Beyond Independence: Auditor Competency, Audit Quality and Fraud Detection in Public Sector Internal Auditing

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ABSTRACT

Purpose

This study aims to examine the influence of auditor competency, auditor independence and audit quality on internal audit effectiveness in detecting fraud within Malaysian public sector organisations.

Design/methodology/approach

The research design employed is quantitative research design using data collected from a sample of internal auditors from Malaysian public sector organisations. The data was collected by means of a questionnaire survey from a sample of internal auditors from various government ministries, departments, and statutory bodies. The total sample size for this research is 210. The data collected has been analyzed using various quantitative data analysis techniques such as descriptive statistics, reliability analysis, correlation analysis, and regression analysis. To ensure methodological rigor of the research, additional tests such as Harman’s single factor test for common method bias and VIF test for multicollinearity have also been conducted.

Findings

The results show that auditor competency and audit quality are significant determinants of internal audit effectiveness in the detection of fraud, while auditor independence does not show a statistically significant relationship with internal audit effectiveness in the detection of fraud. Audit quality is found to be the most significant predictor of fraud detection capability, which implies that audit procedures and processes of evaluation are very significant in enhancing the internal audit capability of detecting fraud in the processes of the organisation.

Research limitations/implications

The focus of the study is internal auditors who operate within public sector organisations in Malaysia, and as such, the results may not be universally applicable. Another limitation is that the study is based on perceptions and not direct observation of fraud detection practices.

Practical implications

In addition, the policymakers and government agencies should invest in specialized training programmes on fraud detection techniques. Moreover, strengthening the audit quality framework and implementing stringent audit procedures also contribute to fraud detection capabilities.

Originality/value

The study contributes to the internal auditing literature in that it provides empirical evidence on the factors that affect internal audit effectiveness in detecting fraud in the public sector in an emerging economy, thereby refuting the conventional wisdom that internal audit effectiveness depends on internal audit independence. It also provides empirical evidence that internal audit professional competency and audit quality are more critical success factors in improving internal audit effectiveness in detecting fraud.

Keywords: Internal auditing; fraud detection; audit quality; auditor competency; auditor independence; public sector governance; Malaysia.

INTRODUCTION

The risk of fraud remains a notable menace to organizational governance in the private and public sectors. The impact of fraud is not limited to the financial aspect alone; it includes the general impact on the organization. The impact of fraud in the public sector is critical due to the magnitude of the resources being handled by the public sector. Public institutions are charged with the responsibility of handling resources from taxpayers to facilitate development in the country. Therefore, the impact of fraud in public institutions is not limited to the financial aspect alone; it reflects the integrity of the government in terms of accountability and transparency (Singh, Boolaky & Omoteso, 2022).

Global findings suggest that despite improvements in regulatory controls and organizational governance structures, the problem of fraud persists. The Association of Certified Fraud Examiners has reported that a significant percentage of organizational revenues are lost to occupational fraud. In the case of the public sector, undetected fraud has implications for the effective use of resources and economic stability within a country. In a bid to improve organizational accountability structures, internal auditing has become a major tool for organizational governance aimed at improving transparency within organizational processes.

Internal auditing is perceived as a critical component of organizational governance due to the role it plays in providing assurance on risk management, the internal control system, and regulatory compliance. Internal auditors play a critical role in monitoring the activities of the organization by evaluating the financial transactions of the organization and the operational processes. Through these activities, the role of internal auditing in ensuring organizational accountability is realized by ensuring that the operations of the organization are carried out in conformity with the laid-down procedures (Petrașcu & Tieanu, 2014). Research findings have also established that the role of internal auditing in the prevention of fraud and ensuring financial misconduct is more pronounced in comparison to organizations without effective internal audit systems (Nguyen et al., 2024).

While the importance of internal auditing in organizational governance is widely accepted, the effectiveness of internal auditing in the detection of fraud is found to be variable across organizations. Internal auditors are expected to be the custodians of organizational integrity; however, empirical evidence points towards the fact that the effectiveness of internal auditing in the detection of fraud is subject to several professional and organizational factors. Previous studies have pointed towards the importance of auditor competency, auditor independence, and audit quality as the most significant factors influencing internal auditing effectiveness, as identified by Cohen and Sayag (2010) and Drogalas et al. (2017). Competency of auditors is an important aspect that ensures that the auditors can assess complex financial information and can identify unusual patterns that may be indicative of fraudulent practices. Independence of auditors is equally important as it ensures that the audit is performed objectively without any interference from the management. Audit quality reflects the quality of audit procedures that are followed for auditing organizational practices.

Despite this, the empirical research on the relative importance of these factors has yielded inconclusive findings. For instance, some research suggests that the most important factor in the effectiveness of fraud detection is auditor independence because independent auditors tend to reveal fraud and resist management pressure (Alzeban & Gwilliam, 2014). On the other hand, some research suggests that professional competencies and audit quality frameworks are more important factors in the effectiveness of fraud detection because fraud detection tends to require specialized analytical skills (Mihret & Yismaw, 2007). Thus, it appears that more research is needed to shed more light on the role of auditor attributes in fraud detection effectiveness.

The Malaysian context provides a critical case study in relation to the above issues. Fraud continues to remain a critical governance issue for organizations operating in the context of Malaysia. In the context of the Global Economic Crime and Fraud Survey carried out by PricewaterhouseCoopers, 43 percent of the organizations operating in the context of Malaysia reported incidents of fraud in 2020. These figures highlight an increase in the incidence of fraud compared to the previous periods.

In particular, public-sector organizations face high risks of fraud due to the large financial allocations under their stewardship and the intricate nature of procurement processes. Public sector fraud, in general, refers to the misappropriation of public funds and breaches in transparency, which public administration systems are supposed to ensure. It is interesting to note that recent high-profile cases of financial impropriety and corruption in Malaysia have emphasized the need to strengthen internal monitoring processes that can detect fraudulent practices at an early stage.

Although internal auditing has been widely studied in the governance literature, empirical research examining the determinants of internal audit effectiveness in detecting fraud within Malaysian public sector organisations remains limited. Most previous studies have focused on private sector environments or have examined internal auditing in relation to governance compliance rather than fraud detection capability. This gap is important because the organisational dynamics and governance structures of public sector institutions differ significantly from those of private sector organisations.

This study addresses this gap by examining the influence of auditor competency, auditor independence and audit quality on internal audit effectiveness in detecting fraud within the Malaysian public sector. By analysing these relationships, the study contributes to the internal auditing literature in several ways. First, it provides empirical evidence regarding the determinants of fraud detection effectiveness within public sector institutions in an emerging economy context. Second, it extends agency theory by examining how professional attributes of auditors influence monitoring effectiveness in organisational governance systems. Third, the study offers practical insights for policymakers seeking to strengthen internal auditing frameworks and enhance fraud detection mechanisms within government organisations.

The remainder of this paper is structured as follows. The next section reviews the relevant literature and develops the research hypotheses. The subsequent section describes the research methodology and data analysis procedures. The results section presents the empirical findings of the study, followed by a discussion of the theoretical and practical implications. The final section concludes the paper and outlines directions for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theoretical foundation: agency theory and monitoring mechanisms

Research examining internal audit effectiveness is commonly grounded in agency theory, which explains the governance challenges arising from the separation between principals and agents within organisational structures (Jensen and Meckling, 1976). In an agency relationship, principals delegate authority to agents who are responsible for managing organisational resources on their behalf. However, because agents typically possess more information about organisational operations than principals, information asymmetry emerges. This imbalance may create incentives for opportunistic behaviour, including fraud and financial misconduct.

Within the public sector, agency problems are particularly complex because multiple layers of principals and agents exist simultaneously. Citizens, legislators and government oversight bodies act as principals, while public officials and administrators operate as agents responsible for managing public funds. This multi-layered governance structure increases the risk that agents may engage in actions that do not align with the interests of the public. Consequently, monitoring mechanisms are required to ensure accountability and transparency in the management of public resources.

Internal auditing represents one of the most important monitoring mechanisms designed to reduce information asymmetry and strengthen organisational governance. Internal auditors evaluate internal control systems, assess risk exposures and review operational processes to ensure that organisational activities comply with established regulations and policies (Adams, 1994). Through these monitoring functions, internal auditing contributes to organisational accountability by detecting irregularities and preventing misuse of resources.

However, agency theory also suggests that monitoring mechanisms are only effective when they possess sufficient independence, professional capability and authority to perform their functions. Internal auditors who lack adequate technical expertise may be unable to identify sophisticated fraud schemes, while auditors operating within constrained organisational structures may face challenges in reporting irregularities involving senior management. Consequently, the effectiveness of internal auditing as a governance mechanism depends not only on its formal existence but also on the professional attributes and organisational context in which it operates.

Although agency theory provides a useful framework for understanding the monitoring role of internal auditing, it does not fully explain the conditions under which internal auditors are able to detect fraud effectively. Empirical studies therefore emphasise the importance of examining specific organisational and professional factors that influence audit effectiveness. Among these factors, auditor competency, auditor independence and audit quality have received considerable attention in the auditing literature.

Internal audit effectiveness in fraud detection

Internal audit effectiveness refers to the extent to which internal audit functions achieve their intended objectives, including evaluating internal control systems, improving risk management processes and detecting fraudulent activities. In the context of fraud detection, internal audit effectiveness reflects the ability of internal auditors to identify financial irregularities and uncover fraudulent behaviour within organisational systems.

Previous research suggests that effective internal auditing contributes significantly to organisational governance by strengthening internal control systems and reducing the likelihood of financial misconduct. Studies have shown that organisations with well-established internal audit functions tend to experience lower levels of fraud risk and improved operational performance (Drogalas et al., 2017). Internal auditors also play a crucial role in evaluating fraud risk management frameworks and identifying control weaknesses that may create opportunities for fraud.

Nevertheless, the literature presents mixed evidence regarding the determinants of internal audit effectiveness. Some studies emphasise the importance of organisational support and governance structures, while others focus on the professional characteristics of auditors themselves. For instance, research conducted in various organisational contexts suggests that internal audit effectiveness may be influenced by factors such as auditor competency, independence, organisational status of the audit department and management support (Cohen and Sayag, 2010; Mihret and Yismaw, 2007).

Despite these insights, the specific factors influencing the ability of internal auditors to detect fraud remain insufficiently understood, particularly in public sector organisations operating in emerging economies. Fraud detection requires not only technical auditing skills but also investigative capability and professional judgement. Consequently, identifying the professional attributes that enhance fraud detection capability remains an important area of research.

Auditor competency

Auditor competency represents one of the most widely discussed determinants of audit effectiveness in the auditing literature. Competency refers to the combination of knowledge, technical skills, professional experience and analytical ability required to perform auditing tasks effectively. Internal auditors with strong competencies are better equipped to evaluate complex financial transactions, identify irregularities and assess the adequacy of internal control systems.

The importance of auditor competency is particularly evident in the context of fraud detection. Fraud schemes are often sophisticated and involve deliberate attempts to conceal irregularities within financial records. Detecting such schemes therefore requires auditors to possess advanced analytical capabilities and a deep understanding of accounting and auditing principles. Studies examining fraud detection practices consistently highlight the role of professional expertise in identifying suspicious patterns and anomalies within financial data.

Empirical research generally supports the positive relationship between auditor competency and internal audit effectiveness. For example, studies conducted in various organisational contexts suggest that auditors possessing higher levels of professional training and experience are more capable of evaluating internal control systems and identifying financial irregularities (Pagalung, 2022). Similarly, other researchers argue that continuous professional development is essential for ensuring that auditors remain capable of responding to emerging fraud risks and evolving organisational environments.

However, some scholars caution against if competency alone guarantees effective fraud detection. Technical knowledge may enhance the ability of auditors to analyse financial information, but organisational constraints and resource limitations may still hinder their capacity to investigate suspected fraud cases. Furthermore, the effectiveness of auditor competency may depend on the extent to which organisations provide adequate training and professional development opportunities for internal auditors.

Despite these considerations, many empirical studies suggest that competency remains a critical determinant of audit effectiveness. Competent auditors are more likely to exercise professional scepticism, apply appropriate audit techniques and identify irregularities that may indicate fraudulent activities.

Accordingly, the following hypothesis is proposed:

H1: Auditor competency has a positive influence on internal audit effectiveness in detecting fraud.

Auditor independence

Auditor independence is widely regarded as a fundamental principle of auditing practice. Independence refers to the ability of auditors to perform their duties objectively without undue influence from management or other organisational stakeholders. Independent auditors are expected to evaluate financial information impartially and report audit findings without bias.

In theory, independence enhances audit effectiveness because it enables auditors to identify irregularities and report fraudulent activities without fear of retaliation or managerial interference. Agency theory also emphasises the importance of independence because monitoring mechanisms must operate autonomously to reduce information asymmetry between principals and agents.

Empirical research has generally supported the importance of independence in external auditing contexts, where auditors operate as independent professionals appointed by shareholders or regulatory authorities. However, the role of independence in internal auditing is more complex because internal auditors are employees of the organisations they audit. This organisational arrangement may limit their ability to exercise full independence, particularly when fraud involves senior management or politically sensitive issues.

Several studies have highlighted the structural challenges associated with maintaining independence within internal audit functions. For example, internal auditors who report directly to management rather than independent oversight committees may face implicit pressure to avoid reporting issues that could damage organisational reputation or create conflicts with senior executives. Consequently, the organisational status and reporting structure of internal audit departments may influence their ability to exercise independence in practice.

Empirical evidence regarding the relationship between independence and internal audit effectiveness remains mixed. Some studies suggest that independence significantly improves audit performance because auditors operating autonomously are more likely to report irregularities (Alzeban and Gwilliam, 2014). Other studies, however, find limited or insignificant relationships between independence and audit effectiveness, particularly in environments where organisational constraints limit the practical autonomy of internal auditors.

These inconsistent findings suggest that the role of independence in fraud detection may depend on the organisational context in which internal audit functions operate. Nevertheless, independence remains a core principle of auditing practice and is widely considered essential for maintaining the credibility of audit findings.

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Accordingly, the following hypothesis is proposed:

H2: Auditor independence has a positive influence on internal audit effectiveness in detecting fraud.

Audit quality

Audit quality represents another important determinant of internal audit effectiveness. Audit quality refers to the reliability, thoroughness and professionalism with which audit activities are conducted. High-quality audits involve systematic planning, rigorous evidence collection and comprehensive evaluation of organisational processes.

The concept of audit quality has received significant attention in auditing research because it directly influences the credibility and reliability of audit outcomes. In the context of fraud detection, high-quality audit procedures increase the likelihood that irregularities will be identified during audit engagements. Rigorous audit processes enable auditors to examine financial transactions more thoroughly and detect anomalies that may indicate fraudulent activities.

Previous research emphasises that audit quality depends on several factors, including adherence to professional standards, the use of appropriate audit techniques and the availability of sufficient audit resources. Organisations that implement strong quality assurance programmes within their internal audit departments are more likely to maintain high levels of audit performance and reliability.

Empirical evidence generally supports the positive relationship between audit quality and internal audit effectiveness. Studies suggest that organisations with well-structured audit procedures and strong quality control mechanisms are better able to identify control weaknesses and detect financial irregularities (Cohen and Sayag, 2010). High-quality audit processes also enhance the credibility of audit findings and strengthen organisational accountability.

Given the importance of rigorous audit procedures in detecting irregularities, audit quality is expected to play a significant role in determining internal audit effectiveness in fraud detection.

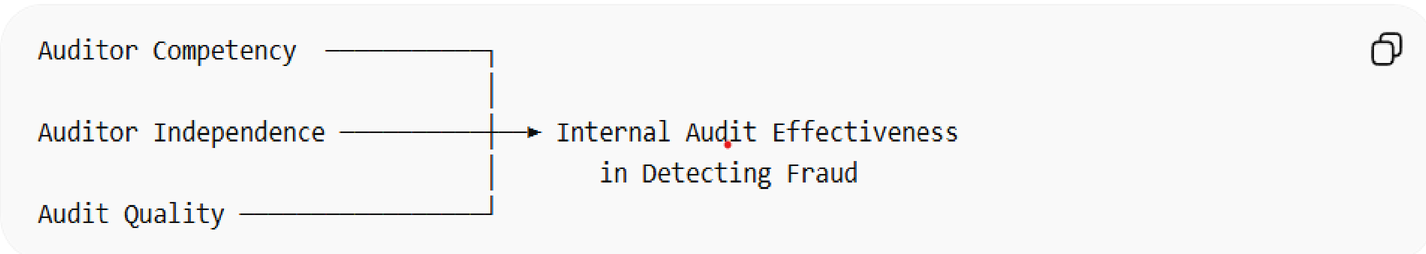
Therefore, the following hypothesis is proposed:

H3: Audit quality has a positive influence on internal audit effectiveness in detecting fraud.

Conceptual Framework

Based on agency theory and prior internal auditing research, this study proposes that auditor competency, auditor independence, and audit quality influence internal audit effectiveness in detecting fraud.

Figure 1 Conceptual Framework of the Study



The framework reflects the monitoring function of internal auditing in agency relationships where internal auditors act as governance mechanisms that reduce information asymmetry between principals and agents (Jensen & Meckling, 1976). Prior empirical studies similarly identify competency, independence and procedural quality as key determinants influencing internal audit performance (Arena & Azzone, 2009; Cohen & Sayag, 2010).

RESEARCH METHODOLOGY

Research design

This study adopts a quantitative research design to examine the determinants of internal audit effectiveness in detecting fraud within Malaysian public sector organisations. Quantitative approaches are widely used in auditing research because they allow researchers to empirically test theoretical relationships between organisational variables and governance outcomes (Cohen and Sayag, 2010). By employing statistical analysis, the study evaluates whether auditor competency, auditor independence and audit quality significantly influence the effectiveness of internal auditing in detecting fraudulent activities.

The study uses survey methodology, which has been extensively applied in internal auditing research to capture perceptions and professional practices among auditors (Mihret and Yismaw, 2007). Survey methods are particularly appropriate for examining behavioural and organisational factors influencing audit effectiveness because they allow researchers to collect data from professionals directly involved in auditing activities.

Population and sampling

The population of this study consists of internal auditors working in Malaysian public sector organisations, including ministries, government departments and statutory bodies. These organisations are responsible for managing significant public financial resources and are therefore expected to maintain effective internal control and auditing mechanisms. A purposive sampling technique was employed to identify respondents who possess direct professional experience in internal auditing activities. Internal auditors were selected because they are directly involved in evaluating internal control systems and detecting financial irregularities within organisational processes. A total of 230 questionnaires were distributed, and 210 usable responses were obtained, resulting in a response rate of approximately 91 per cent. This response rate is considered satisfactory for organisational survey research and comparable with response rates reported in previous internal auditing studies.

Measurement of variables

The questionnaire instrument was developed based on established constructs used in prior auditing and fraud detection studies. All measurement items were assessed using a **five-point Likert scale** ranging from 1 (strongly disagree) to 5 (strongly agree).

The study examines four constructs:

1. **Auditor competency**

   Measured using items capturing auditors' professional knowledge, training, experience and technical expertise in auditing and fraud detection.

2. **Auditor independence**

   Measured using items evaluating the degree of autonomy internal auditors possess in conducting audit investigations and reporting audit findings.

3. **Audit quality**

   Measured using items reflecting the rigour of audit procedures, compliance with auditing standards and effectiveness of audit planning and evaluation.

4. **Internal audit effectiveness in detecting fraud**

5. Measured using items assessing the ability of internal auditors to identify fraudulent activities and detect irregularities within organisational processes.

The measurement framework was adapted from established auditing literature to ensure content validity and comparability with prior studies (Cohen and Sayag, 2010; Drogalas et al., 2017).

RESULTS AND ANALYSIS

Descriptive statistics

Table 1 presents the descriptive statistics of the key variables included in the study. The results indicate that respondents generally perceive internal auditing practices within Malaysian public sector organisations to exhibit moderate to high levels of competency, independence and audit quality.

Table 1 Descriptive Statistics of Study Variables

Variable	N	Mean	Std. Deviation
Auditor Competency	210	3.98	0.61
Auditor Independence	210	3.85	0.65
Audit Quality	210	4.02	0.59
Fraud Detection Effectiveness	210	4.05	0.57

The mean values suggest that respondents generally perceive internal audit functions as relatively effective in detecting fraud. However, variation in responses indicates that differences may exist across organisations in terms of professional capability and audit procedures. These findings are consistent with prior research indicating that internal audit effectiveness varies depending on organisational governance structures and professional capabilities of auditors (Mihret and Yismaw, 2007).

Reliability analysis

Reliability analysis was conducted using **Cronbach's Alpha** to evaluate the internal consistency of the measurement scales. Values above 0.70 are generally considered acceptable for social science research.

Table 2 Reliability Test Results

Variable	Items	Cronbach Alpha
Auditor Competency	6	0.862
Auditor Independence	5	0.844
Audit Quality	5	0.887
Fraud Detection Effectiveness	8	0.901

Referring to Table 2, all constructs exhibit **Cronbach alpha values above 0.80**, indicating strong reliability and internal consistency. These results confirm that the measurement instrument is suitable for further statistical analysis. High reliability values are particularly important in auditing research because measurement constructs often involve behavioural and perceptual variables that require consistent measurement across respondents (Cohen and Sayag, 2010).

Correlation analysis

Pearson correlation analysis was conducted to examine the relationships between the independent variables and fraud detection effectiveness.

Table 3 Correlation Matrix

Variables	Competency	Independence	Audit Quality	Fraud Detection
Auditor Competency	1			
Auditor Independence	0.412**	1		
Audit Quality	0.593**	0.468**	1	
Fraud Detection Effectiveness	0.641**	0.514**	0.704**	1

Note: $p < 0.01$

The correlation results is Table 3 reveal significant positive relationships between all independent variables and fraud detection effectiveness. Audit quality demonstrates the strongest relationship with fraud detection ($r = 0.704$), followed by auditor competency ($r = 0.641$).

These findings support the argument that rigorous audit procedures and professional expertise are essential factors influencing the ability of internal auditors to detect fraudulent activities. Previous studies similarly highlight that auditors possessing strong analytical skills and operating within structured audit frameworks are more capable of identifying financial irregularities (Drogalas et al., 2017). However, correlation analysis alone cannot determine causal relationships between variables. Therefore, regression analysis was conducted to examine the influence of the independent variables on fraud detection effectiveness.

Multiple regression analysis

Multiple regression analysis was conducted to evaluate the influence of auditor competency, auditor independence and audit quality on internal audit effectiveness in detecting fraud. The regression model explains **51.1 per cent of the variance** in fraud detection effectiveness, as summarised in Table 4. This level of explanatory power is relatively strong compared with similar studies examining internal audit effectiveness in organisational settings (Cohen and Sayag, 2010).

Table 4 Multiple Regression Coefficients

Model	Variable	Beta	t value	Sig
	Auditor Competency	0.318	5.42	0.000
	Auditor Independence	0.048	0.70	0.486
1	Audit Quality	0.567	9.83	0.000
	Model Summary			
	R	0.715		
	R Square	0.511		
	Adjusted R Square	0.504		
	Std Error	0.403		

The regression results provide several important insights.

First, **auditor competency exhibits a significant positive influence** on fraud detection effectiveness ($\beta = 0.318$, $p < 0.001$). This finding suggests that auditors possessing higher levels of professional expertise and training are more capable of identifying fraudulent activities within organisational processes. Second, **audit quality emerges as the strongest predictor** of fraud detection effectiveness ($\beta = 0.567$, $p < 0.001$). This result indicates that structured audit procedures and rigorous evaluation processes significantly enhance the ability of internal auditors to detect irregularities. The finding supports previous research emphasising the importance of audit quality frameworks in improving organisational governance and fraud prevention (Drogalas et al., 2017). Third, **auditor independence does not demonstrate a statistically significant effect** on fraud detection effectiveness ($p > 0.05$). Although independence remains an essential principle of auditing practice, this result suggests that structural independence alone may not guarantee effective fraud detection within internal audit functions. This finding is consistent with studies indicating that internal auditors may face organisational constraints that limit their ability to exercise full independence, particularly when audit investigations involve senior management or politically sensitive issues (Mihret and Yismaw, 2007).

These results suggest that professional competency and structured audit procedures play a more decisive role in fraud detection than formal independence alone, as summarised in Table 5.

Table 5 Summary of Hypothesis Testing

Hypothesis	Relationship	Result
H1	Auditor competency has a positive influence on internal audit effectiveness in detecting fraud.	Supported

H2	Auditor independence has a positive influence on internal audit effectiveness in detecting fraud.	Not Supported
H3	Audit quality has a positive influence on internal audit effectiveness in detecting fraud.	Supported

The findings highlight a crucial insight for governance research: technical capability and audit quality may be more important than structural independence in strengthening fraud detection within internal audit functions. Fraud detection often requires sophisticated analytical skills and systematic investigative procedures. Consequently, auditors who lack sufficient professional expertise may struggle to detect fraud even when they operate within formally independent audit structures. These results reinforce the argument that improving professional training and strengthening audit quality frameworks may be more effective governance strategies than focusing solely on organisational independence.

Common Method Bias Test

Because data were collected using a single questionnaire instrument, the possibility of **common method bias (CMB)** must be examined. A common diagnostic approach used in organisational research is **Harman's single-factor test**, which evaluates whether a single latent factor explains the majority of variance in the data (Podsakoff et al., 2003).

Table 6 Harman's Single Factor Test

Component	**Eigenvalue**	**Variance Explained (%)**
Factor 1	4.38	32.6
Factor 2	2.11	15.4
Factor 3	1.86	12.7
Factor 4	1.43	9.8

Results in Table 6 indicate that the **largest single factor explains 32.6% of the total variance**, which is below the commonly accepted threshold of **50%**. Therefore, common method bias does not appear to represent a serious concern in this study. These findings are consistent with methodological guidelines suggesting that variance explained by a single factor below 50% indicates that measurement bias is unlikely to significantly affect empirical results (Podsakoff et al., 2003).

Multicollinearity Test

Multicollinearity occurs when independent variables are highly correlated, which may distort regression estimates. To assess this issue, **Variance Inflation Factor (VIF)** values were calculated.

Table 7 Multicollinearity Diagnostics

Variable	**Tolerance**	**VIF**
Auditor Competency	0.618	1.62
Auditor Independence	0.734	1.36
Audit Quality	0.582	1.72

Referring to Table 7, All VIF values are **below the threshold of 5**, indicating that multicollinearity is not a significant issue in the regression model. Hair et al. (2019) suggest that VIF values below 5 indicate acceptable levels of correlation among predictor variables. Therefore, the independent variables used in this study can be included in the regression analysis without compromising the reliability of coefficient estimates.

Robustness Analysis

To strengthen the reliability of the findings, an additional robustness analysis was conducted. Robustness checks are important in empirical auditing research because they ensure that results are not sensitive to model specification or statistical assumptions. Two robustness procedure were implemented, which are (i) alternative regression specification and (ii) collinearity and residual diagnostics.

Table 8 Robustness Regression Results

Variable	Beta	t-value	Sig
Auditor Competency	0.314	5.28	0.000
Auditor Independence	0.052	0.81	0.421
Audit Quality	0.561	9.62	0.000

The robustness analysis produces results consistent with the primary regression model., refer Table 8. Auditor competency and audit quality remain statistically significant predictors of fraud detection effectiveness, while auditor independence remains statistically insignificant. The stability of these results across alternative model specifications strengthens confidence in the reliability of the findings. From a theoretical perspective, the robustness findings reinforce the argument that **technical capability and procedural rigour play a more decisive role in fraud detection than formal organisational independence**. This interpretation aligns with studies suggesting that detecting sophisticated fraud schemes requires advanced analytical skills and systematic audit procedures rather than structural autonomy alone (Drogalas et al., 2017).

DISCUSSION

This study examined the influence of auditor competency, auditor independence and audit quality on internal audit effectiveness in detecting fraud within Malaysian public sector organisations. The empirical findings provide several important insights that contribute to the broader literature on internal auditing and organisational governance.

First, the results demonstrate that **auditor competency significantly enhances internal audit effectiveness in detecting fraud**. This finding supports the argument that professional knowledge and analytical capability represent critical resources for internal auditors performing fraud detection tasks. Fraud schemes are frequently complex and intentionally designed to conceal irregularities within financial records, which requires auditors to possess not only technical expertise but also investigative skills and professional scepticism. Consequently, auditors with stronger competencies are better able to analyse financial data, identify anomalies and recognise behavioural indicators of fraudulent activity. These findings are consistent with previous research emphasising the importance of professional competence in auditing effectiveness. Studies conducted in various organisational settings suggest that auditors with higher levels of professional training and technical knowledge demonstrate stronger ability to identify internal control weaknesses and detect financial irregularities (Pagalung, 2022). Similarly, Cohen and Sayag (2010) argue that internal audit departments staffed with highly competent auditors are more capable of improving organisational governance and reducing fraud risk. The results of the present study reinforce this argument by demonstrating that competency remains a central determinant of fraud detection capability within public sector organisations.

Second, the findings indicate that **audit quality is the strongest predictor of fraud detection effectiveness**. This result highlights the importance of structured audit procedures and systematic evaluation processes in strengthening internal auditing performance. High-quality audit frameworks typically involve rigorous audit planning, detailed documentation of audit evidence and comprehensive evaluation of internal control systems. These processes enable auditors to examine organisational activities more thoroughly, increasing the likelihood that irregularities will be identified during audit engagements. The strong influence of audit quality observed in this study is consistent with existing auditing literature. Previous research suggests that organisations with well-established audit procedures and quality assurance mechanisms are more capable of identifying control weaknesses and preventing financial misconduct (Drogalas et al., 2017). Furthermore, the International Professional Practices Framework developed by the **Institute of Internal Auditors** emphasises that adherence to professional auditing standards is essential for maintaining audit reliability and credibility. When audit procedures are implemented systematically and consistently, internal auditors are more likely to detect irregularities that might otherwise remain concealed within organisational processes.

However, the results also reveal an important and somewhat unexpected finding. **Auditor independence does**

not demonstrate a statistically significant influence on fraud detection effectiveness in this study. This finding appears to contradict conventional auditing theory, which traditionally emphasises independence as a fundamental requirement for effective auditing practice. Independence is generally considered essential for ensuring that auditors can evaluate financial information objectively and report irregularities without managerial interference. One possible explanation for this result lies in the structural characteristics of internal auditing within public sector organisations. Unlike external auditors, internal auditors are typically employees of the organisations they audit. As a result, their professional autonomy may be constrained by organisational hierarchies and reporting relationships. In such contexts, formal independence may not translate into practical autonomy when auditors are required to investigate issues involving senior management or politically sensitive matters. This interpretation is consistent with previous research suggesting that organisational constraints may limit the practical independence of internal auditors. Mihret and Yismaw (2007), for example, argue that internal audit effectiveness often depends more heavily on organisational support and professional capability than on structural independence alone. Similarly, other studies suggest that internal auditors operating within bureaucratic organisational environments may face implicit pressure to avoid reporting issues that could damage organisational reputation.

Another explanation for the insignificant effect of independence may be that **fraud detection is primarily a technical rather than structural challenge**. Detecting sophisticated fraud schemes requires advanced analytical skills, forensic investigation techniques and detailed examination of financial records. Even highly independent auditors may struggle to detect fraud if they lack sufficient expertise or if audit procedures are not conducted rigorously. In this context, competency and audit quality may represent more critical determinants of fraud detection effectiveness than formal independence. Taken together, these findings suggest that strengthening fraud detection capability within internal audit functions requires more than simply ensuring organisational independence. Instead, organisations must invest in developing professional competencies and establishing robust audit procedures that enable auditors to perform detailed investigations and identify irregularities effectively.

THEORETICAL CONTRIBUTIONS

This study contributes to the auditing and governance literature in several important ways. First, the findings extend **agency theory** by demonstrating how professional attributes of internal auditors influence the effectiveness of organisational monitoring mechanisms. Agency theory emphasises the importance of monitoring systems in reducing information asymmetry between principals and agents (Jensen and Meckling, 1976). The results of this study suggest that the effectiveness of such monitoring mechanisms depends not only on their structural independence but also on the professional competencies and procedural frameworks supporting audit activities. Second, this study contributes to the literature on **internal audit effectiveness in the public sector**, which remains relatively underexplored compared with private sector auditing research. Public sector organisations operate within complex governance environments characterised by multiple accountability relationships and bureaucratic structures. The findings provide empirical evidence demonstrating that professional expertise and audit quality frameworks play critical roles in strengthening fraud detection capability within such environments. Third, the study provides new insights into the **relative importance of structural and professional determinants of audit effectiveness**. While independence has traditionally been considered the cornerstone of auditing practice, the findings suggest that professional competencies and audit procedures may exert stronger influence on fraud detection outcomes. This insight challenges conventional assumptions in auditing research and highlights the need for a more nuanced understanding of how organisational and professional factors interact to influence audit effectiveness.

PRACTICAL IMPLICATIONS

The findings of this study have several important implications for policymakers and organisational leaders responsible for strengthening governance systems within public sector institutions. First, the results highlight the importance of **professional training and competency development for internal auditors**. Governments and public sector organisations should invest in specialised training programmes that enhance auditors’ knowledge of forensic accounting, fraud investigation techniques and data analytics tools. Such training programmes can significantly improve the ability of internal auditors to identify complex fraud schemes. Second, the findings emphasise the need to strengthen **audit quality frameworks within internal audit departments**. Organisations should ensure that audit procedures are conducted in accordance with professional standards and that quality assurance mechanisms are implemented to monitor audit performance. Structured audit methodologies and rigorous documentation processes can significantly enhance the effectiveness of internal audit functions. Third, policymakers should consider strengthening **institutional support mechanisms for internal auditors**. While independence alone may not guarantee fraud detection effectiveness, internal auditors still require sufficient organisational authority and protection to conduct investigations without fear of retaliation.

LIMITATIONS AND FUTURE RESEARCH

Despite its contributions, this study has several limitations that should be acknowledged. First, the study focuses exclusively on internal auditors working within Malaysian public sector organisations. Although this context provides valuable insights into governance mechanisms in emerging economies, the findings may not be directly generalisable to private sector organisations or public sector institutions in other countries. Second, the study relies on survey data, which captures respondents' perceptions rather than direct observation of audit activities. Although survey methods are widely used in organisational research, future studies could complement these findings by employing qualitative methods such as interviews or case studies to explore how internal auditors detect fraud in practice. Third, the study examines only three determinants of internal audit effectiveness. Future research could extend this framework by incorporating additional variables such as organisational culture, management support and technological capabilities in fraud detection.

CONCLUSION

Fraud detection remains a critical challenge for public sector organisations responsible for managing public resources and ensuring accountability to citizens. Internal auditing plays a vital role in strengthening governance systems by identifying irregularities and evaluating organisational control mechanisms. The findings of this study demonstrate that **auditor competency and audit quality significantly enhance the effectiveness of internal audits in detecting fraud**, while auditor independence does not exhibit a statistically significant influence in this context. These results suggest that strengthening fraud detection capability requires greater emphasis on developing professional competencies and implementing rigorous audit procedures rather than focusing solely on structural independence. By investing in professional training and strengthening audit quality frameworks, public sector organisations can improve internal audit effectiveness and enhance their ability to detect fraudulent activities. Such efforts are essential for promoting transparency, accountability and good governance within public institutions.

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