

Evaluating the Quality of Internal Audits and Management Support in Enhancing the Effectiveness of Internal Control Systems

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ABSTRACT

The frequency of prominent corruption and fund misappropriation cases in Malaysia have led to substantial economic losses, estimated at RM277 billion from 2019 to 2023. The problems, together with Malaysia's low position on the Corruption Perceptions Index, underscore inadequacies in internal controls and the quality of internal audits. Internal control systems (ICS) are essential for maintaining compliance and effective governance; nevertheless, their effectiveness depends on the efficacy of internal audits and the support of management. This study investigates the influence of management support on the correlation between internal audit quality and the effectiveness of internal control systems in Malaysia's public sector. The study employs a sample of 34 ministries, statutory organisations, and agencies with internal audit units, involving 76 respondents. The results offer empirical data highlighting the significance of management support in enhancing internal audit functions and the effectiveness of internal control systems. This research enhances the current knowledge by substantiating a model that emphasises the mediating function of management support, in accordance with the criteria of the International Organisation of Supreme Audit Institutions (INTOSAI). It provides practical insights to enhance governance and accountability in the public sector, ensuring effective management of public resources corresponded with national objectives.

INTRODUCTION

The numerous high-profile cases of fund leakages and corruption in Malaysia, such as 1MDB, the Scorpene Submarine, Felda Global Ventures, Tabung Haji, East Coast Rail Link (ECRL) and the more recent Littoral Combatant Ship (LCS) and My Sejahtera controversies, have highlighted the urgent need for reform within the government's accounting systems. These issues have resulted in an estimated RM277 billion losses in economic output from 2019 to 2023, nearly equal to the combined GDP of Johor and Penang the two largest states in Malaysia (Prime Minister Department, 2024). The detrimental effects of corruption, coupled with Malaysia's 61st ranking in the 2022 Corruption Perceptions Index, underline the necessity for stronger internal controls. A key solution lies in improving the quality of internal audits, which serve as a critical mechanism for preventing fraud, enhancing accountability, and ensuring that public resources are used efficiently (Ziorkluei, 2024). However, the problem of ineffective internal audit is found to be increasingly serious in the public sector in Malaysia. A study by Md. Ali et al. (2012) and Ahmad et al. (2009) highlights that the lack of expertise and experience among internal auditors is a key factor contributing to the diminished quality of internal audits in Malaysian federal government organizations.

The internal control system (ICS) is a critical component for detecting non-compliance within organizations (KPMG Malaysia Fraud Survey Report 2009; Omar & Abu Bakar 2012; Radu 2012). As Radu (2012) suggests, managers must select the most appropriate ICS structure, techniques, and procedures to achieve their organizational goals. In Malaysia, the enforcement of ICS in the public sector is seen as a vital measure to strengthen governance and ensure effective public service delivery. While earlier research by Hassan et al. (2015) emphasized that ICS enhances internal audit effectiveness, this study takes a different stance, arguing that the quality of internal audits significantly influences ICS effectiveness. This claim is supported by the latest data, developed in accordance with the Guidelines of Internal Control Standards for the Public Sector by the International Organization of Supreme Audit Institutions (INTOSAI) and the Malaysian Treasury's guidelines

on internal audits for federal and state ministries or departments.

Management support is an important factor in helping auditors carry out their audit activities more effectively, especially in relation to the understanding and evaluation of ICS developed by the company (Aikins 2011; Cosmin 2011; Fadzil et al. 2005). The management that takes immediate action on the audit recommendations given by the internal audit such as taking care of the management of internal audit resources and playing a good role in the implementation of the organization's ICS can affect the value and importance of the role of internal audit in improving the quality of internal audit. In the context of practice in Malaysia, Khalifah and Samaha (2016) confirmed that the response of top management to audit findings is a factor that contributes to the effectiveness of the internal audit function. However, the effect of top management support on the relationship between internal audit efficiency and ICS effectiveness, especially in the public sector in Malaysia is very limited. Therefore, there is a need for this study to provide empirical evidence about the role of management support on the relationship between internal audit efficiency and ICS effectiveness.

This study involves 34 ministries, statutory bodies, authorities, and government agencies with internal audit departments, drawing participation from 76 respondents. It enhances the framework for measuring the effectiveness of ICS building on methodologies developed by previous scholars such as Amudo and Inanga (2009), Baharud-din et al. (2014), Karagiorgos et al. (2011), and Sawalqa and Qtish (2012). The questionnaire used in this study has been adapted from these prior works to meet the requirements of INTOSAI and align with the unique needs of Malaysia's public sector context. The primary objective is to generate new insights to improve how ICS effectiveness is assessed.

In terms of contributions, this study provides valuable empirical evidence to support the model proposed by Baharud-din et al. (2014), specifically by evaluating the role of top management support as a mediating factor that strengthens the relationship between internal audit quality and ICS effectiveness. The findings emphasize the critical role of management in promoting robust ICS practices. The study underscores the importance of adopting the Guidelines on Internal Control Standards for the Public Sector issued by INTOSAI to enhance public sector governance in Malaysia. These efforts are expected to better align organizational processes with strategic objectives, ensuring improved performance and accountability.

The remainder of this paper is organized as follows: The next section provides a concise literature review and outlines the study's hypotheses. This is followed by an explanation of the data collection procedures and methods used for hypothesis testing. The subsequent section presents the study's findings and discusses their implications. Finally, the conclusion summarizes the key insights and offers recommendations for future research directions.

LITERATURE REVIEW

This section reviews the existing literature on the quality of internal audits and management support and their impact on enhancing the effectiveness of Internal Control Systems (ICS). The review explores the relationship between these factors, with a focus on how management support acts as a mediating variable to strengthen this relationship. These insights help identify gaps in the current research that warrant further investigation and provide the basis for discussing the study's hypotheses.

Internal Control System Within Malaysia's Public Sector

The International Organization of Supreme Audit Institutions (INTOSAI) is an independent organization comprising member countries, including Malaysia. Its primary role is to promote the development and exchange of knowledge, enhance government auditing practices worldwide, and strengthen the professional capacity, status, and influence of its members within their respective countries. In 2004, INTOSAI introduced a set of guidelines to assist public sector management in implementing ICS, known as the Guidelines on Internal Control Standards for the Public Sector. These guidelines are based on the internal control framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). However, they have been adapted to align with the unique specifications and operational environments of the public sector (INTOSAI, 2004).

The Prime Minister's Department issued guidelines in a letter dated June 9, 2007, stating that the implementation of ICS within Malaysia's public sector is a strategic measure to mitigate misconduct, fraud, corruption, and other malpractices. Furthermore, under Directive No. 1 of 2009 by the Prime Minister, the establishment of the Governance Integrity Committee was mandated at both the federal and state levels. One of the key terms of reference for these committees is to ensure the implementation of ICS across ministries, departments, agencies, and state-level entities to strengthen governance and accountability throughout the public sector.

The Interdependence of Internal Audit and Internal Control Systems

The Institute of Internal Auditors (IIA) Malaysia (2012) defines internal audit as:

"...an independent unit that provides assurance on the achievement of objectives and offers consulting services aimed at adding value and improving organizational operations. Additionally, internal audit helps organizations achieve their goals by adopting a systematic and disciplined approach to evaluate and enhance the effectiveness of risk management, control, and governance processes" (IIA Malaysia, 2012).

In the public sector, internal audit plays a vital role in assessing the effectiveness of risk management, control, and governance processes, thereby strengthening public accountability (Mebratu, 2012). The effectiveness of internal audit refers to its ability to achieve desired outcomes, such as identifying critical risks, addressing control weaknesses, and supporting organizational goals (Baharud-din et al., 2014; Mihret & Yismaw, 2007). It focuses on ensuring that audit activities produce meaningful results aligned with organizational objectives.

The primary function of the Internal Control System (ICS) is to provide reasonable assurance that operations are conducted efficiently and effectively (Cosmin, 2011; Ninlaphay et al., 2012; Popescu & Omran, 2011; Verdina, 2011; Vijayakumar & Nagaraja, 2012). An effective ICS relies on five key components: control environment, risk assessment, control activities, information and communication, and monitoring (Amudo & Inanga, 2009; Baharud-din et al., 2014; Hermanson et al., 2012). Internal auditors, considered specialists in management control, play a pivotal role in ICS practices (Fadzil et al., 2005). Bowrin (2004) highlights that ICS, as part of an organization's governance structure, guides and controls activities to promote transparency, accountability, and fairness for all stakeholders. Studies confirm that a robust ICS enhances internal audit effectiveness. For example, Karagiorgos et al. (2011) found that the five ICS components strongly correlate with internal audit effectiveness in Greek hotels. Similarly, Baharud-din et al. (2014) identified a positive relationship between ICS effectiveness and internal audit performance in Nigerian local governments.

While effective audits ensure that risks are identified and necessary improvements are implemented, efficient audits ensure these outcomes are achieved within reasonable timeframes and resources. Thus, ICS success depends not only on internal auditors' ability to perform thorough evaluations but also on the smooth and resourceful execution of audit processes. This dual perspective provides a holistic understanding of internal audit's role in strengthening ICS in Malaysia's public sector.

The COSO internal control framework highlights that internal auditor, as a key component of control activities, influence ICS effectiveness. Contingency theory further supports this by emphasizing how internal audit, as a critical unit within an organization, adapts to variables like environment, structure, and strategy to improve performance (Chenhall, 2003). Organizational structure, including segmentation and integration, affects individual motivation, information flow, and control systems, shaping the organization's governance (Lawrence & Lorsch, 1967). From this theoretical foundation, the following hypothesis is proposed:

H1a: Internal audit effectiveness has a positive relationship with ICS effectiveness in Malaysia's public sector.

The efficiency of internal auditors can also significantly impact ICS effectiveness. For example, Amudo and Inanga (2009) demonstrated that internal auditors test transactions and assess control impacts to ensure smooth operations. Cosmin (2011) argues that efficient audits depend on a well-functioning ICS, as strong controls reduce the scope and workload of audit procedures. Conversely, weak ICS increases auditor skepticism, requiring extended procedures, larger sample sizes, and longer durations to gather sufficient evidence.

When assessing higher risk levels, auditors must enhance their procedures, including expanding testing scope,

deploying experienced personnel, or conducting audits at optimal times (Fukukawa et al., 2011). These adaptations further emphasize the relationship between audit efficiency and ICS effectiveness. Based on this understanding, the second hypothesis is proposed:

H1b: The efficiency of internal audits has a positive relationship with ICS effectiveness in Malaysia's public sector.

Together, these hypotheses emphasize the distinct but complementary roles of internal audit effectiveness (producing meaningful outcomes) and efficiency (optimizing resource use) in ensuring robust ICS. Both are critical for strengthening governance frameworks and achieving better accountability in Malaysia's public sector.

Management Support and Internal Control Systems

Management support refers to the approach taken by management in endorsing the role and value of internal auditing, while also empowering auditors to carry out their responsibilities effectively (Alzeban & Gwilliam, 2012). This support significantly influences the effectiveness of internal control systems within Malaysia's public sector. During a keynote address by the Auditor General of Malaysia at the Internal Audit Seminar held around 2007, it was emphasized that internal auditing becomes more effective when top management recognizes and appreciates its value and significance. Consequently, top management that leverages audit reports and acts upon the recommendations provided by internal auditors enhances the overall effectiveness of the internal audit function.

Sawan (2013) in their study on the role of internal auditing in Saudi Arabia's public sector, identified key challenges that hinder the effectiveness of internal audits. These include a shortage of qualified internal audit staff and insufficient support from top management. Similarly, Alzeban and Gwilliam (2012) found that both management and internal auditors perceive management support as a critical factor in ensuring the success of internal audit functions. Studies conducted in the public sector further confirm that resource management by senior leadership plays a crucial role in enhancing internal audit effectiveness (Cohen & Sayag, 2010; Mihret & Yismaw, 2007; Schyf, 2000). Research within Malaysia's public sector also indicates that the quality of internal audits is the most significant contributor to audit effectiveness, followed by management support (Khalifah & samaha, 2016). This view is echoed by Jaffar et al. (2022) who noted that management's responsiveness to audit findings is a key factor driving the effectiveness of internal audit functions in Malaysia's public sector.

The contingency theory, which posits that management strategies are contingent upon organizational quality, is also applicable to internal audit situations. This study adopts the same perspective, focusing on management strategies that support internal audit activities to ensure smooth operations and help the organization achieve its goals. In this context, management support is expected to enhance the effectiveness of internal audits. This is because internal audit functions as a crucial unit within an organization, contributing significantly to improved organizational performance (Aikins, 2011; Mihret, James & Mula, 2010). Building on the theoretical framework and prior research evidence, this study proposes the following hypothesis:

H2: There is a positive relationship between management support and the effectiveness of internal control systems in the public sector.

Management Support as a Moderator in the Relationship Between Internal Audit Effectiveness and Efficiency on Internal Control Systems

Previous studies have consistently shown that management support is a crucial variable that significantly impacts internal audit activities. Management's cooperation with auditors during ICS monitoring and audit scheduling plays a key role in influencing the relationship between internal audit effectiveness and efficiency. The contingency theory further supports this perspective by identifying complex relationships between variables, such as the effects of mediators and moderators (Heo & Han, 2003). In this context, management support is seen as a moderator, shaping the interaction between the effectiveness and efficiency of internal audits. This is because internal audits aim to monitor the effectiveness of the organization's ICS, evaluate specific procedures,

and assess whether the organization's objectives are being achieved (Aikins, 2011; Cosmin, 2011; Fadzil et al., 2005).

To ensure efficiency and effectiveness, internal auditors must have a thorough understanding of the ICS procedures in place and utilize that knowledge to perform their tasks optimally. As such, management's strategic cooperation especially during ICS monitoring and audit scheduling acts as a contingency factor that influences the relationship between ICS effectiveness and audit efficiency. Additionally, previous research has highlighted that prompt action on audit recommendations, feedback on audit findings, and attention to internal audit resource management enhance the importance of internal audits and improve their overall effectiveness. Based on this rationale, the following moderating hypothesis is proposed:

H3: Management support moderates the relationship between internal audit effectiveness and efficiency and internal control systems in the public sector.

METHODOLOGY

Design and Sampling

This study employed a simple random sampling technique. A questionnaire was created using Google Forms, aligning with current technological trends. It was distributed via email to the internal audit units of various public sector organizations, whose email addresses were obtained from their respective official websites selected randomly. Additionally, the questionnaire was shared through WhatsApp among the researcher's acquaintances and distributed via the LinkedIn social media platform.

The respondents were purposively selected from ministries, departments, statutory bodies, and public sector agencies in Malaysia with internal audit functions. The questionnaire was directed specifically to the heads of internal audit and their teams, who are directly responsible for monitoring and evaluating the adequacy and effectiveness of the organization's internal control systems. Follow-up procedures were conducted a week after the initial email distribution and via telephone to ensure responses were received within the specified timeframe. A second follow-up was carried out for non-respondents a month after the questionnaire was sent.

As is widely known, Malaysia's public sector operates at several levels, including federal, state, and local governments. Additionally, statutory bodies function as agencies under the federal and state governments, established under specific legislative acts. Based on the distributed questionnaires, responses were received from seven ministries/departments, seven statutory bodies/local authorities, and 20 government agencies out of a total of 119 distributed

Preliminary observations revealed organizational restructuring within the public sector under Malaysia's unity government, updated as of March 2023. This restructuring involved the merging and/or dissolution of certain public sector organizations, leading to a streamlining of operations to address economic challenges faced by the new government.

Previous studies, such as those by Baharud-din et al. (2014), Karagiorgos et al. (2011), Ninlaphay et al. (2012), and Sawalqa and Qtish (2012), have commonly utilized questionnaires as a data collection instrument. All questions in this study were close ended, as they facilitate ease of response processing and enable straightforward comparison of answers. The questionnaire was divided into four sections:

- Section A: Questions regarding the effectiveness of the internal control systems in the audited organization.
- Section B: Questions addressing management support.
- Section C: Questions on the effectiveness of internal audits.
- Section D: Questions on respondents' demographic information.

Table 1 presents the respondent information for each category of organizations included in this study. Out of 119 questionnaires distributed via email, only 76 responses were received. All collected data were thoroughly

reviewed and verified to ensure they met the necessary completeness requirements for analysis. However, 16 responses were excluded due to insufficient completion, leaving 60 valid questionnaires for analysis. This resulted in a response rate of 58.25%.

Table 1: Respondent Information by Organization Category

Level	Total Government Agencies	Organizations with Internal Audit Units (IAUs)	Respondents	Response Percentage
Ministries/Departments (Federal)	7	7	18	23.68%
Statutory Bodies/Local Authorities	7	7	17	22.37%
Government Agencies	20	20	41	53.95%
Total	34	34	76	100.00%

Referring to Table 1, the largest response rate came from Government Agencies, contributing 53.95% with 41 respondents. This was followed by Ministries/Departments at 23.68% with 18 respondents, and finally, Statutory Bodies/Local Authorities at 22.37% with 17 respondents. Thus, it can be concluded that the respondents represent various levels within Malaysia's public sector, and the findings can be generalized to the overall IAUs within the public sector in Malaysia.

The respondents in this study comprised heads of internal audit and teams directly involved in auditing activities within the public sector, including Ministries/Departments (Federal), Statutory Bodies, Local Authorities, and Government Agencies. Table 2 will provide a detailed breakdown of the respondent information for each organizational category used in this study.

Table 2: Respondents by Job Grade

Job Grade	Number of Respondents	Response Percentage
Administrative Assistant/Assistant Officer	14	18%
Executive/Officer	15	20%
Deputy Director/Auditor	29	38%
Head of Internal Audit	2	3%
Unknown	16	21%
Total	76	100%

Based on Table 2, most organizations have relatively small Internal Audit Unit (IAU) teams. Feedback from respondents indicates that the heads of IAUs often distribute the questionnaires to their audit team members. This approach is reasonable, as the team members are directly involved in the auditing process and must adhere to the guidelines set by the National Audit Department (JAN). However, a portion of respondents chose not to disclose their job grades, leaving these fields blank. This resulted in 21% of the responses being categorized as "Unknown."

Measurement of Variables

A Likert scale was employed to enable respondents to indicate their level of agreement or disagreement regarding aspects of internal auditing. The scale used in the questionnaire was balanced, offering an equal number of positive and negative response options. While researchers commonly use 3-point, 5-point, or 7-point Likert

scales, Hair et al. (2013) suggest that more precise findings can be achieved when variables are measured with a greater number of intervals.

Accordingly, the levels of respondents' perceptions of internal audit effectiveness, management support, and the effectiveness of internal control systems (ICS) were measured on a 7-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Meanwhile, the scale for measuring internal audit efficiency ranged from -3 ("very significant decrease") to -1 ("moderate decrease"), with 0 representing "no change," and values from 1 ("moderate increase") to 3 ("very significant increase").

The effectiveness of internal auditing was assessed based on the achievement of internal audit objectives aligned with the overall goals of the audited organization. The questionnaire developed by Cohen and Sayag (2010) served as a primary reference for the current study's survey instrument. Accordingly, the study incorporated 38 questionnaire items from Cohen and Sayag (2010) along with 9 demographic items. The selection of these items was guided by the internal audit effectiveness measures identified by Cristina and Cristina (2008) and were tailored to suit the public sector environment in Malaysia, which include:

- The extent of audit plan implementation,
- Timeliness of audit report issuance,
- Time taken to resolve audit findings,
- Educational qualifications of auditors,
- Completion of additional ancillary activities, and
- Evaluations by management and auditees.

The measurement of ICS was tailored to comply with the *Guidelines for Internal Control Standards for the Public Sector* issued by INTOSAI (2004). Five (5) key components, outlined on page 16 of INTOSAI (2004), were integrated into the evaluation framework for organizational ICS. These components align with the definition of ICS effectiveness adopted for this study. Items developed by Amudo and Inanga (2009), Karagiorgos et al. (2011), and Sawalqa and Qtish (2012) were referenced in designing the measurement items for ICS effectiveness.

Management support refers to the involvement of top management in the planning and execution of internal audit activities (Alzeban & Gwilliam, 2012). Jaffar et al. (2022) defines management support as the positive response from management to audit findings and their commitment to strengthening internal audit functions. The items used by Jaffar et al. (2022) were deemed appropriate for the current study, as her research context and sample (public sector internal audits in Malaysia) align closely with this study.

The control variable in this study was the size of the internal audit department. This variable was controlled because previous studies have identified its significant relationship with internal audit effectiveness (DeAngelo, 1981). Similarly, Md. Ali et al. (2012) in their studies within the Malaysian public sector, also included internal audit size as a control variable. In this study, internal audit size was measured using the natural logarithmic ratio of the number of internal audit staff to the total number of staff in the organization.

Statistical Analysis Methods

The data in this study were analysed in three stages using SPSS statistical software. The first stage involved conducting factor analysis, correlation analysis, and regression analysis. These analyses aimed to identify patterns in the data, assess the relationships between variables, and evaluate the influence of predictors on the dependent variables. In the second stage, descriptive analysis was performed to summarize and understand the characteristics of each variable within the sample. This step provided an overview of the distribution and central tendencies of the data. The final stage involved hypothesis testing through multiple regression analysis. This analysis examined the relationship between the effectiveness of internal audit and the quality of internal audit, with management support acting as a moderator in this relationship.

Data Cleaning Analysis

The validity of the data was further confirmed through factor analysis, which was conducted to identify, reduce,

and organize many questionnaire items into specific constructs underlying the variables. According to Hair et al. (2013), items must meet three key criteria: a factor loading value exceeding 0.4, cross-loading values between components of less than 0.4, and communalities values greater than 0.3. If any item failed to meet these criteria, it was excluded, and the factor analysis was repeated until all criteria were satisfied. The factor analysis was conducted separately for each variable category to ensure the robustness of the constructs and the reliability of the questionnaire items in representing their respective variables.

The results of the factor analysis for the effectiveness of ICS, involving 18 items, revealed that the factor loading for each item exceeded 0.5. No cross-loading values were identified in this analysis. For the management support variable, the analysis showed that all three criteria outlined by Hair et al. (2013) were met. As a result, all six items related to management support were retained as representative of this variable. Similarly, for the internal audit effectiveness variable, the factor analysis indicated that the factor loadings for all items exceeded 0.5, and no cross-loading values were observed. The results of the factor analysis for each variable are presented in Table 3. These results indicate that the questionnaire items used in this study demonstrated strong validity and reliability across all variables, with Cronbach's Alpha values exceeding 0.9, indicating excellent internal consistency.

Table 3: Factor Loading and Cronbach's Alpha Values

Variable	Number of Items	Factor Loading Range	Cronbach's Alpha
Effectiveness of ICS	18	0.731–0.938	0.954
Management Support	6	0.991–1.000	0.906
Internal Audit Effectiveness	14	0.886–0.998	0.951
Total	38		

The results of the correlation analysis revealed that the correlation values between the variables and the items in the questionnaire exceeded 0.55 for the effectiveness of the ICS (18 items), exceeded 0.717 for the management support variable (6 items), and exceeded 0.636 for the effectiveness of internal auditing (14 items). These high correlation values indicate that all items are capable of accurately measuring their respective variables, consistent with the assertion by Hair et al. (2013) that items with correlation values of 0.40 or higher are considered to have a high level of validity.

The normality of the data distribution for this study was tested using the z-scores for skewness and kurtosis analysis. The results of the test revealed that the z-score for kurtosis in the internal audit effectiveness variable exceeded 2.58, indicating that the data was not normally distributed (Hair et al., 2013). To address this issue, as suggested by Coakes and Steed (2007), outliers identified in the boxplot need to be removed from the analysis. The other variables exhibited skewness and kurtosis values with z-scores below 2.58, suggesting that the data for these variables followed a normal distribution.

Table 4: Data Normality Analysis

Variable	Skewness	Std Error	Z Value (Skewness)	Kurtosis	Std Error	Z Value (Kurtosis)
Effectiveness of ICS	-0.826	0.276	-2.998	1.087	0.545	1.996
Management Support	-0.497	0.276	-1.803	-0.203	0.545	-0.373
Effectiveness of Internal Audit	-0.241	0.276	-0.874	-0.687	0.545	-1.261
Efficiency of Internal Audit	-0.028	0.276	-0.102	-1.056	0.545	-1.938

The correlation values between the variables were found to be less than 0.7, indicating that there is no significant multicollinearity issue present in the data. This suggests that the variables are not highly correlated with each other and can be included in the regression analysis without concern for multicollinearity.

Therefore, the multiple regression analysis model, after considering the mean centrality test, is as follows:

$$ICS = \beta_0 + \beta_1IAE + \beta_2IAEFF + \beta_3MS + \beta_4IAE * MS + \beta_5IAEFF * MS + \beta_7IASize + \varepsilon$$

Where:

- ICS = Internal control system
- IAE = internal audit effectiveness
- IAEFF = internal audit efficiency
- MS = management support
- IASize = Size internal audit department

RESULTS AND DISCUSSION

Descriptive Statistics.

Table 5 presents the descriptive statistics for the independent variables. Based on the table, the mean for internal audit effectiveness is 4.99, while the mean for management support is 4.39. This indicates that public sector organizations in Malaysia place greater emphasis on management support than on the effectiveness of internal audit. On average, internal audit effectiveness is rated highly at 4.99, reflecting a high level of effectiveness within public sector agencies. Similarly, management support is rated 4.39, suggesting a strong level of support for the implementation of internal audit activities.

Table 5: Descriptive Analysis

Variable	Minimum	Maximum	Mean (Average)	Standard Deviation
Internal Audit Effectiveness	1.56	7.00	4.99	1.23
Management Support	1.00	7.00	4.39	1.39

Regression Results

The relationship between the effectiveness of internal audit (IAE) and the effectiveness of internal control systems (ICS) is established through a positive and significant association. The results of the multiple regression analysis in column 1 of Table 6 indicate a positive and significant relationship between internal audit effectiveness and ICS effectiveness, as evidenced by the coefficient value of 0.131 which is significant at $p < 0.05$. This finding supports Hypothesis H1a, demonstrating that higher internal audit effectiveness (IAE) within an organization corresponds to a higher level of ICS effectiveness in the Malaysian public sector. These results align with the exploratory study conducted by Karagiorgos et al. (2011) and the empirical research by Baharuddin et al. (2014). Additionally, this study reinforces the applicability of contingency theory in the context of internal auditing within the Malaysian public sector, further emphasizing its relevance and utility in this field.

The relationship between internal audit efficiency (IAEFF) and the effectiveness of internal control systems (ICS) is evidenced by a positive and significant correlation. The results of the multiple regression analysis in column 2 of Table 6 reveal a coefficient value of 0.399 and significant positive relationship at the $p < 0.05$ level. This finding supports Hypothesis H1b, demonstrating that higher internal audit efficiency (IAEFF) within an organization corresponds to greater ICS effectiveness in the Malaysian public sector.

The relationship between management support (MS) and ICS effectiveness is also established. This is reflected in the coefficient value of 0.200 ($p = 0.057$) which is positive and significant at the $p < 0.01$ level. This finding supports the hypothesis that management support significantly influences the effectiveness of internal audit in

the Malaysian public sector. These empirical results align with prior studies highlighting the critical role of management support in enhancing internal audit effectiveness, such as those by Alzeban and Gwilliam (2012), Sawan (2013), Khalifah and Samaha (2016), Mihret and Yismaw (2007), and Jaffar et al. (2022).

Furthermore, management support serves as a moderator in the relationship between internal audit effectiveness and efficiency. The results of the regression analysis indicate a coefficient value of 0.026 and 0.281, showing a positive and significant effect at the $p < 0.01$ and $p < 0.05$ level respectively. This finding illustrates that management support strengthens the existing positive and significant relationship between internal audit effectiveness and efficiency. The role of management support as a moderator underscores its substantial impact on the relationship. It demonstrates that stronger management support leads to a more robust connection between internal audit efficiency and effectiveness. Therefore, management support is crucial in enhancing the linkage between ICS effectiveness and internal audit effectiveness in the Malaysian public sector.

Table 6: Results of Regressions

	Dependent Variable- ICS	
	(1)	(2)
(Constant)	1.542***	2.619***
	(41.890)	(45.444)
IAE	0.131**	
	(0.978)	
IAEFF		0.399**
		(3.907)
MS	0.200***	-0.326
	(3.377)	(-3.129)
IAE* MS	0.026***	
	(1.347)	
IAEFF* MS		0.281**
		(2.308)
IASize	0.089	-0.351
	(0.329)	(-0.561)
R2	0.337	0.041
Adj.R2	0.113	0.017
N	76	76
F-stat	3.068	2.268
Prob>F	0.000***	0.021**

Where:

ICS	= Internal control system
IAE	= internal audit effectiveness
IAEFF	= internal audit efficiency

MS	= management support
IASize	= Size internal audit department

t statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

CONCLUSION AND RECOMMENDATIONS

Overall, it can be concluded that employees must adhere to internal control systems, as every public sector entity understands its duties and responsibilities. However, improvements in responsibilities are necessary to avoid confusion in work quality and during audits. Governance processes should be managed through structured audit procedures, with internal auditors receiving proper training, relevant educational backgrounds, and integrating controls harmoniously through collaboration among all departments and the internal control unit.

Public sector units or departments should consider the findings of this study to address issues within their environment. An effective internal control system (ICS) is essential, one that can account for the risks present in every department and aligns with the requirements of ICS best practices. Moreover, internal auditors must work without undue pressure or tight deadlines, as such conditions can compromise the collection of appropriate and sufficient evidence. They should also take complaints about damages seriously, as these are often genuine rather than false. In summary, the smooth functioning of departments, commitment, and trust among public sector employees form the foundation for improving the quality of public services.

This study found that the effectiveness of ICS and management support are key factors that enhance the effectiveness of internal audits in Malaysia's public sector. Furthermore, management support plays a significant role in strengthening the relationship between ICS effectiveness and internal audit effectiveness. The study's hypotheses were accepted, including the assumption that contingency organizational characteristics influence the effectiveness of internal audits.

Thus, effective ICS characteristics enhance the internal audit effectiveness in Malaysia's public sector. Similarly, management strategies that provide support for implementing audit recommendations and demonstrating commitment strengthen internal audit practices. Management support, therefore, serves as a critical moderator in enhancing ICS effectiveness and, subsequently, the effectiveness of internal audits in the public sector.

This study contributes new insights by highlighting management support for internal audit activities as a primary factor in strengthening the relationship between ICS effectiveness and internal audit performance. The findings also have policy and governance implications for Malaysia's public sector, suggesting that ICS implementation should follow guidelines issued by INTOSAI, with emphasis on management support for internal audit activities to improve internal audit effectiveness.

However, the study faced certain limitations that may have influenced its findings. The measurement of ICS effectiveness and management support relied on the perceptions of internal auditors regarding ICS levels and management support, which could introduce subjectivity into the results. The management aspects in organizations were assessed based on questionnaire items distributed during the study. However, this measurement approach may not accurately reflect the actual state of ICS effectiveness and management support within the organization. The possibility of corrective actions undertaken by management was not accounted for in the study.

To achieve a more accurate measurement of these two variables, future studies could rely on the perceptions of management regarding the effectiveness of their organization's ICS and their support for internal audit activities. Additionally, rather than solely focusing on the outcomes achieved by internal audits (internal audit effectiveness), it is recommended that future research examines the use of available resources by internal auditors (internal audit efficiency) in achieving those outcomes because of the ICS implemented within the organization.

Future studies could also benefit from employing interviews with senior management to obtain a more comprehensive understanding of the organization's ICS and their perceptions of internal auditing. This

qualitative approach is particularly encouraged to provide richer insights. Time constraints in responding to the questionnaires also contributed to delays in receiving feedback, highlighting a limitation that could impact the comprehensiveness and accuracy of the findings.

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