Dynamic Internal Audit Innovation and Ongoing Firm Survival: An Empirical Study of Thai-Listed Firms

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Abstract

The purpose of this study is to investigate the effects of dynamic internal audit innovation on ongoing firm survival via the mediating influences of organizational outcomes, which include financial repletion reporting, risk reduction, and comported performance achievement. Information technology change, regulation enforcement, and volatile business are hypothesized to become the antecedents of dynamic internal audit innovation. Also, intra-cooperation communication focus and environmental turbulence are the moderating variables of the relationship between dynamic internal audit innovation-organizational outcomes and organizational outcomes-ongoing firm survival. Data were collected from internal audit directors amount 128 persons from Thai-Listed firms. A questionnaire was analyzed by using the Ordinary Least Squares (OLS) regression analysis. The results of the OLS regression analysis revealed that dynamic internal audit innovation had a positive influence on all organizational outcomes. In addition, financial repletion reporting, risk reduction, and comported performance achievement had a positive effect on ongoing firm survival. Moreover, two antecedents—information technology change and volatile business—also had a positive effect on dynamic internal audit innovation. Additionally, the focus of intra-cooperation communication

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and environmental turbulence showed partially positive supporting effects on dynamic internal audit innovation-organizational outcomes and organizational outcomes-ongoing firm survival. However, future research is needed to collect in-depth data so as to reflect the actual concept of dynamic internal audit innovation. Finally, the advantages of internal auditing are a key factor that leads to add organization value, to support the auditor's task and enhance organization sustainability.

Keywords: *Dynamic Internal Audit Innovation, Internal Audit Technology Adaptation, Technical Audit Integration, Investigative Method Approach*

นวัตกรรมการตรวจสอบภายในเชิงพลวัตและความอยู่รอดขององค์กรอย่างยั่งยืน: หลักฐานเชิงประจักษ์บริษัทที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย

*สุวรรณ หวังเจริญเดช**

บทคัดย่อ

วัตถุประสงค์ของการศึกษานี้เพื่อต้องการตรวจสอบผลกระทบของนวัตกรรมการตรวจสอบภายในเชิงพลวัตที่มีต่อความอยู่รอดขององค์กรอย่างยั่งยืน โดยทำการศึกษาผลกระทบจากตัวแปรแทรก ซึ่งได้แก่ ตัวแปรผลลัพธ์องค์กร ประกอบด้วย ความน่าเชื่อถือของรายงานทางการเงิน ความเสี่ยงของผลกระทบที่ลดลง และผลสัมฤทธิ์การปฏิบัติขององค์กร นอกจากนั้น ยังได้ทำการศึกษาถึงตัวแปรที่เกิดขึ้นก่อนหน้านั้น ประกอบด้วย การเปลี่ยนแปลงข้อมูลทางเทคโนโลยี การบังคับใช้กฎระเบียบ และธุรกิจมีความผันผวน อีกทั้งได้ทำการศึกษาตัวแปรเชื่อมอีก 2 ตัว คือ การสื่อสารร่วมภายในองค์กร และความวุ่นวายของสภาพแวดล้อม โดยทำการตั้งสมมติฐานทดสอบตัวแปรดังกล่าว กลุ่มตัวอย่างเป็นผู้บริหารตรวจสอบภายในจำนวน 128 รายที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ใช้แบบสอบถามในการเก็บข้อมูลและใช้สถิติในการวิเคราะห์การถดถอยแบบ OLS ผลจากการศึกษาพบว่า นวัตกรรมการตรวจสอบภายในเชิงพลวัต มีผลกระทบเชิงบวกต่อตัวแปรผลลัพธ์องค์กร นอกจากนี้ ตัวแปรผลลัพธ์องค์กรก็มีผลกระทบต่อความอยู่รอดขององค์กรอย่างยั่งยืน แต่มีตัวแปรที่เกิดก่อนหน้านั้นเพียง 2 ตัว ประกอบด้วย การเปลี่ยนแปลงข้อมูลทางเทคโนโลยีและธุรกิจมีความผันผวนที่มีผลกระทบเชิงบวกต่อนวัตกรรมการตรวจสอบภายในเชิงพลวัต ส่วนตัวแปรเชื่อมทั้ง 2 ตัว มีความสัมพันธ์ในเชิงบวกเพียงบางส่วนเท่านั้น นอกจากนี้ หากต้องการทำการศึกษาวิจัยในอนาคต ควรทำการเก็บข้อมูลในเชิงลึกเพื่อสะท้อน

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ในเห็นถึงแนวคิดที่แท้จริงของนวัตกรรมการตรวจสอบภายในเชิงพลวัตขององค์กร ประโยชน์ที่ได้จากการศึกษาวิจัย ทำให้เข้าใจว่ากระบวนการตรวจสอบภายในเชิงพลวัต นั้น ก่อให้เกิดวิสัยทัศน์ในระยะยาว ช่วยสนับสนุนการทำงานของผู้ตรวจสอบภายใน และช่วยเพิ่ม ความยั่งยืนขององค์กรต่อไป

คำสำคัญ: *นวัตกรรมการตรวจสอบภายในเชิงพลวัต การปรับตัวเทคโนโลยีการตรวจสอบ ภายใน การบูรณาการเทคนิคการตรวจสอบ กระบวนการตรวจสอบ*

1. Introduction

In response to the audit failures and corporate scandals in the U.S. in 2001 and 2002, such as in the case of Enron, Tyco Industries, WorldCom, and also Picnic in Thailand, the internal audit function has become a cornerstone that plays an important role in order to survive and grow adaptation and review operational process to achieve goal and competitive advantage, that because stakeholders demand greater information confidence to serve their decision-making and to protect them from financial statement fraud. The internal audit functions as a part of the solution to a perceived breakdown in the systems of business reporting, internal control, and ethical behavior (Bailey, Gramling and Ramamoorti, 2003). As a result, the internal audit function can play an important assurance role in the governance processes of organizations, particularly in the area of risk management and control, including financial report reliability and firm performance (Cohen, Krisnamoorthy and Wright, 2002; Securities and Exchange Commission (SEC), 2003; Gramling and others, 2004; Weidenmier and Ramamoorti, 2006). Accordingly, in order to achieve effective corporate governance to ensure appropriate audit work, firms have to improve the effectiveness and efficiency of the internal audit function by using dynamic internal audit innovation.

Lack of management integrity and transparency in business operation and financial reporting are serious problems of global capital markets. As pointed out by the Public Company Accounting Oversight Board (PCAOB) and the Institute of Internal Auditors (IIA), the internal audit function plays an integral role by monitoring the risk and compliance requirement according to the Sarbanes-Oxley Act of 2002 (Alles, Kogan and Vasarhelyi, 2008; Gramling et al., 2004). In order to gain effectiveness and efficiency of the internal audit function, dynamic internal audit innovation is necessary. In this study, dynamic internal audit innovation refers to new or developed internal audit strategies and techniques that the internal auditor uses to conduct internal audit activities. Accordingly, the results of internal audit activities come from dynamic innovation providing guidance, recommendations, and value-added supports in order to help the firm be successful and improve its stability (Sueyoshi, Shang and Chiang, 2008).

High implementation of dynamic internal audit innovation is likely to affect the internal audit function and to push organizational outcomes and survival of firms. If firms are stable it means that they will survive in a high-competitive market both in the short term and long term. However, dynamic internal audit innovation cannot influence firm stability directly but when firms are helped to increase the reliability of their financial reports, improve the organizational processes, and advance the effectiveness of risk management; as a result, the effectiveness of dynamic internal audit innovation has played an important role in business success and stability is enhanced.

According to the literature, there is still lacks empirical evidence for investigating the relationship among dynamic internal audit innovation. In addition, most of the prior research on professional internal audit is focused on experimental researches, which are limited in generalizability due to a lack of reality and applicability to the real phenomena (Cooper et al., 2006). Further, motivation may be a wish to focus on the core activities that enable the organization to create and maintain a competitive advantage, or to improve the internal audit service by gaining access to more specialized skills. Antonucci et al., (1998, p. 26) argue that dynamic innovation provides businesses with the ability to focus on core competencies, access to state-of-the art technology, and increase flexibility and cost savings. Thus, the present author has identified from the literature a number of possible motivations for the use of dynamic internal audit innovation and developed a hypothesis.

Thus, an attempt is made here to expand on this point, the aspect of dynamic internal audit innovation, which is a strategy of the internal audit function used to conduct internal audit activities in the context of Thailand. Consequently, the main research question is framed as: How does dynamic internal audit innovation impact ongoing firm survival? The specific research questions are as follows: (1) How does each dimension of dynamic internal audit innovation influence organizational outcomes? (2) How do organizational outcomes affect ongoing firm survival? (3) How do three antecedents: information technology change, regulation enforcement, and volatile business have an effect on each dimension of dynamic internal audit innovation? and, (4) How do intra-cooperation communication focus moderate the

relationship between dynamic internal audit innovation-organizational outcomes, and environmental turbulence moderate the relationship between organizational outcomes-ongoing firm survival?

The main purpose of this study is to examine the relationships between dynamic internal audit innovation and ongoing firm survival. Also, the specific research purposes are as follows: (1) to examine the relationship among the dimensions of dynamic internal audit innovation on financial repletion reporting, risk reduction, and comported performance achievement; (2) to study the relationship among financial repletion reporting, risk reduction, and comported performance achievement on ongoing from survival; (3) to determine the relationship among three antecedents: information technology change, regulation enforcement, and volatile business on three dimensions of dynamic internal audit innovation; (4) to examine the moderating effect of the intra-cooperation communication focus and environmental turbulence. Besides, the concept of dynamic internal audit innovation emphasizes the ways that contribute to internal audit functions achieving their goals. Finally, dynamic internal audit innovation contributes to the efficiency and effectiveness of organizational outcomes, which will lead to ongoing firm survival, especially in fast growing countries such as Thailand. This study employs two principal theoretical frameworks, including the dynamic capability view of firms and the resource-based view of the firm derived from the conceptual model.

2. Theoretical Foundation

This study uses two theories to explain the phenomena surrounding dynamic internal audit innovation by integrating the dynamic capability view of firms and the resource-based view of the firm theory, which makes this conceptual model clearly understood.

First, the concept of the dynamic capability view of firms was introduced by Teece et al. (1997), which has been developed as a theoretical framework to explain why firms operation are different and how firms achieve a competitive advantage that leads to superior long-term performance. Based on the dynamic capability, dynamic internal audit innovation as the capability of the organization's

tool, are the operation to improve management efficiency and effectiveness and help organization achieve their objectives and goals (Witcher et al., 2008).

Secondly, the resource-based view of the firm focuses on firms' bundle of valuable resources and helps transform a long-run competitive advantage into a sustained competitive advantage (Capron and Hulland, 1999). This means that the resources which firms hold must not be easily bought, transferred, copied and that concurrently they add value to a firm as being rare (Barney, 2006).

3. Literature Review and Hypothesis Development

Based on literature reviews from Ebaid, (2011) stated that dynamic internal audit innovation is considered specialized work and applies internal audit standards, procedures, and techniques necessary to perform work. This study purposes that dynamic internal audit innovations are positively associated with organizational outcomes. Organizational outcomes is a mediating, that have a positive relationship with ongoing firm survival. The intra-cooperation communication focus is assumed to increase the relationship between dynamic internal audit innovation and organizational outcomes. Also, environmental turbulence is assumed to increase the relationship among organizational outcomes and ongoing firm survival. Lastly, the antecedent factors are examined and expected to have a positive relationship with dynamic internal audit innovation. Then, the conceptual model of this study is presented as shown in Figure 1.

3.1 Dynamic Internal Audit Innovation

Dynamic internal audit innovation refers to new or developed internal audit strategies and techniques that internal auditors use to conduct internal audit activities. Because of corporate scandals, internal auditors have to create and develop audit strategies or techniques in order to increase the efficiency and effectiveness of their activities.

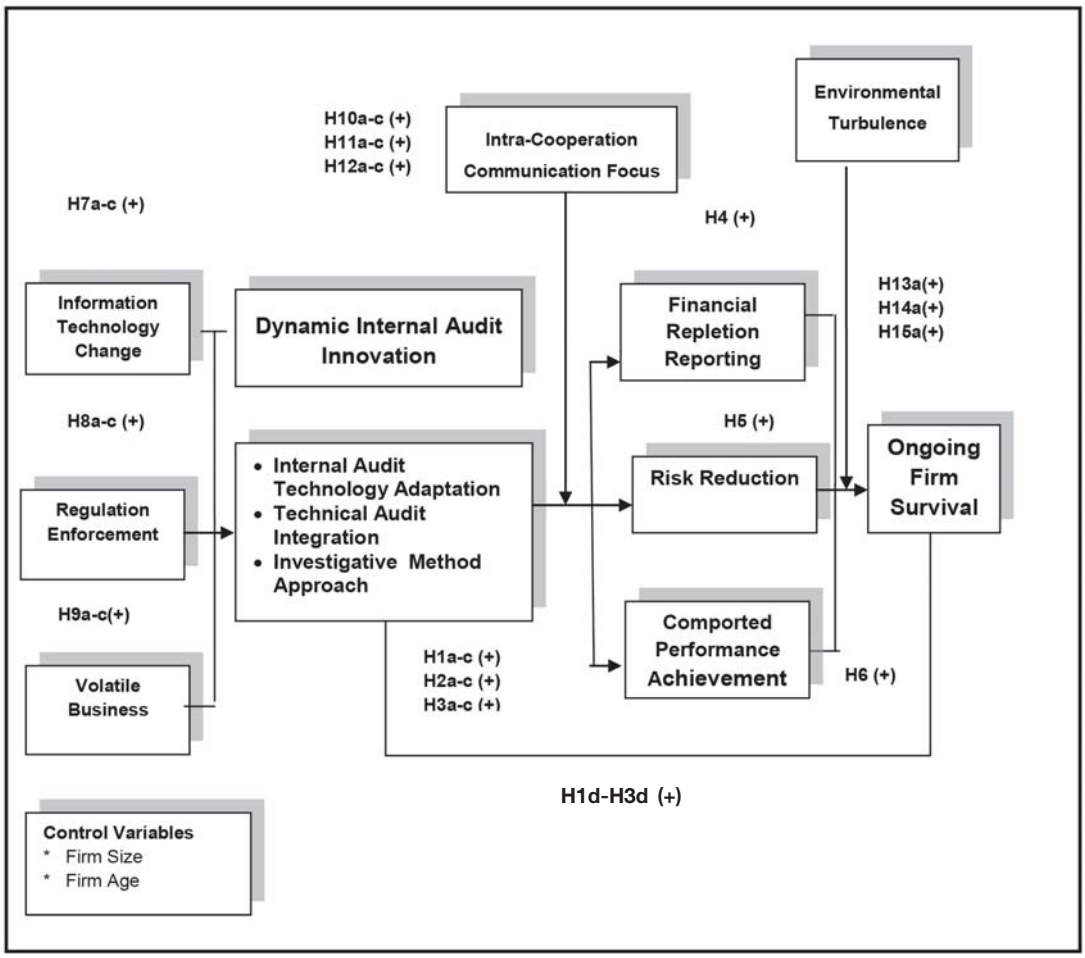

Figure 1: **Conceptual Model of Dynamic Internal Audit Innovation and Ongoing Firm Survival: An empirical study of Thai-Listed Firms**

3.1.1 Internal Audit Technology Adaptation

The appropriateness of internal audit technology adaptation can help internal audit functions improve the efficiency of the audit process, and to achieve organizational outcomes and maximize value for the stakeholder. Therefore, the internal audit technology adaptation is an essential tool that can help internal auditing obtain effective auditing in dynamic environments and enhance the credibility of the audit function through improvements in assessing, analyzing, and using data more efficiently (Diaz and Loraas, 2010; Curtis and Payne, 2008). Thus, the following hypothesis emerged for testing:

Hypothesis 1: Internal audit technology adaptation is expected to improve (a) financial repletion reporting, (b) risk reduction, and (c) comported performance achievement, to lead or to allow the organization to focus more clearly on its core business.

3.1.2 Technical Audit Integration

Technical audit integration refers to the linking of all audit procedures into the audit system in order to achieve the audit goals (Sumritsakun and Ussahawanitchakit, 2009). The technique of audit integration is essential for the dynamic innovation of internal audit functions to improve the efficiency and effectiveness of the audit process (Chaney and Kim, 2007; Bernardo and others, 2010). Thus, the following hypothesis emerged for testing:

Hypothesis 2: Technical audit integration is expected to improve (a) financial repletion reporting, (b) risk reduction, (c) comported performance achievement, and (d) ongoing firm survival, to lead or to allow the organization to focus more clearly on its core business.

3.1.3 Investigative Method Approach

The investigative method approach refers to the process of seeking the best approach methods that match the commitment task contextures which meet professional standards and are important for the excellent internal audit process, as well as detect fraud or error (Torrington et al., 1991; Claro et al., 2010). Hence, it is needed for extra skills and a wider knowledge of procedures and control from the different functional context tends to investigate efficiency and also accurate appropriate (O'Hara and Sillanpaa, 2009). Thus, the following hypothesis emerged for testing:

Hypothesis 3: The investigative method approach is expected to improve (a) financial repletion reporting, (b) risk reduction, and (c) comported performance achievement, and (d) ongoing firm survival, to lead or to allow the organization to focus more clearly on its core business.

3.2 Mediating of the Relationship between Dynamic Internal Audit Innovation and Ongoing Firm Survival

The consequence of dynamic internal audit innovation is organizational outcomes, which consist of financial repletion reporting, risk reduction, and comported performance achievement.

3.2.1 Financial Repletion Reporting

Financial repletion reporting refers to the result of good reporting, which can reflect financial position and operating results that present accurate, reliable, and timely information for decision making. Also, they can be analyzed to forecast future performance (Obaidat, 2007). Therefore, financial repletion reporting can enhance firm survival. Thus, the following hypothesis is proposed:

Hypothesis 4: Financial repletion reporting promotes change in ongoing firm survival.

3.2.2 Risk Reduction

Risk reduction is defined as the ability of an organization to evaluate the risks that cover indentifying, reducing, and managing the risks to an acceptable level for the purposes and goals of the organization. The role of dynamic internal audit innovation has been important in monitoring the internal controls within the entity, which is a key aspect of fraud prevention and detection (Gramling et al., 2004). Similarly, Karagiorgos, Dogala, and Alexandra (2010) found that the dynamic internal audit affected efficient risk management and consequently, business success and the quality of the work. Thus, the following hypothesis is proposed:

Hypothesis 5: Risk reduction promotes change in ongoing firm survival.

3.2.3 Comported Performance Achievement

Comported performance achievement is defined as the ability of the organization to operate more quickly, respond to customers' needs, improve quality, and use the resources available to bring added value to achieve objectives and goals. According to the Committee of Sponsoring Organizations of the Treadway Conversion (COSO), the comported performance of the organization has the effect

of reducing operating costs and enhancing customer satisfaction and the financial success of the firm (COSO, 2004). Thus, the following hypothesis is proposed:

Hypothesis 6: Comported performance achievement promotes change in ongoing firm survival.

3.3 Antecedence of Dynamic Internal Audit Innovation

3.3.1 Information Technology Change

Information technology change refers to the rapid change in technology that impacts an organization's data-processing system (Abu-Musa, 2008). The information technologies have rapid change that affected organization processes or work practices including increase the accuracy, speed of transaction processing, and real-time in decision-making. (Beasley and Jenkins, 2003; Abu-Musa, 2008). Thus, the following hypothesis is proposed:

Hypothesis 7: Change in information technology may be related to an increased use of dynamic internal audit innovation.

3.3.2 Regulation Enforcement

Regulation enforcement refers to firms obeying and complying with regulations of firms listed in the stock exchange, the regulatory requirements of SOX (2002). The regulator can offer both professional standards and mechanisms to enforce compliance with those standards, particularly regulations about the efficiency of internal control quality in the organization and the reliability of internal auditing. Thus, the following hypothesis is proposed:

Hypothesis 8: Change in regulation enforcement, may be related to an increased use of the dynamic internal audit innovation.

3.3.3 Volatile Business

Volatile business refers a set of relevant factor conditions that are uncontrollable in nature and that affect the functioning of the organization, such as social, legal, economic, and political conditions. In general terms, a volatile business environment covers complex and changing technology, and economic

and governmental regulations. Thus, the following hypothesis is proposed:

Hypothesis 9: Change in volatile business, may be related to an increased use of the dynamic internal audit innovation.

3.4 Moderating Effects of the Relationship between Dynamic Internal Audit Innovation and It's Consequence

3.4.1 Intra-Cooperation Communication Focus

Intra-cooperation communication focus is defined as the relationship on collective activity between function or department to achieve a collective benefit. The achievement of the intra-cooperation communication focus in the organization will be built in the process of creating information sharing, joint problem solving, willingness to adapt to unanticipated changes, that have focused on firm performance and improved competitiveness. Thus, the following hypothesis is proposed:

Hypothesis 10: The higher the intra-cooperation communication focus is, the more likely that firms will moderate the relationship among dynamic internal audit innovation and financial repletion reporting.

Hypothesis 11: The higher the intra-cooperation communication focus is, the more likely that firms will moderate the relationship among dynamic internal audit innovation and risk reduction.

Hypothesis 12: The higher the intra-cooperation communication focus is, the more likely that firms will moderate the relationship among dynamic internal audit innovation and comported performance achievement.

3.4.2 Environmental Turbulence

The shift in information technology advancement and regulation has enabled the intensive audit environment, which requires the internal audit to provide more effective assurance service and expects a new role of the dynamic internal audit innovation as independent business consultants (Brody and Lowe, 2000). The new role establishes complex environmental factors dominated by economic, political, cultural, and social pressures. In this study, environmental

turbulence refers to the uncertainty of external factors that influence internal audit activities, including a change in technology, and legal and professional standards. Thus, the hypothesis is proposed as follows:

Hypothesis 13: The higher the environmental turbulence is, themore likely that firms will moderate the relationships among financial repletion reporting and ongoing firm survival.

Hypothesis 14: The higher the environmental turbulence is, themore likely that firms will moderate the relationships among risk reduction and ongoing firm survival.

Hypothesis 15: The higher the environmental turbulence is, the more likely that firms will moderate the relationships among comported performance achievement and ongoing firm survival.

4. Research Methods

4.1 Sample and Data Collection Procedure

The population and sample of this study are all Thai-listed firms in Thailand. The internal audit function is necessary as an assistant of the audit committee to perform its responsibilities effectively. The key informant is the internal audit director or manager auditor of each firm. They are chosen because they have different practiced planning strategies and have gained various innovations in their performances. The database of The Stock Exchange of Thailand was drawn upon from its website: http://www.set.or.th. Based on the database, there were in all 609 listed firms as of January 31, 2013.

The questionnaire was constructed covering the contents according to each variable that was operational for empirical study. During a two-month period, 128 questionnaires were received from the original 609 mailed, all of which contained available data, and the response rate of this study was 21.02%. According to Aaker et al. (2001), the response rate for a mail survey, without an appropriate follow-up procedure, should be less than 20%. In addition, non-response bias was investigated using at-test, and responses from the first 30 and the last 30 questionnaires returned were tested and the results were not significant. Therefore,

this implied that the received questionnaires showed no non-response bias. Thus, the response rate of this study was considered acceptable.

4.2 Questionnaire Development and Variable Measurements

4.2.1 Questionnaire Development

The questionnaire as the instrument of this study was constructed according to each construct's definition and the related literature. Before using to collected data, the questionnaire was verified by three academic experts and adjusted where necessary to ensure that it was an effective instrument. Moreover, a pretest was conducted to increase the assertive measure. As a result, the instrument verifications ensured the validity and reliability of questionnaire in terms of measuring all of the constructs in the conceptual model of this study.

4.2.2 Variable Measurement

The questionnaires as the instrument of this study were constructed by each of constructs' definition, related literature reviews and theoretical frameworks. All of the variables were obtained from the survey and were measured with a five-point Likert Scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

4.2.2.1 Dependent Variables

Ongoing firm survival refers to the ability of firms to manage in an uncertain competitive environment during a period of time (Persson, 2004). Survival of a firm is described in terms of stability, sustainable economic growth, and long-term business (Schultz, 2010).

4.2.2.2 Independent Variables

The main construct of this study is the dynamic internal audit innovation that encompasses three dimensions; namely, internal audit technology adaptation, technical audit integration, and the investigative method approach. All of dimensions are new scale and they were measured via four items.

The dynamic internal audit innovation reflects the firm's philosophy of how to conduct internal audit function. As a result, the instrument through a deeply rooted set of values and beliefs that guide the firm's attempt to achieve superior performance.

First, internal audit technology adaptation refers to choosing a technology tool that helps the internal audit functions achieve their objective, including improving the effectiveness of risk management, internal control, and maximizing value for their firms. Secondly, technical audit integration refers to the linking of all audit procedures into abaudit system in order to achieve the audit goals, which helps achieve a holistic system view in accurate result of audit process. Thirdly, investigative method approach refers to the process of seeking the best approach methods that matching to commitment task. Hence, it is needed for important process from the different functional context that tends to investigate outcome efficiency.

4.2.2.3 The *antecedent* of dynamic internal audit innovation encompasses three dimensions; namely, information technology change, regulation enforcement, and volatile business. All of the dimensions are new scale and they were measured via four items. First, information technology change refers to the rapid change in technology that impacts an organization's data processing system. Secondly, regulation enforcement refers to firms obeying and complying with regulations of firms listed in the stock exchange, the regulatory requirements of SOX (2002). Thirdly, volatile business refers to a set of relevant factor conditions that are uncontrollable in nature and affect the functioning of the organization.

4.2.2.4 Mediating Variables were measured by a four-item scale developed as a new scale with some modifications from prior research related to the perceptions of achieving their goals. First, financial repletion reporting refers to the importance of financial report is the information that presented in the report. The results of good reporting, which can reflect on the financial position and operating results that are accurate and reliable, and can be analyzed to forecast future performance. Secondly, risk reduction refers to the firm's perception of risk protection, reduction, and management. Thirdly, comported performance achievement

refers to the enhancement of best practices as a set of working methods officially accepted as being the best to use in a particular business.

4.2.2.5 Moderating Variable

Intra-cooperation communication focus was measured using a four-item scale developed as a new scale with some modifications from prior research, related to the firm's perception of communication with colleagues to create shared understanding.

Environmental turbulence refers to the frequently changing and the uncertainly pattern of organization's environment change. Four items were developed from prior literature. The items ask for the perception of the instability of economics, technology, regulations, and professional standards.

4.2.6 Control Variable

Two control variables were included to account for firm characteristics that may influence the hypothesized relationships, which are firm size and firm age.

Firm size determines the extent and frequency of internal audit activities (Carey et al., 2006). Especially, a large and complex organization has difficulty managing its systems and controls (Fisher, 1995). In this research, firm size was chosen as a control variable, which is defined as the total assets of the invested firm. Therefore, firm size was measured by the total assets of the firms.

Firm age is the period of time the firm has been in business (Morrill et al., 2012). The empirical evidence suggests that there is a clear relationship between firm age and growth (Capelleras and Rabetino, 2008). In this study firm age was measured by the number of years a firm had been in operation.

4.3 Reliability and Validity

This study tested the validity of instruments to confirm that the set of measures accurately represented the concept of this study. Confirmatory factor analysis (CFA) was used to examine the construct validity by investigating the underlying relationships of a large number of items and to determine whether they could be reduced to a smaller set of factors. In this study, all factor loadings are greater

than the 0.40 cut-off score and are statistically significant (Nunnally and Berstein, 1994). Moreover, each of the items in the questionnaire was subjectively assessed by a chief internal auditor and two related academic experts to ensure content validity. Reliability of collected data was tested by Cronbach's Alpha, was used to examine among items in order to measure the reliability of the data, which were accept at a minimum greater than 0.70 (Hair et al., 2006). The results of factor loadings and Cronbach's Alpha for this study are shown in Table 1. Table 1 shows that all of the variables have factor loading scores between 0.625-0.947, indicating that there was construct validity. Moreover, the figures for Cronbach's Alpha for all of the variables are shown between 0.724-0.949. Therefore, the reliability of all of the variables was accepted.

Table 1: Results of Factor Loading and Alpha Coefficient of Constructs

Variables	Factor Loadings	Cronbach's Alpha
Ongoing Firm Survival (OFS)	0.836-0.876	0.883
Internal Audit Technology Adaptation (IATA)	0.773-0.844	0.853
Technical Audit Integration (TAI)	0.886-0.947	0.910
Investigative Method Approach (IMA)	0.791-0.895	0.879
Financial Repletion Reporting (FRR)	0.912-0.946	0.949
Risk Reduction (RR)	0.848-0.865	0.908
Comported Performance Achievement (CPA)	0.668-0.755	0.778
Information Technology Change (ITC)	0.649-0.839	0.810
Regulation Enforcement (RE)	0.848-0.923	0.902
Volatile Business (VB)	0.625-0.800	0.789
Intra-Cooperation Communication Focus (ICCF)	0.720-0.816	0.935
Environmental Turbulence (ET)	0.657-0.711	0.724

4.4 Statistical Techniques

Regression analysis was employed to analyze the relationship between the dependent and independent variables. The Ordinary Least Squares (OLS) regression

analysis was used to test the hypotheses are emerged for testing. From the relation models and hypotheses, the following 7 equation models were formulated:

$$\text{Equation 1: FRR} = \alpha_1 + \beta_1 IATA + \beta_2 TAI + \beta_3 IMA + \beta_4 ICCF + \beta_5 (IATA*ICCF) + \beta_6 (TAI*ICCF) + \beta_7 (IMA*ICCF) + \beta_8 SIZE + \beta_9 AGE + \varepsilon_1$$

$$\text{Equation 2: RR} = \alpha_2 + \beta_{10} IATA + \beta_{11} TAI + \beta_{12} IMA + \beta_{13} ICCF + \beta_{14} (IATA*ICCF) + \beta_{15} (TAI*ICCF) + \beta_{16} (IMA*ICCF) + \beta_{17} SIZE + \beta_{18} AGE + \varepsilon_2$$

$$\text{Equation 3: CPA} = \alpha_3 + \beta_{19} IATA + \beta_{20} TAI + \beta_{21} IMA + \beta_{22} ICCF + \beta_{23} (IATA*ICCF) + \beta_{24} (TAI*ICCF) + \beta_{25} (IMA*ICCF) + \beta_{26} SIZE + \beta_{27} AGE + \varepsilon_3$$

$$\text{Equation 4: OFS} = \alpha_4 + \beta_{28} FRR + \beta_{29} RR + \beta_{30} CPA + \beta_{31} SIZE + \beta_{32} AGE + \varepsilon_4$$

$$\text{Equation 5: IATA} = \alpha_5 + \beta_{33} ITC + \beta_{34} RE + \beta_{35} VB + \beta_{36} SIZE + \beta_{37} AGE + \varepsilon_5$$

$$\text{Equation 6: TAI} = \alpha_6 + \beta_{38} ITC + \beta_{39} RE + \beta_{40} VB + \beta_{41} SIZE + \beta_{42} AGE + \varepsilon_6$$

$$\text{Equation 7: IMA} = \alpha_7 + \beta_{43} ITC + \beta_{44} RE + \beta_{45} VB + \beta_{46} SIZE + \beta_{47} AGE + \varepsilon_7$$

$$\text{Equation 8: OFS} = \alpha_8 + \beta_{48} FRR + \beta_{49} RR + \beta_{50} CPA + \beta_{51} ET + \beta_{52} (FRR*ET) + B_{53} (RR*ET) + \beta_{54} (CPA*ET) + \beta_{55} SIZE + \beta_{56} AGE + \varepsilon_8$$

$$\text{Equation 9: OFS} = \alpha_9 + \beta_{57} IATA + \beta_{58} TAI + \beta_{59} IMA + \beta_{60} SIZE + \beta_{61} AGE + \varepsilon_9$$

5. Results and Discussion

The descriptive statistics and correlation matrix for all of the variables are shown in Table 2. The correlation coefficients of the independent variables ranged from 0.238-0.891. With regard to potential problems relating to multicollinearity, variance inflation factors (VIFs) were used to test the intercorrelations among the independent variables. In this study, the VIFs was range from 2.589-4.315 (Table 3), well below the cut-off value of 10 (Hair et al., 2006), meaning that the independent variables did not correlate with each other. Consequently, there were no significant multicollinearity problems confronted in this study.

Table 2: Descriptive Statistics and Correlation Matrix

Variables	IATA	TAI	IMA	FRR	RR	CPA	OFS	ITC	RE	BV	ICCF	ET	FS	FA
Mean	4.42	4.32	4.14	4.10	4.26	4.05	4.29	4.22	4.11	4.17	3.54	3.10	3.05	3.22
S.D.	.498	.540	.581	.679	.586	.607	.528	.518	.489	.552	.543	.411	.438	.519
IATA	1.000													
TAI	.891**	1.000												
IMA	.722**	.815**	1.000											
FRR	.721**	.759**	.779**	1.000										
CRR	.740**	.761**	.785**	.715**	1.000									
CPA	.594**	.634**	.629**	.644**	.526**	1.000								
OFS	.768**	.809**	.785**	.754**	.785**	.811**	1.000							
ITC	.741**	.762**	.816**	.800**	.790**	.803**	.911**	1.000						
RE	.836**	.861**	.866**	.765**	.812**	.640**	.811**	.844**	1.000					
BV	.610**	.659**	.672**	.746**	.537**	.627**	.658**	.761**	.716**	1.000				
ICCF	.718**	.634**	.688**	.795**	.661**	.748**	.682**	.618**	.738**	.757**	1.000			
ET	.541**	.398**	.487**	.448**	.471**	.400**	.455**	.534**	.401**	.533**	.527*	1.000		
FA	.334*	.409*	.315*	.257*	.264*	.303*	.261*	.358*	.418*	.412*	.394*	.421*	1.000	
FS	.238*	.284*	.266*	.365*	.272*	.314*	.294*	.463*	.259*	.364*	.338*	.298*	.361*	1.00

** Correlation is significant at the .05 level (2 tailed)

* Correlation is significant at the .10 level (2 tailed)

Table 3 presents the results of the OLS regression analysis of the relationships between dynamic internal audit innovation and organizational outcomes (Hypotheses 1-3) that followed from equation models 1-3. The evidence indicates that dynamic internal audit innovation has a significant positive influence on organizational outcomes. Accordingly, the evidence indicates that internal audit technology adaptation had a significant positive effect on financial repletion reporting (Model 1: $b_1 = 0.217$, $p < 0.05$), risk reduction (Model 2: $b_{10} = 0.162$, $p < 0.05$), and comported performance achievement (Model 3: $b_{19} = 0.180$, $p < 0.05$). These findings support the idea of dynamic internal audit innovation, which will contribute significantly to the quality of the internal audit function. A possible explained reason is that internal audit technology adaptation have more proactive value to organizational outcomes, including to improved efficiency of the organization's operations. as well as the evaluation of risk reduction, comported performance achievement, and promote the reliability of financial reporting, which will lead to ongoing firm survival (IIA, 2007; Hermanson et al., 2008). Therefore,

hypotheses 1a-c were supported.

Regarding technical audit integration, the results demonstrated that it has a positive significant influence on financial repletion reporting (Model 1: $b_2 = 0.114$, $p < 0.05$), risk reduction (Model 2: $b_{11} = 0.234$, $p < 0.05$), and comported performance achievement (Model 3: $b_{20} = 0.223$, $p < 0.05$). As results emphasized on the technical audit integration are essential of process in organization to ensure that achieved higher audit quality performance, and controls in order to moderate the risks of organization. Therefore, hypotheses 2a-c were supported.

Accordingly, the results show that the investigative method approach had a positive significant effect on financial repletion reporting (Model 1: $b_3 = 0.192$, $p < 0.05$) and risk reduction (Model 2: $b_{12} = 0.117$, $p < 0.10$), but it was not significantly related to comported performance achievement (Model 3: $b_{21} = 0.026$, $p > 0.10$). The results imply then that the process of seeking the best method approach that match to the best operation design and can be used to maintain the overall quality of audit task. Therefore, hypotheses 3a-b were supported but Hypothesis 3c was not.

Table 3: OLS Regression Results of The Effect Dynamic Internal Audit Innovation on Organizational Outcomes and Ongoing Firm Survival[a]

Independent Variables	Dependent Variables			
	FRR (1)	RR (2)	CPA (3)	OFS (4, 8, 9)
IATA	.217**	.162**	.180**	.066
	(.096)	(.067)	(.070)	(0.141)
TAI	.114**	.234**	.223**	0.380**
	(.072)	(.076)	(.068)	(0.166)
IMA	.192**	.117*	.026	0.050
	(.065)	(.064)	(.066)	(0.129)
ICCF	.028*	.005	-.002	
	(.053)	(.057)	(.051)	
IATA x ICCF	0.117*	.005	-.035	
	(.063)	(.065)	(.062)	
TAI x ICCF	-.054	.096*	.081	
	(.067)	(.069)	(.071)	
IMA x ICCF	.037	.081	.014	
	(.076)	(.076)	(.056)	
FRR				.202**
				(.081)
RR				.114**
				(.064)
CPA				.260**
				(.069)
ET				0.224**
				(0.081)
FRR x ET				.061
				(.091)
RR x ET				.078
				(.109)
CPA x ET				-0.113
				(.117)
Firm Size	.120	.124	-.064	-.078
	(.080)	(.081)	(.093)	(.091)
Firm Age	.006	.037	.150	.033
	(.066)	(.094)	(.048)	(.074)
Adjusted R^2	.425	.433	.387	.354
Maximum VIF	4.315	4.315	4.315	2.589

** p < 0.05, * p < 0.10, [a] Beta coefficients with standard error in parentheses

Additionally, Table 3 also shows the impact between organizational outcomes and ongoing firm survival (hypotheses 4-6). The results in Model 4 indicated that financial repletion reporting (b_{28} = 0.202, $p < 0.05$), risk reduction (b_{29} = 0.114, $p < 0.05$), and comported performance achievement (b_{30} = 0.260, $p < 0.05$) had significant positive effects on ongoing firm survival. The results indicate that firms with intended comported performance gain public perception at a higher level of ongoing firm survival. Additionally, financial repletion reporting was found to be related by giving information for firms' manager to make efficient and effective decision to allocate resource of the firms and help ongoing firm survival (Barney and Hansen, 2006). Thus, hypotheses 4-6 were supported.

Surprisingly, technical audit integration had a significantly positive effect on ongoing firm survival (b_{58} = 0.380, $p < 0.05$). This result was consistent with the research of Havelka and Merhout (2013), who stated that operational skill with integrated audit technique affects operations and also improves the performance of organizations in terms of achieving the organization's goals and objectives. On the other hand, internal audit technology adaptation (b_{57} = 0.066, $p > 0.10$) and the investigative method approach (b_{59} = 0.050, $p > 0.10$) had a negative insignificant effect on ongoing firm survival. Therefore, Hypothesis H2d was supported but hypotheses H1d a and H3d were not supported.

Moreover, in Table 3, the influence of intra-cooperation communication focus as a moderating effects on the relationship was tested between dynamic internal audit innovation and organizational outcomes (hypotheses 10-12) following from equation models 1-3. The results of the OLS regression analysis provided evidence that the coefficient of intra-cooperation communication focus was positively significantly associated with financial repletion reporting (Model 1: b_4 = 0.028, $p < 0.10$). More interestingly in the case of the interaction between internal audit technology adaptation and intra-cooperation communication focus on financial repletion reporting was significant (Model 1: b_5 = 0.117, $p < 0.10$). Furthermore, technical audit integration and intra-cooperation communication focus with risk reduction were significant (Model 2: b_{15} = 0.096, $p < 0.10$). As a result of OLS regression analysis provide that the intra-cooperation communication in the organization will create information sharing, and joint problem solving,

that are the key determinants of successful cooperative behavior (Christ et al., 2008). Therefore, hypotheses 10a and 11 b were supported and hypotheses 10b-c, 11a, 11c and 12a-c were not supported.

Interestingly, Table 3 shows that environmental turbulence did not moderate the relationships between organizational outcomes and ongoing firm survival. (b_{52} = 0.061, $p > 0.10$; b_{53} = 0.078, $p > 0.10$; b_{54} = -0.113, $p > 0.10$). Therefore, hypotheses 13-15 were not supported. The results of this study might be due to the context being studied, as it was different from those that of previous research, which may have depended on conditions in the environments.

Table 4 presents the results of the OLS regression analysis the affect of three antecedents of dynamic internal audit innovation that consists of information technology change, regulation enforcements, and volatile business on dynamic internal audit innovation (Hypotheses 7-9). The results from equation 5 provide evidence that information technology change had positive significant effect on dynamic internal audit innovation; namely internal audit technology adaptation (b_{33} = 0.178, $p < 0.05$), technical audit integration (b_{38} = 0.214, $p < 0.05$), and the investigative method approach (b_{43} = 0.126, $p < 0.10$). The results imply that information technology change impacts an organization's data processing system and continuous quality improvement, which leads to competitive advantage (Malmi and Brown. 2008). Therefore, hypotheses 7a-c were supported.

Moreover, regulation enforcement was predicted to be positively related to dynamic internal audit innovation but the coefficient of regulation enforcement had no significant effect on any of the dimensions of dynamic internal audit innovation (Model 5: b_{34} = 0.031, $p > 0.10$, Model 6: b_{39} = 0.016, $p > 0.10$; Model 7: b_{44} = 0.027, $p > 0.10$). Therefore, hypotheses 8a-c are not supported.

In Table 3, furthermore, firm size and firm age are the control variables. The results show that they did not have significant effects on the organizational outcomes in this study.

Table 4: Ols Regression Results for Antecedents on Dynamic Internal Audit Innovation[a]

Independent Variables	(5) IATA	(6) TAI	(7) IMA
ITC	.178**	.214**	.126*
	(.076)	(.072)	(.069)
RE	.031	.016	.027
	(.064)	(.068)	(.070)
VB	.207*	.186*	.099*
	(.077)	(.075)	(.073)
Firm Size (Size)	-.021	.001	.014
	(.068)	(.069)	(.071)
Firm Age (Age)	.211*	.023	-.012
	(.069)	(.056)	(.065)
Adjusted R^2	.346	.252	.363

* $p < 0.1$, **$p < 0.05$, [a] Beta coefficients with standard error in parentheses

Furthermore, the results show that relationship between volatile business on all dimensions of dynamic internal audit innovation. The results in equation models 5, 6 and 7 show that volatile business positively and significantly influenced internal audit technology adaptation ($b_{35} = 0.207$, $p < 0.10$), technical audit integration ($b_{40} = 0.186$, $p < 0.10$), and the investigative method approach ($b_{45} = 0.099$, $p < 0.10$).

Volatile business factor becomes important for planning audit innovation not only for internal audit functions but also other functions because it leads to organization confront to high risk. Also, the effect of volatile business leads to firms hiring agility people that are flexible and can adapt to environment turbulence managing especially legal, economical and political of intern audit function. Therefore, hypotheses 9a-c were supported.

Surprisingly, in Table 4, firm age was the control variable. The results show that firm age had significant positive effects on internal audit technology adaptation, which implies that along period of operations results in better dynamic internal audit innovation than does a short period of operation in business.

6. Implications of Research

This study will help internal audit managers and internal audit directors understand, identify, justify, and pay attention to how the planning skill leads to potential sources of sustainable competitive advantage and ongoing firm survival. Moreover, the Securities and Exchange Commission (SEC) in order to be awareness that planning and support the ways that they get more benefit both for firms and stakeholders. Additionally, this study is the key evidence for the Institute of Internal Auditors (IIA) of Thailand also provides more participation, support, and specifically, proficiency in auditors internal audit tasks. Finally, the dynamic internal audit innovation construct has the potential to be developed to make a significant contribution to further knowledge leading to gain greater the innovation of auditing management.

7. Limitations and Suggestions for Future Research

According to the results of this research, the moderating effects of intra-cooperation communication focus and environmental turbulence are partially statistics significant. between dynamic internal audit innovation, organizational outcomes and ongoing firm survival. Future research should consider the study of other potential moderating variables. Future research may use other techniques such as structural, in-depth interviews, experiments, case studies. Finally, further research should be directed at identifying and refining the measures for different forms or degrees of dynamic internal audit innovation. For example, there may be different emphases on the elements required for radical versus incremental innovation. This would provide a fuller picture of innovation within organizations.

8. Conclusion

This study proposed the construct of dynamic internal audit innovation to describe the ability of internal auditors to achieve effective performance. The notion of dynamic innovation is useful when applied to innovation as it is the capability to innovate that creates the potential for firm-wide behaviors leading to systematic innovation activities within the firm.

The objective of this study as to examine the relationship between dynamic internal audit innovation and ongoing firm survival. The overall results show a significant positive relationship between dynamic internal audit innovation and organizational outcomes. Moreover, the findings also indicate that organizational outcomes certainly mediate the relationship between dynamic internal audit innovation and ongoing firm survival. Surprisingly, the moderating effect of intra-cooperation communication focus on the relationship between dynamic internal audit innovation and organizational outcomes are partially statistics significant. Additionally, the antecedent variables—information technology change and volatile business had a positive direct effect on dynamic internal audit innovation. It is proposed that audit firms consciously and explicitly develop and invest in these aspects of dynamic innovation, individually and collectively; they will then have a higher likelihood of achieving sustainable innovation outcomes as the engine of their business performance. Among the study's findings, it was found that: (1) auditors become internal change agents as they use innovative techniques to spread quality improvement throughout their organizations; (2) internal auditors support business units, even customers, by helping them apply innovative practices to operations; and (3) new self-auditing tools improve audit coverage, increase quality, reduce costs, and reduce cycle time.

This study has highlighted the need for further rigorous investigation of dynamic innovation and its antecedent variables. Furthermore, internal auditors will profoundly understand, and utilize dynamic internal audit innovation to enhance audit value increase, and financial repletion reporting which can lead to ongoing firm survival. This study illustrated the importance of adopting a holistic company-wide approach to the internal audit management of innovation, incorporating both the mainstream and new stream.

The concept of dynamic internal audit innovation identified in this study can be defined, validated, and tested using other research methods, including case studies and the application of scientific methods of investigation into this concept. Finally, this research suggests that auditors should develop and concentrate on how to increase dynamic internal audit innovation to be survivable in audit market.

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