# Effects of a Governing Body on Internal Audit Quality: Empirical Evidence from Thailand

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# Abstract

This study aims to examine the direct and indirect effects of a governing body on internal audit quality, using internal audit support as a mediator. Data were collected from both primary and secondary sources. The internal audit quality and internal audit support data were collected from questionnaires sent to the Chief Audit Executives of Thailand's listed companies. The response rate was 17.7%, with 126 companies responding. Afterwards, the matching secondary data about the governing body were collected from the annual registration statement.

Using the covariance-based structural equation model (CB-SEM) method, the empirical analysis concludes that while the governing body has no direct effect, it has an indirect effect on internal audit quality through internal audit support. Therefore, to improve the quality of internal audit, the governing body - board of directors and audit committee - should provide adequate resources and competence to internal audit, as it is an integral part of effective corporate governance. This study contributes to the literature on determinants of internal audit quality in a developing country, Thailand. It also contributes practically by assisting regulators in determining the qualifications and competence of internal audit personnel. Last, it raises the board and audit committee awareness of the importance of allocating adequate resources to internal audit, especially in a volatile, uncertain, complex, and ambiguous (VUCA) world.

**Keywords:** Governing Body; Internal Audit Support; Internal Audit Quality; Corporate Governance

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# Introduction

Businesses are now confronted with volatility, uncertainty, complexity, and ambiguity (VUCA), which increase business risks and hinder their ability to achieve their objectives (World Economic Forum, 2020). Many countries react to manage VUCA by establishing mechanisms to govern businesses' operations. The Institute of Internal Auditors (IIA) suggests that, due to VUCA, internal auditors have been urged to adopt advanced approaches to provide assurance and perform risk-based strategies to address economic and geopolitical changes while maintaining their quality (Institute of Internal Auditors, 2022).

Internal audit has increased in importance and is regarded as a mechanism for improving organizational efficiency (Garven & Scarlata, 2021; KPMG, 2016). The roles of internal audits include assisting the governing body in assessing the effectiveness of risk management, internal control, and corporate governance (Abbott et al., 2016; Lenz et al., 2014), as well as the reliability of financial reporting (Abbott et al., 2016) and fraud prevention (Ege, 2015). It also adds value and improves organizational operations (Institute of Internal Auditors, 2020). However, research shows that a governing body might not grant sufficient support to internal audits, as evidenced by the allocation of insufficient budget and competent personnel (Ismajli et al., 2017). As a result, the research found that the quality of internal audits did not meet stakeholders' expectations (Eulerich & Lenz, 2020).

According to agency theory, the principal and the agent face conflicts of interest (Jensen & Meckling, 1976), so an internal audit may serve as a mechanism to oversee these conflicts. In addition, upper echelon theory (Hambrick & Mason, 1984) posits that characteristics of the governing body could affect organizational performance decisions and support internal audit functions. The three lines model (Institute of Internal Auditors, 2020) also suggested roles for the governing body (the first line) to support the independence of an internal audit (the third line), as well as allocating suitable and adequate resources to an internal audit to achieve its objectives.

However, prior research did not reach a consensus regarding the relationships between the governing body (GB), internal audit support (IAS), and internal audit quality (IAQ). Some research found a direct positive effect (Eulerich et al., 2017), while some research found a negative effect (Barua et al., 2010) or no relationship (Ghafran & Sullivan, 2017) among them. Inconsistent results may emerge from the absence of a mediator which impacts the relationship (McWilliams & Siegel, 2001). In addition, all the aforementioned variables have not yet been incorporated into a single study. Therefore, this study aims to incorporate them into one path model and examine whether GB has a direct relationship with IAQ as well as whether GB has an indirect relationship with IAQ through a mediator, IAS.

Governing systems are different from country to country, and their impacts vary depending on the context (UKEssays, 2018). In Thailand, the Securities and Exchange Commission (SEC) recommended that the board of directors and the audit committee oversee listed companies to ensure proper internal audit functions (Securities and Exchange Commission, 2017). Thailand, as a member of IIA, attempts to increase internal audit quality by adopting international internal audit standards and frameworks. However, the adoption in Thailand is just in terms of guidelines or principles, e.g., SEC's good corporate governance principles (Securities and Exchange Commission, 2017). There has also been a limited amount of empirical research on internal audits in a Thai context.

Furthermore, the availability of internal audit data and collecting sufficient data for an empirical study can be challenging. Compared to publicly released financial performance data,

internal audit performance reports are mainly used internally. Observably, most previous studies had primary data from surveys or interviews. Therefore, this study fills in these gaps in the internal audit literature and advances the body of knowledge by conducting empirical research based on both primary and secondary data collected from listed companies in Thailand. To the best of our knowledge, this study is one of the few that gathered both primary and secondary data on Thai listed companies. First, primary data on IAQ and IAS were obtained through a survey. Subsequently, secondary data regarding GB was collected from annual registration statements (Form 56-1) [1].

The results found that GB has no direct effect on IAQ. However, the result found positive total effects on IAQ, which could be caused by the existence of mediators. According to the findings of the additional investigation, GB has an indirect effect on IAQ via IAS. This study contributes theoretically to the literature on corporate governance and internal audit in terms of supporting agency theory, upper echelon theory, and the three lines model. It also provides managerial support to regulators and practitioners in terms of practical and policy implications.

The remainder of the paper is structured as follows: section two elaborates on the prior literature and develops the hypotheses; section three describes the research methods; section four presents the findings; and in section five, the implications and limitations of the study are discussed.

# Literature Review

## Governing Body and Internal Audit Quality

Internal audit has become increasingly important, especially after accounting scandals resulting from deficiencies in corporate governance and risk management (Committee of Sponsoring Organizations of the Treadway Commission, 2015). As a result, many countries regulate listed companies to have an independent body to ensure they have good corporate governance and reliable financial statements, thereby elevating the importance of internal audit (Roussy, 2015).

Thailand's good corporate governance principles (Securities and Exchange Commission, 2017), commonly known as the CG Code 2017, mandated that listed companies in Thailand have a GB in charge of overseeing the risk management system and internal control. The audit committee, appointed by the board of directors, evaluates the effectiveness of risk management and internal control via the internal audit functions. The audit committee's role is to ensure that internal audit is independent and competent.

Theoretically, according to the three lines model, GB plays an important role in establishing, developing, and overseeing the internal audit functions of independence, objectivity, and competence in order to achieve its objectives and add value (Institute of Internal Auditors, 2020). In addition, according to the CG Code 2017, both the board of directors and audit committee play an important role in enhancing IAQ in terms of assigning competent internal auditors to perform risk and internal control assessments (Securities and Exchange Commission, 2017).

[1] The Securities and Exchange Commission of Thailand combines the annual registration statement (Form 56-1) and annual report (Form 56-2), and formally calls them "Form 56-1 One Report." It applied to the accounting period ending December 31, 2021.

Prior research found that audit committee directly affects the IAQ (Eulerich et al., 2017), where the quality was measured by competence, planning, reporting, and quality assurance (Jiang, 2015). Research also demonstrated the direct effect of audit committee characteristics on IAQ in Malaysia (Abdullah et al., 2018) and in the United States (Abbott et al., 2010). In Thailand, research found that the number of audit committee and corporate governance scores have a direct impact on the IAQ (Mitrapanont & Laohavichien, 2019). Also, IAQ is related to the audit committee's independence, expertise, and board meeting frequency (Alzeban, 2015; Gebrayel et al., 2018; Ghafran & Sullivan, 2017).

In contrast, previous studies found that audit committee expertise and tenure negatively affected organizational investment in internal audits (Barua et al., 2010). No relationship was even found between audit committee independence and IAQ (Ghafran & Sullivan, 2017; Regoliosi & Eri, 2014). Likewise, no relationship was found between board size, independence, and frequency of board meetings and IAQ (Jiang, 2015; Ganesan et al., 2017).

According to agency theory (Jensen & Meckling, 1976), GB and internal audits are recognized as regulatory mechanisms, as their responsibilities are to oversee, monitor, and audit the management in order to enhance shareholder value. In addition to being supported by the three lines model, GB plays an important role in establishing and supervising the internal audit function to perform quality services (Institute of Internal Auditors, 2020).

Theoretically, it is hypothesized that:

*H1: The governing body (GB) has a positive direct effect on internal audit quality (IAQ).*

**Governing Body, Internal Audit Support, and Internal Audit Quality**

Prior research found that better quality of internal audit assists in evaluating the efficiency of risk management and internal control, preventing earnings management, and enhancing the quality of financial reporting in Cambodia (Gebrayel et al., 2018). However, a study funded by the IIA found that the quality of internal audit in several countries did not meet the expectations of stakeholders (Eulerich & Lenz, 2020). For instance, internal audit in Kosovo continues to struggle to meet its objectives due to a lack of skilled personnel, inadequate funding, and a lack of support from board of directors (Ismajli et al., 2017). The study then proposes that board of directors should be aware of the importance of internal audit and constantly review management actions in response to its findings and recommendations.

The relationship between GB and IAQ can be influenced by a mechanism; however, only a limited amount of empirical studies have investigated this mechanism. The pillars of internal audit consist of resources, competence, and adequate budget support (Institute of Internal Auditors, 2017). According to research, IAS, which refers to competence, duration of work, recommendations, and budget, positively correlates with IAQ in Malaysia (Mohamed, 2011; Zain et al., 2006). Research also found that if an organization lacks support from GB, the effectiveness of an internal audit will decrease (Onumah & Krah, 2012). In addition, factors contributing to IAQ include risk-based audits, the board and management's support, and the skills and experience of internal audit (Sakhakorn et al., 2014).

The International Professional Practices Framework (IPPF) posits that in the practice of IAQ, the Chief Audit Executives (CAEs) must develop a risk-based audit plan and communicate it and the required resources to the GB for review and approval (Institute of Internal Auditors, 2017). In addition, an internal auditor must have the necessary knowledge, capabilities, and skills to perform their tasks, as well as the experience and competence to achieve their objectives. The GB must also encourage the internal auditor to improve their

knowledge annually, motivate them to earn a professional certification, and provide an internal and external assessment of the quality.

Prior research found that the greater the number of the audit committee, the greater the level of investment allocated to an internal audit (Barua et al., 2010). In addition, greater support from board of directors leads to higher quality (Dellai & Omri, 2016; Strakova et al., 2021) and efficiency (Onumah & Krah, 2012) in internal audits. Thus, research demonstrates a positive relationship between GB support, CAE tenure, and the implementation of internal audit recommendations (Alzeban & Sawan, 2015).

To fully understand the mechanism, it necessitates a study to test the mediating effect. Prior research in internal audit has investigated the role of mediators in relationships, but not yet incorporated GB, IAS, and IAQ into one study. For example, research studied whether an audit committee mediates the relationship between an internal audit and firm performance (Alzeban, 2015). In addition, research examined the relationship between GB and enterprise risk management, through internal audit resources and internal audit competence (Mitrapanont, 2022). To fill in gaps in the literature, this study, therefore, labeled IAS as a mediator in the relationship between GB and IAQ.

According to upper echelon theory (Hambrick & Mason, 1984), the characteristics of high-position personnel are related to decisions that affect the performance of an organization. In addition, agency theory (Jensen & Meckling, 1976) describes an internal audit as a mechanism to assist the GB in corporate governance to add value for the stakeholders. The three lines model (Institute of Internal Auditors, 2020) also suggests an interaction between the GB and internal audit functions, as well as the responsibility for ensuring independence and IAQ.

Theoretically, it is hypothesized the mediating relationship that:

*H2 : The governing body (GB) has a positive indirect effect on internal audit quality (IAQ) through internal audit support (IAS).*

*H2a: The governing body (GB) has a positive direct effect on internal audit support (IAS).*

*H2b: Internal audit support (IAS) has a positive direct effect on internal audit quality (IAQ).*

All hypotheses are shown in the research framework (Figure 1).

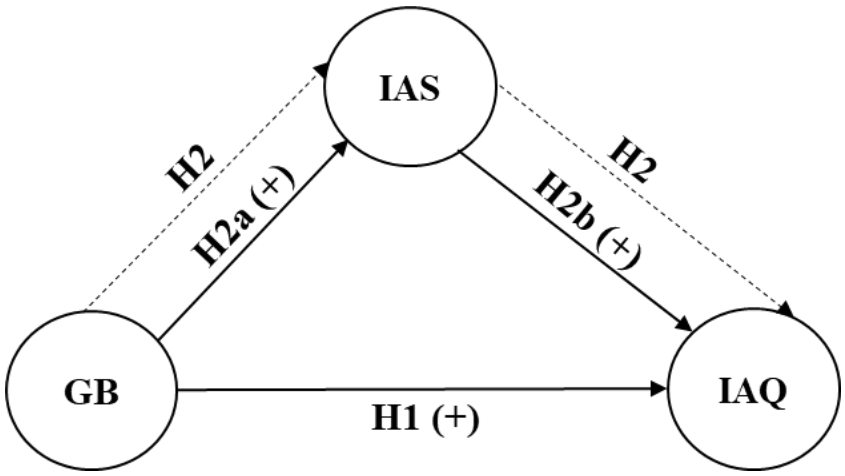


**Figure 1: Research Framework**

# Research Methodology

This quantitative study[2] aims to study the direct and indirect relationships between GB and IAQ. Confirmatory factor analysis (CFA) and covariance-based structural equation model (CB-SEM) were used for data analysis and hypothesis testing.

The research sample consists of companies listed on the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI). Due to differences in regulatory laws, 58 real estate funds and investment trusts were excluded. In addition, 22 companies in the process of rehabilitation or that may be delisted due to unstable operating conditions were also excluded. A questionnaire was sent to 710 companies in eight industry groups.

A survey methodology was used to obtain inside companies' internal audit characteristics and gain information about the quality and support levels. The questionnaire was pre-tested and assessed for its content validity by 16 qualified experts from SET, SEC, senior internal audit consultants, and researchers with experience in questionnaires. The item-objective congruence (IOC) was calculated, and the values were between 0.85 and 1.00, which were greater than 0.80, meaning that the questions are consistent with the measurement objective (Rovinelli & Hambleton, 1977).

A postal questionnaire (shown in Appendix) sent to the CAEs of 710 listed companies was used to collect primary data on IAS and IAQ. Afterwards, secondary data about GB were manually collected from the annual registration statement (Form 56-1) to match the returned questionnaires.

### Variables Measurement

The variables in this study are latent variables, which cannot be measured directly but rather from various components or observed variables (Byrne, 2013). Indicators used in this study were gathered from prior literature and selected the proxies that represented the variables theoretically and statistically.

**1) The Governing Body (GB)** refers to both the *board committee (BC)* and the *audit committee (AC)*. They were measured using various indicator variables gathered from prior literature (Table 1). All indicators were manually collected from annual registration statements (Form 56-1).

**2) Internal Audit Support (IAS)** consists of two components: *internal audit resources (IAR)* and *internal audit competence (IAC)*. Questionnaires were used to collect data both objectively and subjectively. The *IAR* is measured by i) the number of internal audit personnel (Chang et al., 2019; Mat Zain et al., 2015), ii) the CAE's assessment of the sufficiency level of annual budgets allocated to the internal audit function, using a 5-point Likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree) (Johl et al., 2013), and iii) CAE tenure (Alzeban, 2015; Alzeban & Sawan, 2015). The *IAC* is measured by i) CAE's number of years of experience in the internal audit field (Jiang et al., 2015; Mat Zain et al., 2015), ii) the number of professional certifications, i.e., CRMA, CIA, CISA, CPA, CMA,

[2] This study was considered for exemption research project from the Human Research Ethics Committee.

CRISC, CISA, IACP, and CPIAT (Alzeban, 2018; Jiang, 2015), iii) CAE's number of training hours (Alzeban, 2018; Jiang, 2015), and iv) internal audit personnel's amount of training hours (Jiang, 2015). Then, each component's score was proportioned by the total possible score of each component to calculate the values between 0 and 1.

**3) Internal Audit Quality (IAQ)** consists of six observed variables: i) preparation of a risk-based audit plan *(RBP)* (Institute of Internal Auditors, 2017; Jiang, 2015; Trotman & Duncan, 2018), ii) application of the international internal control framework *(ICF)* (Institute of Internal Auditors, 2017; Jiang, 2015), iii) reporting of internal audit findings and priority assessments (*REP*) (Institute of Internal Auditors, 2017; Jiang, 2015; Trotman & Duncan, 2018), iv) root cause analysis (*RCA*) (Institute of Internal Auditors, 2017; Jiang, 2015; Trotman & Duncan, 2018), v) follow-up on internal audit reports (FOL) (Institute of Internal Auditors, 2017; Jiang, 2015), and vi) internal quality assurance (*IQA)* (Gros et al., 2017; Jiang, 2015). Questionnaires were used to collect data. The first five variables were measured by the level of practice (5 = very frequent, 4 = frequent, 3 = occasional, 2 = sometimes, and 1 = never). The IQA was measured by the level of practice and compliance (1 = no practice, 2 = practice but not compliance, 3 = practice and plan to comply, and 4 = practice and compliance).

**4) Control variables** consist of organization size (*SIZE*) measured by the logarithm of total assets (Alzeban, 2015; Yatim, 2010) and industry type (*IND*) categorized by SET industry group (Yatim, 2010). Data was manually collected from annual registration statement (Form 56-1).

**Survey Responses**

**Outlier and Sampling Bias Test:** A total of 159 responses were received, with only 128 complete data sets. Two had to be excluded because they did not pass the multivariate outliers test using the Squared Mahalanobis Distance ($D^2$) (Hampton, 2015). The remaining 126 responses (a response rate of 17.7%) were then used for analysis, which is sufficient for the SEM analysis (Hair et al., 2010; Kline, 2011). The results of the industry distribution test also found that the spread of the responses reflects the population, so there is no sampling bias.

**Non-Response Bias Test:** Responses were tested for non-response bias using the t-Test of Equality of Means, and t-values ranged between -0.56 and 1.04 ($p$-value > 0.05). The test results confirmed no non-response bias. In addition, the reliability test, using Cronbach's Alpha of variable, showed values between 0.73 and 0.94, which were greater than the recommended 0.70 threshold, indicating that the responses are reliable (Nunnally, 1975).

The characteristics of 126 usable responses were reviewed to identify the respondents' backgrounds. First, the market distribution was 83% SET and 17% MAI. Second, industry distribution was 9.5% agriculture and food industry, 6.4% consumer products, 8.7% financials, 19.8% industrials, 15.1% property and construction, 11.1% resources, 23% services, and 6.4% technology.

**Table 1: Variable Measurement – Governing Body**

| Observed Variables | Indicator | Operational Definition | Reference |
|---|---|---|---|
| 1) Board Committee (BC) | Board Size | Number of the board of directors | Ganesan et al. (2017); Moumen et al. (2016); Tai et al. (2020) |
| | Board Independence | Number of independent directors | Ganesan et al. (2017); Moumen et al. (2016); Tai et al. (2020) |
| | Board Meeting | Number of board meetings | Gordon et al. (2009); Yatim (2010) |
| | Board Expertise | The average number of the board's professional diplomas or certificates in related fields, e.g., i) accounting or finance, ii) auditing or internal auditing, iii) corporate governance or risk management, iv) law or political science, v) business administration or strategic management, vi) economics, vii) leadership and, viii) information technology | Magee et al. (2019); Mitrapanont & Thirathon (2022); Yatim (2010) |
| 2) Audit Committee (AC) | Size of the audit committee | Number of audit committee members | Ganesan et al. (2017); Moumen et al. (2016); Namsirikul (2018); Tai et al. (2020) |
| | Audit committee meeting | Number of audit committee meetings | Ganesan et al. (2017); Moumen et al.; (2016); Namsirikul (2018); Tai et al. (2020) |
| | Audit committee expertise | The average number of AC's professional diplomas or certificates in related fields, e.g., i) accounting or finance, ii) auditing or internal auditing, iii) corporate governance or risk management, iv) law or political science, v) business administration or strategic management, vi) economics ,vii) leadership and, viii) information technology | Alzeban (2015); Alzeban & Sawan (2015); Gebrayel et al. (2018); Tai et al. (2018); Mitrapanont & Thirathon (2022) |

# Research Findings

## Data Characteristics and Quality

The statistical characteristics of all observed variables were assessed. Table 2 shows the descriptive statistics from IBM SPSS Statistics Desktop Version 23. The observed variables have skewness (SK) values ranging from -1.70 to 1.16 and kurtosis (Kr) values ranging from -0.78 to 2.26, indicating that all observed variables are normally distributed (Kline, 2011). The sample multiple correlation coefficients were then examined, and the squared multiple correlation ($R^2$smc) values ranged between 0.06 and 0.77, demonstrating no multicollinearity problem (Hair et al., 2010).

**Table 2: Descriptive Statistics (n = 126)**

| Latent Variable | Observed Variable | | Min | Max | Mean | S.D. | SK | Kr |
|---|---|---|---|---|---|---|---|---|
| GB | BC | Board committee | 16.71 | 46.46 | 27.61 | 6.20 | 0.74 | 0.48 |
| | AC | Audit committee | 8.00 | 26.33 | 13.30 | 3.76 | 1.16 | 1.08 |
| IAS | IAR | IA resource | 0.57 | 1.00 | 0.80 | 0.10 | 0.10 | -0.78 |
| | IAC | IA competence | 0.47 | 1.00 | 0.84 | 0.11 | -0.63 | 0.32 |
| IAQ | RBP | Risk-based audit plan | 2.00 | 5.00 | 4.62 | 0.65 | -1.70 | 2.26 |
| | ICF | Internal control framework | 3.00 | 5.00 | 4.61 | 0.61 | -1.39 | 0.84 |
| | REP | Reporting | 3.00 | 5.00 | 4.74 | 0.47 | -1.59 | 1.59 |
| | RCA | Root cause analysis | 3.00 | 5.00 | 4.77 | 0.43 | -1.64 | 1.50 |
| | FOL | Follow-up | 3.00 | 5.00 | 4.67 | 0.54 | -1.47 | 1.25 |
| | IQA | Internal quality assurance | 1.00 | 4.00 | 3.11 | 1.03 | -0.01 | -0.14 |
| | SIZE | Organization Size | 5.76 | 13.36 | 8.91 | 1.59 | 0.66 | 0.03 |
| | IND | Industry Type | 1.00 | 8.00 | 4.81 | 2.06 | -0.31 | -0.89 |

## Measurement Model

This study applied a two-stage approach (Anderson & Gerbing, 1988): the measurement model, the CFA, and the structural model.

**Reliability and Validity Test:** The measurement model was tested for its reliability and validity, and the results from SPSS-AMOS version 23 are shown in Table 3. Every variable had a factor loading between 0.35 and 0.86, which was greater than the recommended 0.33 threshold and statistically significant at the 0.001 and 0.01 levels (Comrey & Lee, 2013), indicating that all indicators can be used to measure the latent variable.

Variables were assessed for their reliability: composite reliability and average variance extract (AVE) (Fornell & Larcker, 1981; Hair et al., 2010). The composite reliability of GB, IAS, and IAQ were 0.64, 0.66, and 0.87, respectively, which were greater than the suggested 0.60 threshold. Subsequently, the AVEs of IAS and IAQ were 0.50 and 0.55, respectively, which were greater than the suggested 0.50 threshold. Even though the AVE value of GB was 0.49, a little bit lower than 0.50, considering the theoretical support and its composite reliability value, the GB is still retained (Fornell & Larcker, 1981). In sum, it can be concluded that defined indicators can be used to characterize latent variables.

**Table 3: Reliability and Validity Test**

| Latent Variable | Observed Variable | Factor Loadings | Composite Reliability | AVE |
|---|---|---|---|---|
| GB | BC | 0.86*** | 0.64 | 0.49 |
| | AC | 0.49** | | |
| IAS | IAR | 0.68*** | 0.66 | 0.50 |
| | IAC | 0.73*** | | |
| IAQ | RBP | 0.81*** | 0.87 | 0.55 |
| | ICS | 0.85*** | | |
| | REP | 0.78*** | | |
| | RCA | 0.75*** | | |
| | FOL | 0.78*** | | |
| | IQA | 0.35*** | | |

****p*-value < .001; ***p*-value < .01

**Discriminant Validity and Conformity Test:** The discriminant validity and conformity were then tested. The square roots of the AVEs of GB, IAS, and IAQ were 0.70, 0.71, and 0.74, respectively, which were greater than the correlation coefficients with other latent variables (Fornell & Larcker, 1981; Hair & Sarstedt et al., 2014). Considering the model fit (Table 4), all variables met the discriminant criteria for discriminant validity, and it can be concluded that the measurement model is acceptable.

**Table 4: Model Fit Indices**

| Indices[3] | Results | Suggested Threshold | Reference |
|---|---|---|---|
| $x^2$/df | 1.65 | < 2.00 | Bollen (1989) |
| GFI | 0.94 | ≥ 0.90 | Benler (1990); Hair *et al* (2010) |
| IFI | 0.95 | ≥ 0.90 | Benler (1990); Hair *et al* (2010) |
| TLI | 0.93 | ≥ 0.90 | Benler (1990); Hair *et al* (2010) |
| CFI | 0.95 | ≥ 0.90 | Benler (1990); Hair *et al* (2010) |
| RMSEA | 0.07 | < 0.08 | Hair *et al.* (2010) |

## Structural Model

The evaluation of structural models focuses on the overall fit of the model and the structural relationship between constructs (Hampton, 2015). The SEM results of the structural model are shown in Figure 2. Considering the model fit, all variables met the criteria, and it can be concluded that the structural model is acceptable.

[3] Model Fit indices Description: $x^2$ = Model Chi Square; df = Degree of Freedom;
GFI = Goodness of Fit Index; IFI = Incremental Fit Index; TLI = Tucker Lewis Index;
CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation

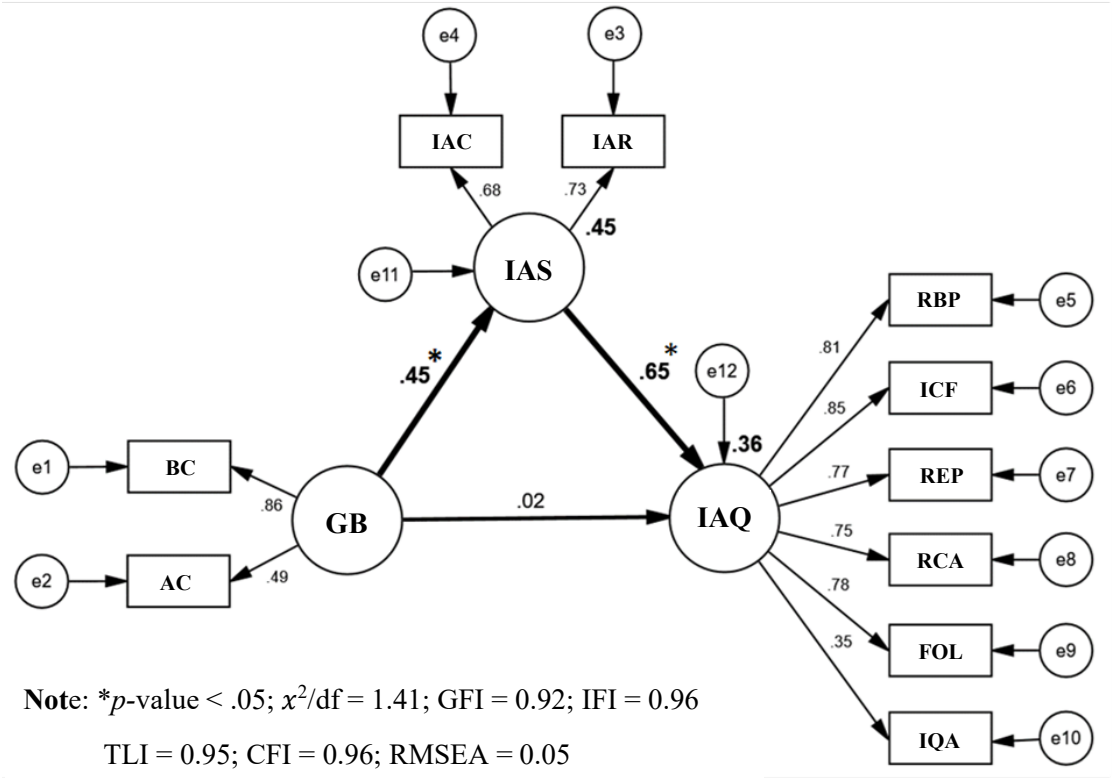


**Figure 2: Structural Model**

The statistical significance of the direct, indirect, and total effects was tested using a bias-corrected bootstrap at a 95% confidence interval (Guan, 2003) and 5,000 samples (Hair et al., 2014). The test results are shown in Table 5.

**Table 5: The Bootstrapping Test**

| Structural Path | Observed Coefficient | Bootstrap S.D. | 95% Confidence Interval (n=5,000) |
|---|---|---|---|
| Direct Effect (GB -> IAQ) | 0.007 | 0.07 | (-0.141 – 0.126) |
| Indirect Effect (GB -> IAS -> IAQ) | 0.083* | 0.06 | (0.021 – 0.256) |
| Total Effect (GB -> IAQ) | 0.090* | 0.06 | (0.004 – 0.233) |

* *p*-value < .05

Summary of the direct effect, indirect effect, total effect, and coefficient determinant (R Square) as shown in Table 6.

**Table 6: Structural Model**

| Hypothesis | Path | Direct Effect | Indirect Effect | Total Effect | $R^2$ | Result |
|---|---|---|---|---|---|---|
| H1 | GB -> IAQ | 0.02 | | | | Not supported |
| H2 | GB -> IAS -> IAQ | | 0.29* | 0.29* | 0.36 | Supported |
| H2a | GB -> IAS | 0.45* | - | 0.45* | 0.45 | Supported |
| H2b | IAS -> IAQ | 0.65* | - | 0.65* | | Supported |

* *p*-value < .05

For H1, the result found that GB had no direct positive effect on IAQ (β = 0.02, *p*-value > 0.05). However, the side analysis found that GB has positive total effects on IAQ (β = 0.29, *p*-value < 0.05), and the possible explanation is that there is a mechanism that mediates the relationship. The result of H2a found that GB had a positive direct effect on IAS (β = 0.45, *p*-value < 0.05), while H2b found that IAS has a positive direct effect on IAQ (β = 0.65, *p*-value. < 0.05). In addition, the test for potential indirect effect (H2) found that GB had a positive indirect effect on IAQ, mediating by IAS (β = 0.29, *p*-value < 0.05).

# Discussion

Internal audit has become a significant part of good corporate governance. However, internal audit could not be done alone without support from governing body. Prior research has studied the relationship between a governing body and internal audit quality but found no consensus. This study investigates both the direct and indirect effects of GB on IAQ.

The results showed that GB had no positive direct effect on IAQ but had a positive indirect effect on IAQ through IAS. The results suggest that even though internal audit has become an important component of effective corporate governance, it cannot be performed without assistance from GB. The results support agency theory, which argues that GB and internal audit could serve as a mechanism for supervising, monitoring, and auditing management in order to increase shareholder value. These results also confirm upper echelon theory regarding GB playing a significant role in supporting internal audit functions with adequate resources and competent personnel so that they may achieve their objectives and add value.

A possible explanation for the absence of a direct relationship between GB and IAQ is that the board of directors and audit committee cannot work in isolation, especially in VUCA business context. A strong governing body alone is insufficient to enhance internal audit quality; support for internal audit in terms of competence improvement and budget allocation is also required. It is consistent with the three lines model, which emphasizes that the governing body and internal auditors must collaborate to achieve organizational objectives.

The results also suggest that board of directors should be aware of their roles and responsibilities to support the internal audit function and oversee quality, in accordance with the CG Code 2017 and the three lines model. In addition, it reinforces IIA's claim regarding the significance of appropriate resources, competence, and budget for internal audit support (Institute of Internal Auditors, 2017).

### Theoretical Contributions

This study contributes to academic literature in three ways. First, this study contributes to agency theory, upper echelon theory, and the three lines model. It proposes the roles of the governing body to not only oversee internal audit for better quality and independence but also to support internal audit by providing sufficient resources and qualified personnel (Institute of Internal Auditors, 2020).

Second, it is also consistent with the CG Code 2017 that a board of directors is required to organize a competent internal audit function to evaluate the effectiveness of risk management and internal control systems, while an audit committee is accountable for assessing the quality of internal audit (Securities and Exchange Commission, 2017).

Third, prior research has studied the relationship between governing body and internal audit quality, but found no consensus. This study contributes to the literature on determinants of internal audit quality in Thailand. It is one of the earliest research studies to include a governing body, internal audit support, and internal audit quality in one study and to investigate both direct and indirect effects.

### Managerial Implications

This study provides regulatory, policy makers, and governing body with recommendations. First, the results suggest that publicly listed companies' regulatory authorities or policy makers should consider regulating the required qualifications and competence of internal auditors, particularly CAEs. Currently, the SEC regulates only the qualifications, backgrounds, and continuing education of governing body. According to the results, SEC should consider emphasizing the significance of internal audit support in terms of professional certification and ongoing education in the accounting and management fields. Furthermore, the results also highlight the necessity for professional organizations like the Thai IIA or the Federation of Accounting Professions to consider creating or promoting a local professional certificate for internal auditing as an alternative to international certificates.

Second, this study enables the governing body to recognize the significance of assigning trained and competent personnel to conduct internal audit functions. Companies may also consider appointing CAEs with professional credentials.

Third, this study also suggests that the governing body should support allocating resources to internal audit more efficiently and effectively. Additionally, the governing body should encourage CAEs and internal audit personnel to develop their knowledge periodically, including obtaining professional certification. An annual minimum number of training hours may be established for general internal audit personnel.

## Conclusion

### Brief Summary

This study examines the direct relationship between a governing body and internal audit quality as well as the mediating effect of internal audit support in the relationship between a governing body and internal audit quality. Overall, the results found no direct relationship between a governing body and internal audit quality, but an indirect relationship through internal audit support. Therefore, it can be concluded that, to enhance the quality of internal audit, rather than the board of directors and audit committee work alone, they should provide adequate support to internal audit in terms of resources and competence.

### Limitations and Directions of Future Research

There are limitations on the availability of internal audit support and quality data, as well as on the survey method. Because companies disclose internal audit data internally, rather than publicly, this study collected such data from CAEs using a survey method. Even if the survey was constructed and evaluated statistically to avoid bias, the fact that survey-based research relies on respondents' opinions is always a limitation. Therefore, future research may consider using other methods, such as an experiment or an interview to add more literature, especially in Thailand.

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# Appendix

**Questionnaire**

**Instruction:** Please fill in the information or mark ✓ in the box ☐ that corresponds to the truth.

1) How many years has the Chief Audit Executive, or the person who is most responsible for internal audit, worked for the organization? _____ years

2) How long has the Chief Audit Executive, or the person most responsible for internal auditing, worked in the field of internal audit?
   - ☐ less than 3 years
   - ☐ 3 – 6 years
   - ☐ 7 – 9 years
   - ☐ more than 9 years

3) How many personnel perform internal audit for your organization?
   (In the case of outsourced or co-sourced internal audit services, please consider only the person who performs internal audit work for the organization.) _____ person

4) How many of the certificates listed below have internal audit personnel in your organization received? _____ certificates
   - Certification in Risk Management Assurance (CRMA)
   - Certified Internal Auditor (CIA)
   - Certified Information Systems Auditor (CISA)
   - Certified Public Accountant (CPA)
   - Certified Management Accountant (CMA)
   - Certified in Risk & IS Control (CRISC)
   - Certified Professional Internal Audit of Thailand (CPIAT)
   - Internal Auditing Certificate Program (IACP)

5) How many hours of Continuing Professional Development (CPD) or Continuing Professional Education (CPE) have internal audit personnel received in the year 2020?
   - ☐ less than 12 hours
   - ☐ 12 – 20 hours
   - ☐ 21 - 40 hours
   - ☐ more than 40 hours

| | | Strongly Disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly Agree 5 |
|---|---|---|---|---|---|---|
| 6) | Internal audit function has a policy to have internal audit personnel trained or develop knowledge to perform continuous work. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7) | Internal audit function has been allocated an annual budget sufficient for operations. | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | Never 1 | 2 | Occasional 3 | 4 | Very Frequent 5 |
|---|---|---|---|---|---|---|
| 8) | Internal audit function prepares an annual risk-based audit plan. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9) | Internal audit function uses international standards of internal control (such as COSO) as a guideline. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10) | Internal audit function reports on audit findings and significant assessments. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 11) | Internal audit function provides reports on the root cause analysis of audit findings and recommendations. | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | Never 1 | 2 | Occasional 3 | 4 | Very Frequent 5 |
|---|---|---|---|---|---|---|
| 12) | Internal audit function monitors whether the organization corrected as suggested in the audit report within the time frame specified based on the risk level. | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | No Practice 1 | Practice but not compliance 2 | Practice and plan to comply 3 | Practice and Compliance 4 |
|---|---|---|---|---|---|
| 13) | Internal audit quality assessment was conducted by an internal assessor every year. | ☐ | ☐ | ☐ | ☐ |
| 14) | Internal audit quality assessment was conducted by an external assessor every five years. | ☐ | ☐ | ☐ | ☐ |