Results</b>	<b>Conclusion</b>
(2) How do fraud prevention competency, superior operational excellence, and transparent business practice influence stakeholder credibility and firm performance?	Hypotheses 6a-b, 7a-b, and 8a-b	Fraud prevention competency, superior operational excellence, and transparent business practice have a significant effect on stakeholder credibility and firm performance.	Partially Supported
(3) How does stakeholder credibility influence firm performance?	Hypotheses 9	Stakeholder credibility has a positive influence on firm performance.	Strongly Supported
(4) How do organizational vision, innovative culture, competitive intensity, and environment complexity influence proactive internal audit strategy?	Hypotheses 10a-e, 11a-e, 12a-e, and 13a-e	Organizational vision, innovative culture, competitive intensity, and environment complexity have an impact on each dimension of proactive internal audit strategy.	Partially Supported
(5) How does stakeholder expectation moderate the relationships between antecedence factors and proactive internal audit strategy?	Hypotheses 14a-e, 15a-e, 16a-e, and 17a-e	Stakeholder expectation significantly positive moderates the relationships among the antecedents and each dimension of proactive internal audit strategy.	Partially Supported



Figure 6: Summary of the Results of the Hypotheses Testing



Where,

- S = Hypothesis is supported
- PS = Hypothesis is Partially Supported and supported hypotheses are shown in parentheses
- NS = Hypothesis is not Supported

H1e: S  
H2e: S  
H3e: S  
H4e: S  
H5e: NS

**Control Variables:**  
Firm Age and Firm Size

## Contributions

### Theoretical Contribution

This research attempts to provide expansion keys on previous knowledge and relevant literature of proactive internal audit strategy in the context of Thai listed firms; it creates a better understanding of the relationship between proactive internal audit strategy and firm performance via fraud prevention competency, superior operational excellence, transparent business practice, and stakeholder credibility based on dynamic capability theory. While the antecedents (organizational vision, innovative culture, competitive intensity, and environment complexity) — proactive internal audit strategy relationships regarding the moderating effect (stakeholder expectation) of such relationships can be accounted for by contingency theory. In addition, each of the variables is a new measurement developed from literature review based on dynamic capability theory and contingency theory. This measure highlights the behavioral aspect of accounting and management accounting that might be helpful as a part of an empirical investigation in further research, especially data collection technique from multi-industries.

Moreover, the result of this research demonstrates that the differences of an organization's resources and existing capabilities can create a competitive advantage for achieving superior business performance outcomes. In particular, five dimensions of internal audit system integration have identified a significant theoretical contribution, for instance, internal audit system integration increases transparent business practice which it makes more firm performance as well. Similarly, comprehensive business risk assessment reduces behavioral fraud, adds superior operational excellence, transparent business practice, stakeholder credibility, and firm performance. Hence, these findings lead empirical support to the concept of dynamic capability. It is obvious that the effect of the antecedents on proactive internal audit strategy is statistically significant. For example, organizational vision, competitive intensity, and environmental complexity benefits internal audit system integration; innovative culture allows organization in effectively advanced internal audit technology application. This means that strategic capability depending on the environment changes both internal and external firm factors; so, it adds support the contingency theory.



Subsequently, dynamic capability theory is a key element for integrating, building, and reconfiguring the organization's resources and existing competencies into new competencies that adapt to all circumstance. Hence, an organization is able to utilize a forward-looking approach in the light of new adventure activities (proactive) for the best practice strategic management of internal audit systems. It becomes strategies for carrying out goals, responding to related parties satisfaction, and adding values to an organization in a long run. Meanwhile, contingency theory contributes to congruent between building in an organization's proactive internal audit strategy and its environment, and the adjustment of appropriate strategies for operation and problem solving effectively.

#### Managerial Contribution

The results from this research provide useful information to an organization in particular chief internal audit director or equivalents that have to give the completeness and accuracy of information to the user. Additionally, the findings can use to effectively determine the internal audit strategy and policy that affects the achievements of an organization's goals.

Firstly, chief internal audit director or equivalents and executives should focus principally on building strategic credibility (trust and confidence) in stakeholder such as adopting an ethical standard, implementing the corporate code of conduct, and understanding whether what the public requires. Since credibility is a basic topic that stakeholder views on an organization's moral treatment in the business operation, it is a directly related to stakeholder's decision-making in investment which affects the achievements of an organization's goals in a long-run. In addition, the credibility in stakeholder might happen when top management gives a special attention in enhancing transparent business practices by means of comprehensive business risk assessment.

Secondly, the subject matter of the integration of internal audit system and advanced internal audit technology application should not be neglected because there is a crucial factor that adds a higher level of transparency, superior operational excellence, and competency of fraud prevention in an organization.



Finally, in order to shape the key to a sustainable competitive advantage, organizations have to place in the best way to continuously encourage and develop a firm's ability to match the various environments, for instance, developing a continuous organizational vision and adapting to the uncertain environment. These can build inspiration to chief internal audit director or equivalents for improving the strategy-making process. In particular, pursuing a proactive strategy of internal audit systems such as comprehensive risk assessment and advanced technology application are expected to help an organization move to success.

### **Limitations and Future Research Directions**

#### Limitations

Since this research does not fully take into account the aspect of the racial diversity of respondents, which may influence the decision-making process in an organization's strategic choice that affects firm performance (Richard, 2000; Richard et al., 2003; Roberson and Park, 2007). Especially, the perception of using different proactive internal audit strategy in their business; hence, the results may be affected by these points. In addition, this research uses a cross-sectional design for collecting data from individual's attitude in the situation by themselves; such the relationships between attitude and behavior are rather the inflation of correlations. It may affect interpreting OLS results (Busk, 2005; Lindell and Whitney, 2001).

#### Future Research Directions

The results of this research demonstrate that some research hypotheses are not statistically significant. In particular, outsourcing internal audit utilization does not have a significant effect on its consequences (fraud prevention competency, superior operational excellence, transparent business practice, stakeholder credibility, and firm performance). As a result, this issue needs to re-investigate the relationships among such variables. In addition, firm age (the period of time in business) as a control variable yields no significant results; hence, it needs to seek different measurement or may be changed to new control variables such as the actual years that firm has been in listed firm. For racial diversity of respondents, it needs to be explored in future research.



Moreover, the moderating effect of stakeholder expectation cannot predict the relation among organizational vision, innovative culture and proactive internal audit strategy. Future research should consider seeking an additional study on other potential moderating variables.

Furthermore, future research needs to expand the research contributions and to verify generalizability by collecting data from other samples such as audit committee, internal audit staff, and governmental auditors in Thailand, in order to increase reliability-level of research findings.



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## APPENDICES



**APPENDIX A**  
**The Original Items**



### Original Items in Scales

Construct	Items
<b>Internal Audit System Integration (IASi)</b>	
IASi1	A firm is confident that systematic integration of internal audit will successfully lead to the goals set.
IASi2	A firm prioritizes a combination of internal audit which helps the firm find ways as well as audit methods consistent with missions and circumstances.
IASi3	A firm focuses on sharing resources of internal audit which leads business to effectiveness, safe, and worthiness.
IASi4	A firm encourages a link concerning internal audit system which leads business to effectiveness.
IASi5	A firm encourages internal audit system together with team work as knowledge sharing which leads business to excellence.
<b>Participative Internal Audit (PIA)</b>	
PIA1	A firm is confident that the involvement with internal audit will lead business to its goals.
PIA2	A firm encourages investigation units to be involved with specifying audit directions which leads business to success.
PIA3	A firm prioritizes the systematic development of communication channels between internal auditors and investigation units which leads to accuracy, consistency and corresponding.
PIA4	A firm emphasizes meetings among investigation units, administrators and internal auditors which leads to successful planning.
<b>Comprehensive Business Risk Assessment (CBRa)</b>	
BRa1	A firm encourages the implementation of opinions as well as suggestions to be used in auditing which brings about effectiveness as well as efficiency to internal audit system.



**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
CBRa2	A firm is confident that the ability in assessing risks will bring more success to internal audit.
CBRa3	A firm prioritizes systematic risk assessment which effectively leads to sources of such risk.
CBRa4	A firm emphasizes the analysis of probable uncertainty and damage which serves as information for better internal audit planning.
CBRa5	A firm emphasizes prediction of trends and future business opportunities which will leads to effectiveness in managing risks.
CBRa6	A firm stresses risk prioritization which helps decrease follow-up as well as control of probable effects caused by risks.
<b>Internal Audit System Integration (IASi)</b>	
IASi1	A firm is confident that applying technology of information system brings about more quality of internal audit.
IASi2	A firm prioritizes investment, development and improvement of technology of information system in continuous internal audit which leads to more effectiveness of internal audit.
IASi3	A firm encourages learning and understanding of technology of information system which leads to more potential internal audit.
IASi4	A firm emphasizes analysis of advantages and disadvantages of technology of information system to be used in internal audit which brings about maximum usefulness as well as efficiency in investment.
IASi5	A firm emphasizes development of technology of information system in continuous internal audit which brings about more effectiveness to internal audit.





**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
<b>Outsourcing Internal Audit Utilization (OIAu)</b>	
OIAu1	A firm is confident that employing external experts for examining important transactions as well as specification will lead business to the goals set.
OIAu2	A firm prioritizes analysis of activities requiring external experts which leads to maximum usefulness of internal audit.
OIAu3	A firm encourages employing external experts in taking action in internal audit for the transaction that cannot be examined by the internal organization for more effectiveness.
OIAu4	A firm emphasizes analysis of usefulness as well as costs occurring from employing external experts in taking action in internal audit for more effectiveness, efficiency and worthiness.
OIAu5	A firm emphasizes employing external experts by considering working experience as well as performance in the past which brings about maximum usefulness to future employment of business.
<b>Fraud Prevention Competency (FPC)</b>	
FPC1	A firm specifies directions as well as investigative methods systematically.
FPC2	A firm develops signs that indicate corruption as well as suspiciousness that might happen.
FPC3	A firm strictly and clearly specifies rules, regulations and policies involved with corruption.
FPC4	Under current operation, a firm is confident that it can comprehensively control channels as well as opportunities for corruption.



**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
<b>Superior Operational Excellence (SOE)</b>	
SOE1	A firm operates to be consistent with the objectives set.
SOE2	A firm applies technology and modern administrative techniques under potentiality and ability for maximum usefulness.
SOE3	A firm utilizes administration of organizational resources with worthiness and maximum usefulness both in the short and long run.
SOE4	A firm systematically and continuously creates and develops innovation in organizational administration.
<b>Transparency Business Practice (TBC)</b>	
TBC1	A firm is comprehensively operated according to goals, objectives and scope of operation.
TBC2	A firm is continuously operated based on ethics, morals and environmental conservation.
TBC3	A firm operates all aspects by considering regulations, rules and policy that may have an effect on stakeholders.
TBC4	A firm is confident that all of the activities involving business operation can be reliably investigated to specify accurate sources.
<b>Stakeholder Credibility (SC)</b>	
SC1	A firm is continuously acknowledged by stakeholders.
SC2	A firm frequently obtains cooperation from customers, society and related persons when operating activities.
SC3	Old customers usually come to a firm for services as new customers increase due to suggestions from loyal old customers.



**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
SC4	A firm usually receives advices as well as suggestions from stakeholders about services and development of more effective operation.
<b>Firm Performance (FP)</b>	
FP1	A firm achieves goals of operation both in the short and long run.
FP2	A firm continuously creates and develops innovation.
FP3	A firm is accepted by stakeholders as administration with transparency and good governance.
FP4	A number of customers continuously increase.
FP5	A firm is confident that it can be well operated under potentiality as well as capacity both at present and in the future.
<b>Organizational Vision (OV)</b>	
OV1	A firm is confident that specification of directions as well as clear operation will lead business to the goals set.
OV2	A firm encourages investment of technology of information system in managing and administrating for more success.
OV3	A firm continuously and systematically emphasizes personnel development for more effectiveness.
OV4	A firm continuously holds firm to ethics and morals in business operation so as to be accepted by stakeholders.
<b>Innovative Culture (IC)</b>	
IC1	A firm is confident that innovation in operation will effectively lead business to objectives.
IC2	A firm encourages application of concepts, approaches and new techniques which leads business to successful administration.



**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
IC3	A firm encourages personnel to be creative, decisive and willing to take risks in exploring creativities for effective operation.
IC4	A firm prioritizes learning new things which will increase more potentiality in operation.
IC5	A firm emphasizes performance evaluation by measuring innovation and creativities so as to foster enthusiasm in creating more innovation.
<b>Competitive Intensity (CI)</b>	
CI1	Increasing competitive environments cause firms to seek best strategies for obtaining advantages in competition.
CI2	A number of continuously increasing competitors cause firms to emphasize and create new strategies which effectively respond to competition.
CI3	States and patterns of competition which dramatically changed in the past cause firms to develop and improve continuous competition.
CI4	Under unpredictable current states, firms emphasize learning of situations so as to develop and improve strategies to support operation.
<b>Environment Complexity (EC)</b>	
EC1	At present, political changes, policy and laws cause firms to adjust ways of learning which is more suitable for situations.
EC2	Continuous changes of characteristics and social patterns cause firms to emphasize increased understanding so as to specify directions to be consistent with situations.



**Original Items in Scales (Continued)**

<b>Construct</b>	<b>Items</b>
CI3	Dramatic economic changes cause firms to hold firm in specifying standard of operation so as to continuously build confidence from related persons.
CI4	Complex technology of information system causes firms to seek knowledge, understanding and application for maximum usefulness.
<b>Stakeholder Expectation (SE)</b>	
SE1	At present, increased legislation concerning operation causes firms to learn, understand and apply for maximum usefulness of stakeholders.
SE2	Stakeholders expect sustainable compensation which causes firms to hold firm to honesty, transparency and fairness for security in the long run.
SE3	Customers and stakeholders expect good service with quality which causes firms to hold firm to standard of operation as well as directions of operation for better quality.
SE4	Society as well as publicity expects more responsibilities towards operation which cause firms to develop potentials of business operation to be consistent with continuous business growth.



**APPENDIX B**  
**Item Factor Loadings and Reliability**  
**Analyses in Pre-Test**



**Item Factor Loadings and Reliability Analyses in Pre-Test<sup>a</sup>**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>Reliability (Alpha)</b>
Firm Performance (FP)	FP1	.778	.873
	FP2	.824	
	FP3	.683	
	FP4	.908	
	FP5	.871	
Internal Audit System Integration (IASi)	IASi1	.774	.908
	IASi2	.891	
	IASi3	.820	
	IASi4	.938	
	IASi5	.866	
Participative Internal Audit (PIA)	PIA1	.847	.841
	PIA2	.737	
	PIA3	.889	
	PIA4	.821	
Comprehensive Business Risk Assessment (CBRa)	CBRa1	.742	.944
	CBRa2	.836	
	CBRa3	.843	
	CBRa4	.869	
	CBRa5	.685	
	CBRa6	.750	
Advanced Internal Audit Technology Application (AIATa)	AIATa1	.817	.951
	AIATa2	.915	
	AIATa3	.932	
	AIATa4	.959	
	AIATa5	.957	

<sup>a</sup> n=30



**Item Factor Loadings and Reliability Analyses in Pre-Test<sup>a</sup> (Continued)**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>Reliability (Alpha)</b>
Outsourcing Internal Audit Utilization (OIAu)	OIAu1	.885	.947
	OIAu2	.894	
	OIAu3	.970	
	OIAu4	.831	
	OIAu5	.967	
Fraud Prevention Competency (FPC)	FPC1	.817	.824
	FPC2	.835	
	FPC3	.783	
	FPC4	.810	
Superior Operational Excellence (SOE)	SOE1	.898	.862
	SOE2	.859	
	SOE3	.820	
	SOE4	.792	
Transparency Business Practice (TBP)	TBP1	.903	.912
	TBP2	.872	
	TBP3	.907	
	TBP4	.883	
Stakeholder Credibility (SC)	SC1	.861	.875
	SC2	.918	
	SC3	.856	
	SC4	.783	
Organizational Vision (OV)	OV1	.867	.829
	OV2	.651	
	OV3	.864	
	OV4	.862	

<sup>a</sup> n=30





**Item Factor Loadings and Reliability Analyses in Pre-Test<sup>a</sup> (Continued)**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>Reliability (Alpha)</b>
Innovative Culture (IC)	IC1	.803	.865
	IC2	.921	
	IC3	.775	
	IC4	.866	
	IC5	.668	
Competitive Intensity (CI)	CI1	.841	.873
	CI2	.809	
	CI3	.904	
	CI4	.850	
Environment Complexity (EC)	EC1	.912	.952
	EC2	.972	
	EC3	.923	
	EC4	.935	
Stakeholder Expectation (SE)	SE1	.793	.911
	SE2	.924	
	SE3	.930	
	SE4	.928	

<sup>a</sup> n=30



**APPENDIX C**  
**Test of Non-Response Bias**



### Test of Non-Response Bias

Comparison	N	Mean	S.D.	t	Significant Level**
<b>Types of industrial complex:</b>					
• First Group	57	4.75	2.174	-.163	.871
• Second Group	56	4.82	2.200		
<b>The period of time in business:</b>					
• First Group	57	3.04	0.981	-.200	.842
• Second Group	56	3.07	0.951		
<b>The period of time in listed:</b>					
• First Group	57	2.26	0.955	.863	.392
• Second Group	56	2.11	0.966		
<b>Award:</b>					
• First Group	57	1.42	0.498	.692	.490
• Second Group	56	1.36	0.483		

\*\* Represent statistical significance at the 5% level



## **APPENDIX D**

### **Tests the Assumption of Regression Analysis**



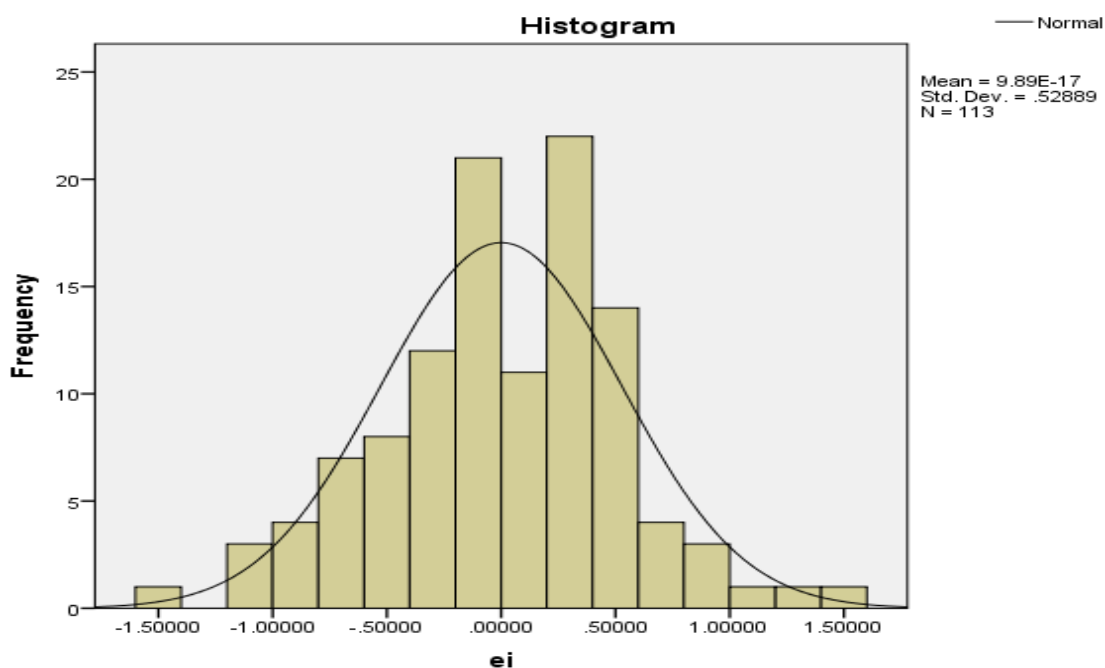
## Normality

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ei	.068	113	.200*	.991	113	.700

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



## **Stem-and-Leaf Plot**

```

ei Stem-and-Leaf Plot

Frequency      Stem & Leaf

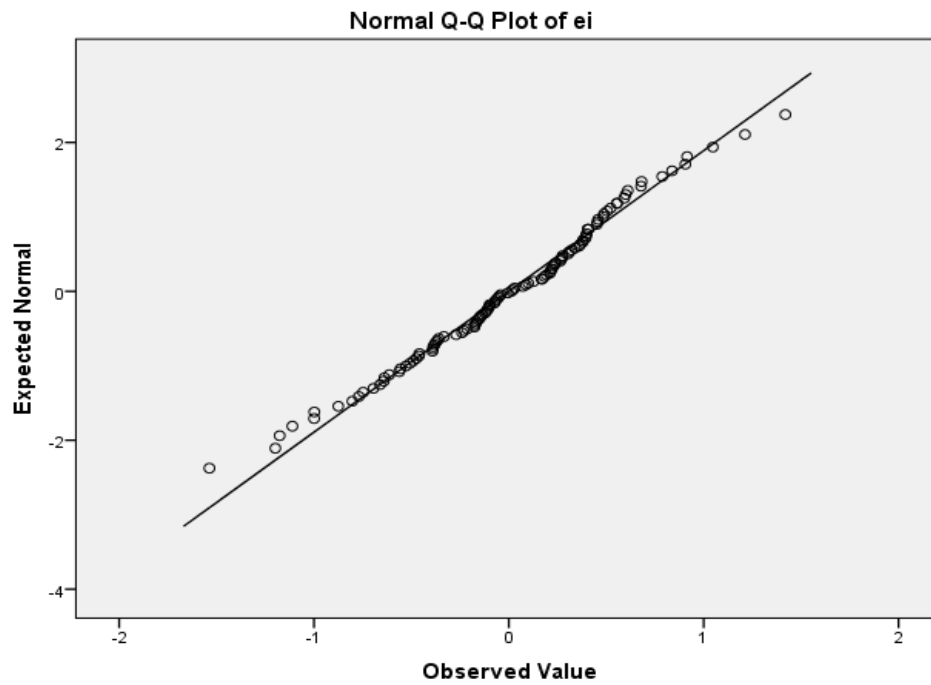
1.00 Extremes      (<=-1.5)
3.00      -1 .  111
4.00      -0 .  8899
7.00      -0 .  6666677
8.00      -0 .  44445555
12.00     -0 .  222233333333
21.00     -0 .  00000001111111111111
11.00      0 .  0000011111
22.00      0 .  2222222222333333333333
14.00      0 .  44444444555555
 4.00      0 .  6667
 3.00      0 .  899
 1.00      1 .  0
 1.00      1 .  2
 1.00      1 .  4

Stem width:    1.00000
Each leaf:     1 case(s)

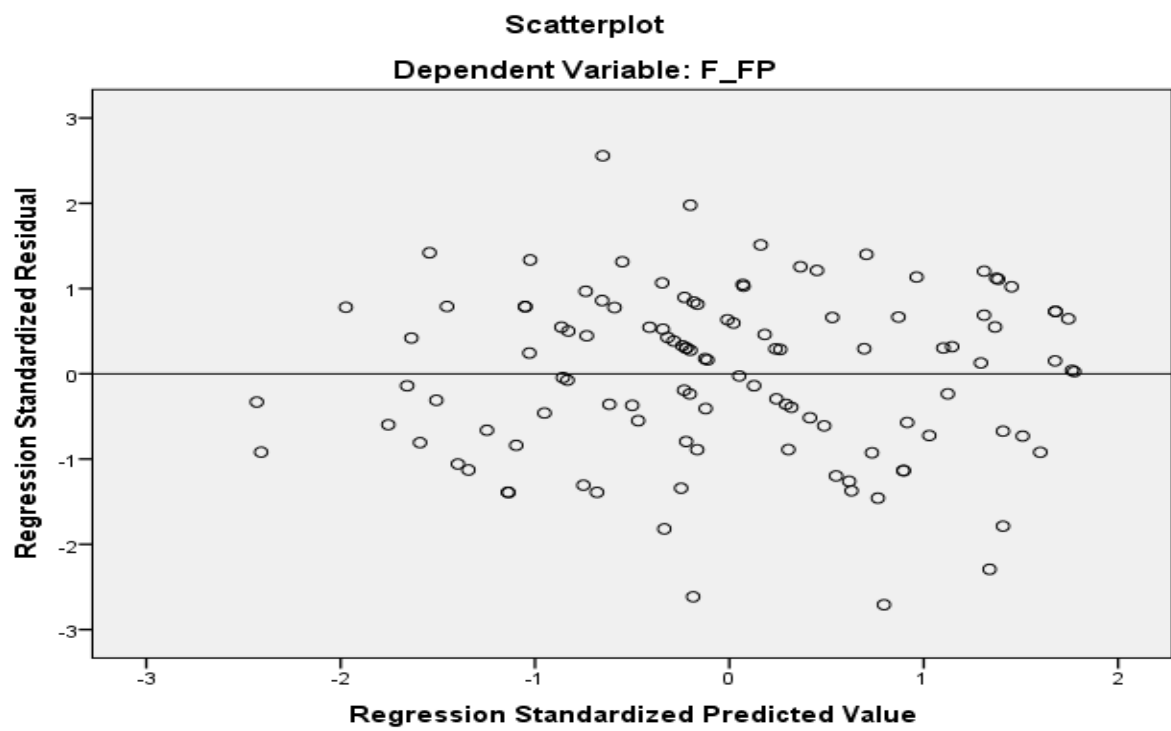
```



### Linearity



### Heteroscedasticity



**Multicollinearity****Tests of Multicollinearity**

<b>Equation</b>	<b>Dependent Variable</b>	<b>Maximum Variance Inflation Factors (VIF's)</b>
1	FPC	3.859
2	SOE	3.859
3	TBP	3.859
4	SC	3.859
5	FP	3.859
6	SC	3.394
7	FP	3.394
8	FP	1.053
9	IASi	4.438
10	IASi	6.565
11	PIA	4.438
12	PIA	6.565
13	CBRa	4.438
14	CBRa	6.565
15	AIATa	4.438
16	AIATa	6.565
17	OIAu	4.438
18	OIAu	6.565



**Autocorrelation****Tests of Autocorrelation**

<b>Equation</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	<b>Durbin-Watson</b>
1	.793	.629	.604	.629	1.908
2	.805	.647	.624	.613	2.043
3	.807	.651	.628	.610	2.039
4	.726	.527	.495	.710	2.082
5	.788	.622	.604	.629	2.125
6	.799	.638	.614	.621	2.250
7	.849	.720	.707	.541	2.129
8	.829	.687	.678	.567	2.129
9	.800	.639	.619	.617	2.162
10	.830	.689	.656	.587	2.082
11	.745	.555	.530	.685	1.724
12	.792	.628	.587	.642	1.716
13	.868	.753	.739	.511	1.661
14	.875	.765	.740	.510	1.645
15	.772	.596	.574	.653	1.810
16	.799	.638	.598	.634	1.683
17	.489	.239	.196	.897	2.123
18	.544	.296	.219	.884	2.067





**APPENDIX E**  
**Key Participant Characteristics**



### Key Participant Characteristics

Description	Categories	Frequencies	Percentage (%)
1. Gender	Male	58	51.33
	Female	55	48.67
	Total	113	100.00
2. Age	Less than 30 years old	1	0.88
	30-40 years old	34	30.10
	41-50 years old	41	36.28
	More than 50 years old	37	32.74
	Total	113	100.00
3. Marital status	Single	42	37.17
	Married	64	56.64
	Divorced	7	6.19
	Total	113	100.00
4. Education levels	Undergraduate	46	40.71
	Higher than undergraduate	67	59.29
	Total	113	100.00
5. Working experience	Less than 5 years	10	8.85
	5-10 years	23	20.36
	11-15 years	27	23.89
	More than 15 years	53	46.90
	Total	113	100.00
6. Average revenues per month	Less than 100,000 Baht	60	53.10
	100,000-150,000 Baht	20	17.70
	150,001-200,000 Baht	16	14.16
	More than 200,000 Baht	17	15.04
	Total	113	100.00
7. Working positions	Internal audit executive	40	35.40
	Internal audit director	73	64.60
	Other position	-	-
	Total	113	100.00



**APPENDIX F**  
**Demographic of Firm Characteristics**



### Demographic of Firm Characteristics

Description	Categories	Frequencies	Percentage (%)
1. Industry category	Agro and food industry	10	8.85
	Consumer products	12	10.62
	Financials	10	8.85
	Industrials	17	15.04
	Property and construction	22	19.47
	Resources	9	7.97
	Services	19	16.81
	Technology	14	12.39
	Total	113	100.00
2. The current registered capital	Less than 1,000 Million Baht	57	50.44
	1,000 – 5,000 Million Baht	27	23.89
	5,001 – 10,000 Million Baht	9	7.97
	More than 10,000 Million Baht	20	17.70
	Total	113	100.00
3. The period of time in business	Less than 10 years old	8	7.09
	10 – 20 years old	25	22.12
	21 – 30 year old	33	29.20
	More than 30 year old	47	41.59
	Total	113	100.00
4. The period of time in listed firms	Less than 10 years old	32	28.32
	10 – 20 years old	39	34.51
	21 – 30 year old	31	27.43
	More than 30 year old	11	9.74
	Total	113	100.00
5. Number of employees	Less than 500 persons	46	40.71
	500 – 1,000 persons	30	26.55
	1,001 – 1,500 persons	13	11.50
	More than 1,500 persons	24	21.24
	Total	113	100.00



**Demographic of Firm Characteristics (Continued)**

<b>Description</b>	<b>Categories</b>	<b>Frequencies</b>	<b>Percentage (%)</b>
6. Net annual income	Less than 1,000 Million Baht	36	31.86
	1,000 – 5,000 Million Baht	31	27.43
	5,0001 – 10,000 Million Baht	17	15.05
	More than 10,000 Million Baht	29	25.66
	Total	113	100.00
7. Total assets	Less than 1,000 Million Baht	21	18.58
	1,000 – 5,000 Million Baht	36	31.86
	5,0001 – 10,000 Million Baht	17	15.05
	More than 10,000 Million Baht	39	34.51
	Total	113	100.00
8. Corporate governance award	Yes	69	61.06
	No	44	38.94
	Total	113	100.00



## **APPENDIX G**

### **Cover Letters and Questionnaire: Thai Version**





ที่ ศธ 0530.10/ 747

คณะกรรมการบัญชีและการจัดการ  
มหาวิทยาลัยมหาสารคาม  
อำเภอกันทรวิชัย จังหวัดมหาสารคาม  
44150

6 มิถุนายน 2558

เรื่อง ขอความอนุเคราะห์กรอกแบบสอบถาม

เรียน ผู้อำนวยการฝ่ายตรวจสอบภายใน/ผู้จัดการฝ่ายตรวจสอบภายใน

ด้วย นายธกานต์ ซาดิวงค์ นิสิตระดับปริญญาเอก คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “การตรวจสอบภายในเชิงรุกและผลการดำเนินงาน: หลักฐานเชิงประจักษ์จากตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการทำวิทยานิพนธ์ หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) และการศึกษาในครั้งนี้ได้เน้นให้นิสิตศึกษาข้อมูลด้วยตนเอง ดังนั้น เพื่อให้การจัดทำวิทยานิพนธ์เป็นไปด้วยความเรียบร้อยและบรรลุวัตถุประสงค์ คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขออนุญาตให้ นายธกานต์ ซาดิวงค์ ศึกษาและเก็บรวบรวมในรายละเอียดตามแบบสอบถามที่แนบมาพร้อมนี้

คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่านในการให้ข้อมูลในครั้งนี้เป็นอย่างยิ่ง และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ปทุเมศน์บาร์มี อุตสาหะวานิชกิจ)

คณบดีคณะกรรมการบัญชีและการจัดการ

มหาวิทยาลัยมหาสารคาม

สำนักบริหารหลักสูตรระดับบัณฑิตศึกษาและวิจัย

คณะกรรมการบัญชีและการจัดการ โทรศัพท์ (043) 754333 ต่อ 3408





**แบบสอบถามเพื่อการวิจัย**  
**เรื่อง การตรวจสอบภายในเชิงรุกและผลการดำเนินงาน:**  
**หลักฐานเชิงประจักษ์จากตลาดหลักทรัพย์แห่งประเทศไทย**

คำชี้แจง

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาเรื่อง “การตรวจสอบภายในเชิงรุกและผลการดำเนินงาน: หลักฐานเชิงประจักษ์จากตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งจะใช้เป็นข้อมูลในการจัดทำวิทยานิพนธ์ในระดับปริญญาเอกของผู้วิจัยในหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาการบัญชี คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม

ดังนั้น ข้าพเจ้าใคร่ขอความอนุเคราะห์จากท่านในการตอบแบบสอบถามชุดนี้ ซึ่งแบ่งข้อคำถามออกเป็น 7 ตอน ประกอบด้วย

- ตอนที่ 1 ข้อมูลทั่วไปของผู้บริหารฝ่ายตรวจสอบภายในบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 2 ข้อมูลทั่วไปของธุรกิจการเงินบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 3 ความคิดเห็นเกี่ยวกับการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 4 ความคิดเห็นเกี่ยวกับผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 5 ความคิดเห็นเกี่ยวกับปัจจัยภายในที่มีผลต่อการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 6 ความคิดเห็นเกี่ยวกับปัจจัยภายนอกที่มีผลต่อการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย
- ตอนที่ 7 ข้อคิดเห็นและข้อเสนอแนะเกี่ยวกับการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

ข้าพเจ้าขอขอบพระคุณท่านที่ได้สละเวลาตอบแบบสอบถามชุดนี้ทุกข้ออย่างถูกต้องครบถ้วน คำตอบของท่านจะถูกเก็บรักษาไว้เป็นความลับ โดยข้าพเจ้าจะนำเสนอในภาพรวมเท่านั้น หากท่านมีความประสงค์ที่จะขอรับรายงานสรุปผลเกี่ยวกับการศึกษานี้ โปรดแจ้งความประสงค์ตามที่ระบุไว้ข้างล่างนี้

- ต้องการ E-mail: \_\_\_\_\_
- ไม่ต้องการ

อนึ่ง หากท่านมีข้อสงสัยประการใดเกี่ยวกับแบบสอบถาม โปรดติดต่อข้าพเจ้า นายธกานต์ ขาดิวงค์ โทรศัพท์ หมายเลข 086-2253170 หรือ E-mail: Tkan110475@gmail.com

(นายธกานต์ ขาดิวงค์)  
 นิสิตปริญญาเอก สาขาวิชาการบัญชี  
 คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม





## ตอนที่ 1 ข้อมูลทั่วไปของผู้บริหารฝ่ายตรวจสอบภายในของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

1. เพศ

 ชาย หญิง

2. อายุ

 น้อยกว่า 30 ปี 30 - 40 ปี 41 - 50 ปี มากกว่า 50 ปี

3. สถานภาพ

 โสด สมรส หม้าย/หย่าร้าง

4. ระดับการศึกษา

 ปริญญาตรี สูงกว่าปริญญาตรี

5. ประสบการณ์การทำงานในบริษัท

 น้อยกว่า 5 ปี 5 - 10 ปี 11 - 15 ปี มากกว่า 15 ปี

6. รายได้เฉลี่ยต่อเดือน

 ต่ำกว่า 100,000 บาท 100,000 – 150,000 บาท 150,001 – 200,000 บาท มากกว่า 200,000 บาท

7. ตำแหน่งงานในปัจจุบัน

 ผู้อำนวยการฝ่ายตรวจสอบภายใน ผู้จัดการฝ่ายตรวจสอบภายใน

ตอนที่ 2 ข้อมูลทั่วไปของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

1. ประเภทของกลุ่มอุตสาหกรรม
  - กลุ่มเกษตรและอุตสาหกรรมอาหาร
  - กลุ่มสินค้าอุปโภคบริโภค
  - กลุ่มธุรกิจการเงิน
  - กลุ่มวัสดุดิบและสินค้าอุตสาหกรรม
  - กลุ่มอสังหาริมทรัพย์และก่อสร้าง
  - กลุ่มทรัพยากร
  - กลุ่มบริการ
  - กลุ่มเทคโนโลยี
  
2. ทุนจดทะเบียนในปัจจุบัน
 

<input type="checkbox"/> ต่ำกว่า 1,000,000,000 บาท	<input type="checkbox"/> 1,000,000,000 - 5,000,000,000 บาท
<input type="checkbox"/> 5,001,000,000 - 10,000,000,000 บาท	<input type="checkbox"/> มากกว่า 10,000,000,000 บาท
  
3. ระยะเวลาในการดำเนินธุรกิจ
 

<input type="checkbox"/> น้อยกว่า 10 ปี	<input type="checkbox"/> 10 - 20 ปี
<input type="checkbox"/> 21 - 30 ปี	<input type="checkbox"/> มากกว่า 30 ปี
  
4. ระยะเวลาในการเข้าเป็นบริษัทจดทะเบียนในตลาดหลักทรัพย์
 

<input type="checkbox"/> น้อยกว่า 10 ปี	<input type="checkbox"/> 10 - 20 ปี
<input type="checkbox"/> 21 - 30 ปี	<input type="checkbox"/> มากกว่า 30 ปี
  
5. จำนวนบุคลากรในปัจจุบัน
 

<input type="checkbox"/> น้อยกว่า 500 คน	<input type="checkbox"/> 500 - 1,000 คน
<input type="checkbox"/> 1,001 - 1,500 คน	<input type="checkbox"/> มากกว่า 1,500 คน
  
6. รายได้สุทธิต่อปี
 

<input type="checkbox"/> ต่ำกว่า 1,000,000,000 บาท	<input type="checkbox"/> 1,000,000,000 - 5,000,000,000 บาท
<input type="checkbox"/> 5,001,000,000 - 10,000,000,000 บาท	<input type="checkbox"/> มากกว่า 10,000,000,000 บาท
  
7. มูลค่าสินทรัพย์รวม
 

<input type="checkbox"/> ต่ำกว่า 1,000,000,000 บาท	<input type="checkbox"/> 1,000,000,000 - 5,000,000,000 บาท
<input type="checkbox"/> 5,001,000,000 - 10,000,000,000 บาท	<input type="checkbox"/> มากกว่า 10,000,000,000 บาท
  
8. รางวัลเกี่ยวกับความสำเร็จ/การกำกับดูแลกิจการที่ดีที่กิจการเคยได้รับ
 

<input type="checkbox"/> เคยได้รับ	<input type="checkbox"/> ไม่เคยได้รับ
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ตอนที่ 3 ความคิดเห็นเกี่ยวกับการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

การตรวจสอบภายในเชิงรุก	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
<b>การบูรณาการระบบการตรวจสอบภายใน</b>					
1. กิจการเชื่อมั่นว่าการบูรณาการระบบการตรวจสอบภายในอย่างเป็นระบบจะช่วยให้การดำเนินงานบรรลุเป้าหมายได้ดียิ่งขึ้น					
2. กิจการให้ความสำคัญกับการผสมผสานระบบการตรวจสอบภายในเข้าด้วยกัน ซึ่งจะช่วยให้เกิดแนวทางและวิธีการตรวจสอบที่มีความเหมาะสมกับภารกิจและสภาพแวดล้อมขององค์กร					
3. กิจการมุ่งเน้นให้เกิดการแบ่งปันการใช้ทรัพยากรร่วมกันในระบบการตรวจสอบภายใน ซึ่งจะช่วยให้การปฏิบัติงานมีประสิทธิภาพ ประหยัดและคุ้มค่า					
4. กิจการส่งเสริมให้มีการเชื่อมโยงองค์ความรู้ที่เกิดขึ้นเกี่ยวกับระบบการตรวจสอบภายใน ซึ่งจะช่วยให้การปฏิบัติงานมีประสิทธิภาพมากยิ่งขึ้น					
5. กิจการสนับสนุนให้มีระบบการตรวจสอบภายในที่มีการทำงานเป็นทีม เพื่อให้เกิดการแลกเปลี่ยนเรียนรู้ ซึ่งจะนำไปสู่ความเป็นเลิศในการปฏิบัติงาน					
<b>การตรวจสอบภายในแบบมีส่วนร่วม</b>					
6. กิจการเชื่อมั่นว่าการมีส่วนร่วมในการตรวจสอบภายใน จะช่วยให้การบริหารการตรวจสอบภายในบรรลุเป้าหมายได้ดียิ่งขึ้น					
7. กิจการสนับสนุนให้หน่วยรับตรวจเข้ามามีส่วนร่วมในการกำหนดแนวทางการตรวจสอบ ซึ่งจะช่วยให้การปฏิบัติงานตรวจสอบประสบผลสำเร็จได้ดียิ่งขึ้น					
8. กิจการให้ความสำคัญกับการพัฒนาช่องทางการสื่อสารระหว่างฝ่ายตรวจสอบภายในกับหน่วยรับตรวจสอบอย่างเป็นระบบ ซึ่งจะช่วยให้ข้อมูลมีความถูกต้อง สอดคล้อง และตรงกันมากยิ่งขึ้น					
9. กิจการมุ่งเน้นให้มีการประชุมปรึกษาหารือระหว่างหน่วยรับตรวจ ผู้บริหาร และฝ่ายตรวจสอบภายใน ซึ่งจะช่วยให้การวางแผนการตรวจสอบมีประสิทธิภาพมากยิ่งขึ้น					
<b>การประเมินความเสี่ยงธุรกิจอย่างครอบคลุม</b>					
10. กิจการสนับสนุนให้มีการนำข้อคิดเห็นและข้อเสนอแนะเกี่ยวกับการตรวจสอบภายในมาปรับใช้ในกระบวนการตรวจสอบ ซึ่งจะช่วยให้การตรวจสอบภายในมีประสิทธิภาพและประสิทธิผลมากยิ่งขึ้น					
11. กิจการเชื่อมั่นว่าการมีความสามารถในการประเมินความเสี่ยง จะช่วยให้การตรวจสอบภายในประสบความสำเร็จมากยิ่งขึ้น					
12. กิจการให้ความสำคัญกับการประเมินความเสี่ยงเข้าด้วยกันอย่างเป็นระบบ ซึ่งจะช่วยให้สามารถระบุแหล่งที่มาของความเสี่ยงได้อย่างมีประสิทธิภาพ					



## ตอนที่ 3 (ต่อ)

การตรวจสอบภายในเชิงรุก	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
13. กิจการมุ่งเน้นให้มีการวิเคราะห์ถึงความไม่แน่นอนและความเสียหายที่อาจเกิดขึ้น ซึ่งจะช่วยให้มีข้อมูลในการวางแผนการตรวจสอบภายในได้ดียิ่งขึ้น					
14. กิจการมุ่งเน้นให้มีการคาดการณ์แนวโน้มและโอกาสทางธุรกิจที่จะเกิดขึ้นในอนาคต ซึ่งจะช่วยให้เกิดประสิทธิภาพในการจัดการความเสี่ยงเพิ่มมากขึ้น					
15. กิจการให้ความสำคัญกับการจัดลำดับความเสี่ยง ซึ่งจะช่วยลดการติดตามและควบคุมผลกระทบที่เกิดขึ้นจากความเสี่ยงได้อย่างมีประสิทธิภาพ					
<b>การประยุกต์ใช้เทคโนโลยีล้ำสมัยในการตรวจสอบภายใน</b>					
16. กิจการเชื่อมั่นว่าการประยุกต์ใช้เทคโนโลยีสารสนเทศในการตรวจสอบภายใน จะช่วยให้การตรวจสอบภายในมีคุณภาพมากยิ่งขึ้น					
17. กิจการให้ความสำคัญกับการลงทุน พัฒนา และปรับปรุงเทคโนโลยีสารสนเทศในการตรวจสอบภายในอย่างต่อเนื่อง ซึ่งจะช่วยให้การตรวจสอบภายในมีประสิทธิภาพมากยิ่งขึ้น					
18. กิจการส่งเสริมให้มีการเรียนรู้และทำความเข้าใจเกี่ยวกับเทคโนโลยีสารสนเทศ ซึ่งจะช่วยให้การปฏิบัติงานตรวจสอบมีศักยภาพมากยิ่งขึ้น					
19. กิจการมุ่งเน้นให้มีการวิเคราะห์ข้อดีข้อเสียของการนำเทคโนโลยีสารสนเทศเข้ามาใช้ในการตรวจสอบภายใน ซึ่งจะช่วยให้การลงทุนเกิดประโยชน์และประสิทธิผลสูงสุด					
20. กิจการมุ่งเน้นให้มีการพัฒนาระบบเทคโนโลยีสารสนเทศในการตรวจสอบภายในอย่างต่อเนื่อง ซึ่งจะช่วยให้การบริหารงานตรวจสอบภายในมีประสิทธิภาพมากยิ่งขึ้น					
<b>การใช้บริการผู้ตรวจสอบภายในโดยจ้างบุคคลภายนอก</b>					
21. กิจการเชื่อมั่นว่าการจ้างผู้เชี่ยวชาญภายนอกเพื่อตรวจสอบรายการที่มีความสำคัญและลักษณะเฉพาะ จะช่วยให้การตรวจสอบภายในบรรลุเป้าหมายมากยิ่งขึ้น					
22. กิจการให้ความสำคัญกับการวิเคราะห์กิจกรรมที่ต้องว่าจ้างผู้เชี่ยวชาญภายนอกมาปฏิบัติงานตรวจสอบแทน ซึ่งจะทำให้กระบวนการตรวจสอบเกิดประโยชน์สูงสุด					
23. กิจการสนับสนุนให้มีการจ้างผู้เชี่ยวชาญภายนอกเข้ามาปฏิบัติงานตรวจสอบภายใน สำหรับรายการที่ไม่สามารถดำเนินการได้จากหน่วยงานภายใน ซึ่งจะทำให้การปฏิบัติงานมีประสิทธิภาพมากขึ้น					



ตอนที่ 4 ความคิดเห็นเกี่ยวกับผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

ผลการดำเนินงาน	ระดับความคิดเห็น				
	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
	5	4	3	2	1
24. กิจการมุ่งเน้นให้มีการวิเคราะห์ถึงประโยชน์และต้นทุนที่เกิดขึ้นในการจ้างผู้เชี่ยวชาญภายนอกเข้ามาปฏิบัติงานตรวจสอบภายใน ซึ่งจะทำให้เกิดประสิทธิภาพ ประสิทธิผล และคุ้มค่า					
25. กิจการมุ่งมั่นให้มีการจ้างผู้เชี่ยวชาญภายนอก โดยจะต้องพิจารณาจากประสบการณ์และผลการปฏิบัติงานในอดีต ซึ่งจะช่วยให้การว่าจ้างมีประโยชน์สูงสุดต่อกิจการในอนาคต					
<b>ความสามารถในการป้องกันการทุจริต</b>					
1. กิจการมีการกำหนดแนวทางและวิธีการในการตรวจสอบอย่างเป็นระบบ					
2. กิจการมีการพัฒนาสัญญาณที่บ่งบอกหรือบ่งชี้ถึงการทุจริตและความไม่ชอบมาพากลที่อาจจะเกิดขึ้น					
3. กิจการมีการกำหนดกฎ ระเบียบ ข้อบังคับและนโยบายที่เกี่ยวข้องกับการทุจริต อย่างเคร่งครัดและชัดเจน					
4. ภายใต้งานดำเนินงานที่เป็นอยู่ กิจการมั่นใจว่าสามารถควบคุมช่องทาง และโอกาสที่จะเกิดการทุจริตได้อย่างครอบคลุม					
<b>ความเป็นเลิศในการบริหารจัดการที่เหนือกว่า</b>					
5. กิจการมีการบริหารจัดการองค์กรที่สอดคล้องและเป็นไปตามวัตถุประสงค์ที่กำหนด					
6. กิจการมีการประยุกต์ใช้เทคนิคและวิธีการบริหารจัดการสมัยใหม่ ภายใต้อิทธิพลและความสามารถที่มีอยู่ให้เกิดประโยชน์สูงสุด					
7. กิจการมีการบริหารจัดการทรัพยากรขององค์กรอย่างมีประสิทธิภาพ และเกิดประโยชน์สูงสุดต่อองค์กรทั้งในระยะสั้นและระยะยาว					
8. กิจการมีการริเริ่มและพัฒนานวัตกรรมในการบริหารงานขององค์กรอย่างเป็นระบบและต่อเนื่อง					
<b>ความโปร่งใสในการประกอบธุรกิจ</b>					
9. กิจการมีดำเนินงานตามเป้าหมาย วัตถุประสงค์และขอบเขตในการดำเนินงานอย่างครบถ้วน					
10. กิจการมีการดำเนินงานโดยยึดมั่นในจริยธรรม คุณธรรม และการรักษาสีงแวดล้อมอย่างต่อเนื่อง					
11. กิจการดำเนินงานในทุกด้าน โดยคำนึงถึงกฎระเบียบ ข้อบังคับ หรือนโยบายที่มีผลกระทบต่อผู้มีส่วนได้เสียเป็นสำคัญ					
12. กิจการมั่นใจว่าทุกกิจกรรมที่เกิดขึ้นในการดำเนินธุรกิจ สามารถตรวจสอบถึงความถูกต้องของแหล่งที่มาได้อย่างน่าเชื่อถือ					



## ตอนที่ 4 (ต่อ)

ผลการดำเนินงาน	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
<b>ความเชื่อมั่นของผู้มีส่วนได้เสีย</b>					
13. กิจการได้รับการยอมรับจากผู้มีส่วนได้เสียอย่างต่อเนื่อง					
14. กิจการได้รับความร่วมมือที่ดีจากลูกค้า สังคม และผู้มีส่วนเกี่ยวข้อง ในการดำเนินกิจกรรมต่างๆ อยู่เสมอ					
15. กิจการมีลูกค้าเก่ามาใช้บริการอย่างต่อเนื่อง และมีลูกค้าใหม่เพิ่มขึ้น ซึ่งเกิดจากการแนะนำของลูกค้าเก่าที่มีความจงรักภักดีต่อกิจการ					
16. กิจการได้รับคำแนะนำและข้อเสนอแนะจากผู้มีส่วนได้เสียเกี่ยวกับการให้บริการและการพัฒนาระบบการดำเนินงานให้มีประสิทธิภาพมากยิ่งขึ้นอยู่เสมอ					
<b>ผลการดำเนินงาน</b>					
17. กิจการสามารถบรรลุเป้าหมายในการดำเนินงานทั้งในระยะสั้นและระยะยาว ได้เป็นอย่างดี					
18. กิจการสามารถสร้างสรรค์และพัฒนานวัตกรรมได้อย่างต่อเนื่อง					
19. กิจการได้รับการยอมรับจากผู้มีส่วนได้เสียว่าเป็นกิจการที่มีการบริหารงานที่มีความโปร่งใสและมีการกำกับดูแลกิจการที่ดี					
20. กิจการมีจำนวนลูกค้าที่เพิ่มขึ้นอย่างต่อเนื่อง					
21. กิจการมั่นใจว่าจะสามารถดำเนินงานภายใต้ศักยภาพและสมรรถนะที่มีอยู่ทั้งในปัจจุบันและในอนาคตได้เป็นอย่างดี					

## ตอนที่ 5 ความคิดเห็นเกี่ยวกับปัจจัยภายในที่ส่งผลกระทบต่อการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

ปัจจัยภายในที่ส่งผลกระทบต่อการตรวจสอบภายในเชิงรุก	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
<b>วิสัยทัศน์องค์กร</b>					
1. กิจการเชื่อมั่นว่าการกำหนดแนวทางและวิธีการดำเนินงานที่ชัดเจน จะช่วยให้องค์กรบรรลุเป้าหมายมากยิ่งขึ้น					
2. กิจการสนับสนุนให้มีการลงทุนด้านเทคโนโลยีสารสนเทศในการบริหารจัดการ ซึ่งจะช่วยให้การบริหารจัดการประสบความสำเร็จมากยิ่งขึ้น					
3. กิจการมุ่งเน้นในการพัฒนาบุคลากรอย่างต่อเนื่องและเป็นระบบ ซึ่งจะทำให้การปฏิบัติงานมีประสิทธิภาพมากยิ่งขึ้น					
4. กิจการยึดมั่นในจริยธรรมและคุณธรรมในการดำเนินธุรกิจ ซึ่งจะทำให้ได้รับการยอมรับจากผู้มีส่วนได้เสียอย่างต่อเนื่อง					



## ตอนที่ 5 (ต่อ)

ปัจจัยภายในที่ส่งผลกระทบต่อการตรวจสอบภายในเชิงรุก	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
<b>วัฒนธรรมนวัตกรรม</b>					
5. กิจการเชื่อมั่นว่าการมีนวัตกรรมในการดำเนินงานจะทำให้บรรลุวัตถุประสงค์ได้อย่างมีประสิทธิภาพ					
6. กิจการส่งเสริมให้มีการประยุกต์ใช้แนวคิด วิธีการ และเทคนิคในการทำงานใหม่ๆ ซึ่งจะช่วยให้การบริหารงานประสบความสำเร็จ					
7. กิจการสนับสนุนให้บุคลากรมีความคิดสร้างสรรค์ กล้าตัดสินใจ และกล้ารับความเสี่ยงในคิดค้นและสร้างสรรค์สิ่งใหม่ๆ ซึ่งจะทำให้เกิดประสิทธิภาพและประสิทธิผลในการปฏิบัติงาน					
8. กิจการให้ความสำคัญกับการเรียนรู้สิ่งใหม่ๆ ที่เกิดขึ้นในการดำเนินธุรกิจ ซึ่งจะช่วยเพิ่มศักยภาพในการปฏิบัติงานมากยิ่งขึ้น					
9. กิจการมุ่งเน้นให้มีการประเมินผลการปฏิบัติงาน โดยวัดจากนวัตกรรมและความคิดสร้างสรรค์ ซึ่งจะช่วยให้เกิดความกระตือรือร้นในการสร้างสรรค์นวัตกรรมใหม่ๆ มากยิ่งขึ้น					

## ตอนที่ 6 ความคิดเห็นเกี่ยวกับปัจจัยภายนอกที่ส่งผลกระทบต่อการตรวจสอบภายในเชิงรุกของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

ปัจจัยภายนอกที่ส่งผลกระทบต่อการตรวจสอบภายในเชิงรุก	ระดับความคิดเห็น				
	มากที่สุด 5	มาก 4	ปานกลาง 3	น้อย 2	น้อยที่สุด 1
<b>ความรุนแรงทางการแข่งขัน</b>					
1. สภาพแวดล้อมทางการแข่งขันที่มีความรุนแรงมากยิ่งขึ้น ทำให้กิจการต่างๆ ต้องแสวงหากลยุทธ์ที่ดีที่สุด เพื่อสร้างรายได้เปรียบทางการแข่งขัน					
2. จำนวนคู่แข่งที่เพิ่มมากขึ้นอย่างต่อเนื่อง ทำให้กิจการต้องมุ่งเน้นและสร้างสรรค์กลยุทธ์ใหม่ๆ ที่สามารถตอบสนองต่อการแข่งขันได้อย่างมีประสิทธิภาพมากยิ่งขึ้น					
3. สภาพและรูปแบบการแข่งขันที่เปลี่ยนแปลงไปอย่างมากจากอดีต ทำให้กิจการต่างๆ มุ่งพัฒนาและปรับปรุงกลยุทธ์ในการแข่งขันอย่างต่อเนื่อง					
4. ในสภาวะปัจจุบันที่ไม่สามารถคาดการณ์หรือพยากรณ์ได้ยาก ทำให้กิจการต่างๆ ต้องมุ่งมั่นที่จะเรียนรู้สถานการณ์ เพื่อพัฒนาและปรับปรุงกลยุทธ์ที่เกื้อหนุนการดำเนินงานได้เป็นอย่างดี					







## **APPENDIX H**

### **Cover Letters and Questionnaire: English Version**





**Research Questionnaire**  
**Proactive Internal Audit Strategy and Firm Performance:**  
**Empirical Evidence from Thai-listed Firms**

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Directions:

This study aims to investigate proactive internal audit strategy and firm performance: empirical evidence from Thai-listed firms. The data will be used to present in a dissertation for a degree of doctor of philosophy in Accountancy and Management, Maharakham University.

Therefore, the researcher asks for your kind consideration in responding to the questionnaire which is divided into 7 sections:

Section 1 includes general information of internal audit executives of Thailand-listed firms;

Section 2 includes general information concerning internal audit administrators of listed firms in the Securities Exchange of Thailand;

Section 3 includes opinions towards proactive internal audit of listed firms in the Securities Exchange of Thailand;

Section 4 includes opinions about overall operation of listed firms in the Securities Exchange of Thailand;

Section 5 includes opinions about internal factors that influence proactive internal audit of listed firms in the Securities Exchange of Thailand;

Section 6 includes external factors that influence proactive internal audit of listed firms in the Securities Exchange of Thailand;

Section 7 includes opinions and suggestions about proactive internal audit of listed firms in the Securities Exchange of Thailand;

The researcher would thus like to express sincere thanks for your devotion of time in responding completely to this questionnaire. Your responses will be kept confidential as the researcher will only reveal your overall responses. Should you need the results of this questionnaire, please indicate your intention below:

need an e-mail address \_\_\_\_\_

no need of an e-mail address

Should you have any questions concerning the questionnaire, please contact Mr. Tkan Chatiwong at 086-2253170 or [tkan110475@gmail.com](mailto:tkan110475@gmail.com)

(Mr. Tkan Chatiwong)  
 Ph.D student in the Faculty of ccountancy and Management,  
 Maharakham University



**Section 1 includes general information of internal audit director of Thailand-listed firms**

## 1. Sex

 male female

## 2. Age

 less than 30 years old 30 - 40 years old 41 - 50 years old over 50 years old

## 3. Marital status

 single married divorced

## 4. Education

 undergraduate degree post graduate degree

## 5. Working experience

 less than 5 years 5 - 10 years 11 - 15 years over 15 years

## 6. Monthly income

 less than 100,000 baht 100,000 – 150,000 baht 150,001 – 200,000 baht over 200,000 baht

## 7. Position

 internal audit director internal audit manager

## Section 2: General information about listed companies in the Securities Exchange of Thailand

1. Types of industrial complex
  - agriculture and food industry
  - consumer goods
  - financial business
  - raw materials and industrial goods
  - real estates and construction
  - resources
  - services
  - technology
  
2. Current authorized capital
  - less than 1,000,000,000 baht
  - 1,000,000,000 - 5,000,000,000 baht
  - 5,001,000,000 – 10,000,000,000 baht
  - over 10,000,000,000 baht
  
3. Period of time of business operation
 

<input type="checkbox"/> less than 10 years	<input type="checkbox"/> 10 – 20 years
<input type="checkbox"/> 21 – 30 years	<input type="checkbox"/> over 30 years
  
4. Period of time in listed firm
 

<input type="checkbox"/> less than 10 years	<input type="checkbox"/> 10 – 20 years
<input type="checkbox"/> 21 – 30 years	<input type="checkbox"/> over 30 years
  
5. Number of current employees
 

<input type="checkbox"/> less than 500 persons	<input type="checkbox"/> 500 – 1,000 persons
<input type="checkbox"/> 1,001 – 1,500 persons	<input type="checkbox"/> over 1,500 persons
  
6. Net annual income
  - less than 1,000,000,000 bath
  - 1,000,000,000 - 5,000,000,000 baht
  - 5,001,000,000 – 10,000,000,000 baht
  - over 10,000,000,000 baht
  
7. Total asset value
  - less than 1,000,000,000 baht
  - 1,000,000,000 - 5,000,000,000 baht
  - 5,001,000,000 – 10,000,000,000 baht
  - over 10,000,000,000 baht
  
8. Award for accomplishment/good cooperate governance award
 

<input type="checkbox"/> received	<input type="checkbox"/> never receive
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**Section 3 includes opinions towards proactive internal audit strategy of Thai-listed firms**

Proactive internal audit	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
<b>Internal Audit System Integration</b>					
1. A firm is confident that systematic integration of internal audit will successfully lead to the goals set.					
2. A firm prioritizes a combination of internal audit which helps the firm find ways as well as audit methods consistent with missions and circumstances.					
3. A firm focuses on sharing resources of internal audit which leads business to effectiveness, safe, and worthiness.					
4. A firm encourages a link concerning internal audit system which leads business to effectiveness.					
5. A firm encourages internal audit system together with team work as knowledge sharing which leads business to excellence.					
<b>Participative Internal Audit</b>					
6. A firm is confident that the involvement with internal audit will lead business to its goals.					
7. A firm encourages investigation units to be involved with specifying audit directions which leads business to success.					
8. A firm prioritizes the systematic development of communication channels between internal auditors and investigation units which leads to accuracy, consistency and corresponding.					
9. A firm emphasizes meetings among investigation units, administrators and internal auditors which leads to successful planning.					



## Section 3 (Continued)

Proactive internal audit	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
<b>Comprehensive Business Risk Assessment</b>					
10. A firm encourages the implementation of opinions as well as suggestions to be used in auditing which brings about effectiveness as well as efficiency to internal audit system.					
11. A firm is confident that the ability in assessing risks will bring more success to internal audit.					
12. A firm prioritizes systematic risk assessment which effectively leads to sources of such risk.					
13. A firm emphasizes the analysis of probable uncertainty and damage which serves as information for better internal audit planning.					
14. A firm emphasizes prediction of trends and future business opportunities which will leads to effectiveness in managing risks.					
15. A firm stresses risk prioritization which helps decrease follow-up as well as control of probable effects caused by risks.					
<b>Internal Audit System Integration</b>					
16. A firm is confident that applying technology of information system brings about more quality of internal audit.					
17. A firm prioritizes investment, development and improvement of technology of information system in continuous internal audit which leads to more effectiveness of internal audit.					
18. A firm encourages learning and understanding of technology of information system which leads to more potential internal audit.					



## Section 3 (Continued)

Proactive internal audit	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
19. A firm emphasizes analysis of advantages and disadvantages of technology of information system to be used in internal audit which brings about maximum usefulness as well as efficiency in investment.					
20. A firm emphasizes development of technology of information system in continuous internal audit which brings about more effectiveness to internal audit.					
<b>Outsourcing Internal Audit Utilization</b>					
21. A firm is confident that employing external experts for examining important transactions as well as specification will lead business to the goals set.					
22. A firm prioritizes analysis of activities requiring external experts which leads to maximum usefulness of internal audit.					
23. A firm encourages employing external experts in taking action in internal audit for the transaction that cannot be examined by the internal organization for more effectiveness.					
24. A firm emphasizes analysis of usefulness as well as costs occurring from employing external experts in taking action in internal audit for more effectiveness, efficiency and worthiness.					
25. A firm emphasizes employing external experts by considering working experience as well as performance in the past which brings about maximum usefulness to future employment of business.					



**Section 4 includes opinions about performance outcomes of Thai-listed firms**

Performance Outcomes	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
<p><b>Fraud Prevention Competency</b></p> <p>1. A firm specifies directions as well as investigative methods systematically.</p>					
<p>2. A firm develops signs that indicate corruption as well as suspiciousness that might happen.</p>					
<p>3. A firm strictly and clearly specifies rules, regulations and policies involved with corruption.</p>					
<p>4. Under current operation, a firm is confident that it can comprehensively control channels as well as opportunities for corruption.</p>					
<p><b>Superior Operational Excellence</b></p> <p>5. A firm operates to be consistent with the objectives set.</p>					
<p>6. A firm applies technology and modern administrative techniques under potentiality and ability for maximum usefulness.</p>					
<p>7. A firm utilizes administration of organizational resources with worthiness and maximum usefulness both in the short and long run.</p>					
<p>8. A firm systematically and continuously creates and develops innovation in organizational administration.</p>					
<p><b>Transparency Business Practice</b></p> <p>9. A firm is comprehensively operated according to goals, objectives and scope of operation.</p>					
<p>10. A firm is continuously operated based on ethics, morals and environmental conservation.</p>					





**Section 4 (Continued)**

<b>Performance Outcomes</b>	<b>Levels of opinion</b>				
	<b>Strongly Agree - Strongly Disagree</b>				
	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
11. A firm operates all aspects by considering regulations, rules and policy that may have an effect on stakeholders.					
12. A firm is confident that all of the activities involving business operation can be reliably investigated to specify accurate sources.					
<b>Stakeholder Credibility</b>					
13. A firm is continuously acknowledged by stakeholders.					
14. A firm frequently obtains cooperation from customers, society and related persons when operating activities.					
15. Old customers usually come to a firm for services as new customers increase due to suggestions from loyal old customers.					
16. A firm usually receives advices as well as suggestions from stakeholders about services and development of more effective operation.					
<b>Firm Performance</b>					
17. A firm achieves goals of operation both in the short and long run.					
18. A firm continuously creates and develop innovation.					
19. A firm is accepted by stakeholders as administration with transparency and good governance.					
20. A number of customers continuously increase.					
21. A firm is confident that it can be well operated under potentiality as well as capacity both at present and in the future.					



**Section 5 includes opinions about internal environmental factors that influence proactive internal audit strategy of Thai-listed firms**

Internal Environmental Factor	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
<p style="text-align: center;"><b>Organizational Vision</b></p> <p>1. A firm is confident that specification of directions as well as clear operation will lead business to the goals set.</p>					
<p>2. A firm encourages investment of technology of information system in managing and administrating for more success.</p>					
<p>3. A firm continuously and systematically emphasizes personnel development for more effectiveness.</p>					
<p>4. A firm continuously holds firm to ethics and morals in business operation so as to be accepted by stakeholders.</p>					
<p style="text-align: center;"><b>Innovative Culture</b></p> <p>5. A firm is confident that innovation in operation will effectively lead business to objectives.</p>					
<p>6. A firm encourages application of concepts, approaches and new techniques which leads business to successful administration.</p>					
<p>7. A firm encourages personnel to be creative, decisive and willing to take risks in exploring creativities for effective operation.</p>					
<p>8. A firm prioritizes learning new things which will increase more potentiality in operation.</p>					
<p>9. A firm emphasizes performance evaluation by measuring innovation and creativities so as to foster enthusiasm in creating more innovation.</p>					



**Section 6 includes external environmental factors that influence proactive internal audit strategy of Thai-listed firms**

Internal Environmental Factor	Levels of opinion				
	Strongly Agree - Strongly Disagree				
	5	4	3	2	1
<p align="center"><b>Competitive Intensity</b></p> <p>1. Increasing competitive environments cause firms to seek best strategies for obtaining advantages in competition.</p>					
<p>2. A number of continuously increasing competitors cause firms to emphasize and create new strategies which effectively respond to competition.</p>					
<p>3. States and patterns of competition which dramatically changed in the past cause firms to develop and improve continuous competition.</p>					
<p>4. Under unpredictable current states, firms emphasize learning of situations so as to develop and improve strategies to support operation.</p>					
<p align="center"><b>Environment Complexity</b></p> <p>5. At present, political changes, policy and laws cause firms to adjust ways of learning which is more suitable for situations.</p>					
<p>6. Continuous changes of characteristics and social patterns cause firms to emphasize increased understanding so as to specify directions to be consistent with situations.</p>					
<p>7. Dramatic economic changes cause firms to hold firm in specifying standard of operation so as to continuously build confidence from related persons.</p>					
<p>8. Complex technology of information system causes firms to seek knowledge, understanding and application for maximum usefulness.</p>					





**APPENDIX I**  
**Letters to the Experts**





## บันทึกข้อความ

หน่วยงาน คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333-3431 Fax 043- 754422

ที่ ศธ.0530.10/

วันที่ มิถุนายน 2558

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน อาจารย์ ดร.เกสินี หมั่นไธสง

ด้วย นายธกานต์ ชาตวงค์ นิสิตระดับปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “กลยุทธ์การตรวจสอบภายในเชิงรุกและผลการดำเนินงาน : หลักฐานเชิงประจักษ์จากตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์จากท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามเอกสารแนบท้าย

จึงเรียนมาเพื่อโปรดพิจารณา

(รองศาสตราจารย์ ดร.ปัทมาภรณ์ อุตสาหะวานิชกิจ)

คณบดีคณะการบัญชีและการจัดการ





## บันทึกข้อความ

หน่วยงาน คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333-3431 Fax 043- 754422

ที่ ศธ.0530.10/

วันที่ มิถุนายน 2558

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน อาจารย์ ดร.สุธนา บุญเหลือ

ด้วย นายธกานต์ ซาดิวงค์ นิสิตระดับปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “กลยุทธ์การตรวจสอบภายในเชิงรุกและผลการดำเนินงาน : หลักฐานเชิงประจักษ์จากตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงใคร่ขอความอนุเคราะห์จากท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและขอเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามเอกสารแนบท้าย

จึงเรียนมาเพื่อโปรดพิจารณา

(รองศาสตราจารย์ ดร.ปฤกษ์บาร์มี อุตสาหะวานิชกิจ)

คณบดีคณะการบัญชีและการจัดการ



## **VITA**





## VITA

**NAME** Mr. Takan Chatiwong  
**DATE OF BIRTH** April 11, 1975  
**PLACE OF BIRTH** khonkaen Province  
**ADDRESS** 138/25 Soi 16, Srijan Road, Maung District,  
Khonkaen Province 40000, Thailand  
**POSITION** Lacturer  
**OFFICE** Faculty of Accounting and Management,  
Mahasarakham University, Khamriang Sub-District,  
Kantarawichai District, Maha Sarakham 44150, Thailand

### EDUCATIONAL BACKGROUND

2001 Bachelor of Management (Accounting),  
Mahasarakham University, Thailand  
2007 Master of Accounting, Mahasarakham University, Thailand  
2016 Doctor of Philosophy (Accounting), Mahasarakham  
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### RESEARCH

2007 Takan Chatiwong, Praphuek Ussahawanitchakit, and  
Napapron Ponnikornkit. (2006). Effects of business ethics  
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