

Internal Audit Effectiveness: Effectiveness of Internal Control System and Management Support as a Moderating Variable

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Abstract

The purpose of this study is to investigate the direct effects of the effectiveness of the internal control system on the effectiveness of internal auditors in Malaysia's public sector. This study also examined how the independent and dependent variables connected with the moderating influence (management support). The researcher used the quantitative approach to address issues on the relationships of the quantifiable variables to explain, forecast, and control a phenomenon. The quantitative research method employed questionnaires with 30 items to measure the effectiveness of internal audits. The data were collected through questionnaires. This research finding was based on a survey of 111 internal auditors working for Malaysian federal statutory bodies. According to the findings, significant relationships exist between the internal control system and the internal audit's effectiveness. Unfortunately, there is no correlation between the effectiveness of the internal control system and how well management supports it and the internal audit's effectiveness. This research may result in a new understanding of internal audit effectiveness, specifically in the Malaysian public sector.

Keywords: Internal audit effectiveness, internal auditor, internal control system, management support.

1. Introduction

In the past, the internal audit was meant to protect an organisation's assets and help to produce trustworthy accounting data for decision-making (Ebaid, 2011). The main objectives were the organisation's accounting and financial reporting system integrity evaluation and internal reporting of the review's findings (Pooe et al., 2022). In early 1946, internal audit became a part of the strategic function in management's decision-making, especially when synchronising the organisation's performance with its objectives. This has shown that the requests for internal auditors to be more proactive in their role, specifically in aiding the management team in the management risk of governance due to the complexity of the corporate environment (Mihret et al., 2010; Spira & Page, 2003). Additionally, there is a

growing understanding and awareness of the internal audit value they may contribute to the organisations by enhancing their performance and efficiency (Institute of Internal Auditors, 2010; Mihret et al., 2010).

The practical and efficient execution of government responsibilities is one of the critical goals that must be attained, particularly as public authorities combat the social and economic repercussions of COVID-19 (Postula et al., 2020). According to Arena and Azzone (2007), effectiveness is the capacity to produce desirable results consistent with the intended outcome. According to this study, "internal audit effectiveness" is defined as "the compliance to the established objectives as well as the function's role in assisting the corporate governance parties by successfully fulfilling their responsibilities" (Turetken et al., 2019). Internal auditing's primary goal with regard to public sector organisations is to help them achieve their goals systematically (Shamsuddin et al., 2014). This goal can be achieved by enhancing the efficiency of the control and governance process (Hermanson & Rittenberg, 2003).

For internal audit to have a more outstanding profile in the public, private, and not-for-profit sectors in terms of their assessment and understanding of how effectively risks are managed within the organisation, an organisation must operate in a complex way (Institute of Internal Audit, 2015). By playing effective and efficient roles in promoting good governance in public funds, audit services may help an organisation have better financial management in the public service (Baharuddin et al., 2014). IIA (2015) explained the internal audit activities, including identifying risks, assessing controls, counselling managers at various levels, inspecting operations, verifying information, and interacting with other assurance providers. According to the Institute of Internal Audit (2021), the internal audit department should recruit competent, skilled, and experienced individuals who can work by the Code of Ethics and International Standards to have a successful internal audit mandate.

The Malaysian Auditor General has highlighted the importance of the internal audit function, whose duties include keeping track of and looking into ongoing projects as well as assisting government agencies in achieving their goals in a way that is ethically, economically, and effectively (Mohd Yusof et al., 2016). This results from the problems highlighted in the Auditor General's Report (LKAN), which resulted in millions of Ringgit Malaysia's public funds being lost. For instance, a large number of frauds and scandals in the Malaysian public sector, including the National Feedlot Corporation's Scandal (2014), the Scorpene Submarine Scandal (2002), and the Bank Negara Malaysia Forex Scandal (1992), demonstrate that the internal audit function has not yet succeeded in its goal.

According to Al-Zeaud (2012) and Gramling, Maletta, Schneider, and Church (2004), the level of competence and independence of the internal auditors and the management's commitment to the job determine how effective the internal audit function is. In order to fully support the internal audit role, management teams must encourage internal auditors to perform independently within their businesses (Pelser et al., 2020). On the other hand, it is impossible to disregard the expertise of internal auditors. Internal auditors should develop their professional skills through professional training and development. According to Gong, Li, Lin, and Wu (2016), enhancing internal audit competency and improving internal auditing effectiveness can be accomplished through joining membership in professional auditors' and accounting associations.

The relationship between the effectiveness of the internal control system and internal audit effectiveness still lacks research in the Malaysian Public Sector context. Therefore, this

study aims to investigate the possible link between the effectiveness of the internal control system and management support (moderating effect) on internal audit effectiveness. This study may provide further understanding of this research field, particularly in the Malaysian public sector.

2. Literature Review and Hypotheses Development

2.1 Internal Audit Effectiveness

Some academic studies have paid much attention to internal audit effectiveness and have taken it seriously (Tahajuddin & Kertali, 2018). To increase performance in the public sector, the internal audit function's effectiveness is crucial (Coetzee & Erasmus, 2017). The ability of the internal auditor to identify any flaws and make them permanent may help the public sector function better. The extent to which a set of objectives is completed is implied by the term "effectiveness" (Institute of Internal Auditors, 2016). In this context, internal audit effectiveness is the degree to which the internal audit function accomplishes its predetermined goals (Roussy et al., 2020). Although effectiveness and efficiency have different literal meanings, they are frequently used interchangeably. Bednarek (2018) states that effectiveness is far more crucial than efficiency. The researcher viewed that it is insignificant to have an efficient audit function in the absence of a practical audit function.

According to the Institute of Internal Auditors, 2010 internal audit effectiveness is the extent to which predetermined goals are met. Effective internal auditing can be accomplished through Core Principles, according to the Institute of Internal Audit (2015), where these principles must be present and functioning correctly. The Core Principles are: demonstrates integrity; competence and due professional care; independence; strategies oriented, organisational objectives and risks; sufficient resources; exhibit quality and continual improvement; effectively communicates; provides risk-based assurance; is perceptive, proactive, and future-focused; contributes to organisational improvement. Any of the Core Principles must be attained for an internal audit operation to be regarded as effective in carrying out an internal audit mission.

According to Cohen and Sayag (2010), there are two fundamental approaches on which the idea of internal audit effectiveness is built. The first approach emphasised how well the audit aligned with a set of global standards developed from internal auditors' traits (White, 1976). The Institute of Internal Auditors (2016) highlighted this method by outlining 19 attribute standards that refer to the characteristics of both persons and organisations conducting internal audits. The criteria include competence, objectivity and independence, internal evaluation, and ongoing professional development. The second approach holds that management assessments of the internal audit function determine how effective an internal audit is. Albrecht et al. (1988) believed that the success of any internal audit function can only be measured against the stakeholders' expectations.

It is crucial to have precise, practical, and straightforward indicators that can assist organisations in understanding the factors that influence internal audit quality to assess the effectiveness of internal audits (Institute of Internal Auditors, 2016). The quality of the work performed by the internal auditor, the additional value provided by internal auditing, and the auditees' evaluations are the three dimensions that Cohen and Sayag (2010) identified as the 37 items of the internal auditing effectiveness scale. These scales were deemed suitable and might be applied as the foundation for scales that can be replicated in later studies. In contrast, Alzeban and Gwilliam (2014) identified 47 items to pinpoint the key elements that can influence the success of internal audits. They concluded that management support

towards the internal audit function was the key factor from the perspective of both management and internal auditors.

2.1 Effectiveness of Internal Control System

The definition of accountability in the public sector has changed over time (Ter Bogt, 2008). It is no longer just about disclosing information to follow laws and processes. It also includes taking accountability to stakeholders for how public resources are allocated and used. Accordingly, the government must keep an eye on things and put in place the necessary safeguards to stop fraud, carelessness, and waste and to guarantee the achievement of the organisation's goals. As the accountability component was the focus of the internal control system, its application within the public sector is always essential (Aziz et al., 2015). In line with this, governments are responsible for monitoring activities and implementing necessary controls to prevent fraud, negligence, and wastage and ensure the organisation's objectives are achieved.

According to Arnold and Sutton (2001), "internal control" in bookkeeping refers to a procedure to help an organisation achieve specific goals. The company's structure, work, and authority mandate and individuals and administration data structures influence it. According to Bowrin (2004), a "system" refers to a group of coordinated, interconnected elements that work together to achieve a common goal. These elements are also key to an organisation's governance structure. By encouraging responsibility, openness, obligations, and reasonableness toward all stakeholders, this structure is expected to manage and control a company's operations. According to Karagiorgos, Drogalas, and Giovanis (2011), the effectiveness of an internal control system focuses on five factors, including the control environment, risk assessment, activity control, data and communication, and monitoring. If these five elements work together cohesively the management can control the organisation's systems and procedures, and the internal control system is said to be effective. Aziz, Said, and Alam (2015) warn that failing to establish a strong and trustworthy system could harm the organisation in many ways and quickly highlight the risks associated with the efforts to promote accountability inside public institutions.

Much research has been done about the effect of internal control systems on the effectiveness of internal audits. For instance, Karagiorgos et al. (2011) and Badara and Saidin (2014) researched to examine the impact of internal control systems on the effectiveness of internal audit, and the findings of their study indicate that the five COSO (Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring) components of internal control systems are related to the effectiveness of internal audit. In any event, because they do not use specific methods to guarantee the success of the internal audit mandate, these outcomes are of an experimental character. Another study by Sawalqa dan Qtish (2012) assesses the relationship between a few elements, such as risk assessment, environmental control, and control activities, about the suitability of an audit program. The study's findings showed that only one of the three commonly utilised internal control system components—risk assessment—contributes considerably to a successful audit program. In contrast, the other two show no correlation.

In order to increase the effectiveness of internal audits, Badara and Siti (2013) thought that the public sector needed to have suitable internal control systems. The research only takes an exploratory approach at the local government level when looking at the association between effective internal control systems and effective internal audits. So, they promoted the idea that future researchers should support needs using empirical evidence. According to

the most recent research by Hassan, Rahmat, and Mohamed (2016), Malaysia's public sector internal audit can become more effective with support management and internal control systems. Their conclusions showed that management assistance is crucial in improving the relationship between the efficiency of internal audits and the efficiency of the internal control system. Their study incorporated the items used to assess the variables from Karagiorgos et al. (2011) and Sawalqa dan Qtish (2012), which used adapted versions of the INTOSAI (2004) Guidelines on Internal Control Standards for the Public Sector.

Theoretically, contingency theory can be used to explain how well internal control systems and internal audits work. Contingency theory is a theory of behaviour, according to Chenhall (2003), and its factors include the environment, technology, size, organisational structure, strategy, and culture. Hassan, Rahmat, and Mohamed (2016) contend that an organisation's internal control system's structure will impact its performance. The internal control system's effectiveness may impact the internal audit's performance. An example of an organisational structure variable in this context is the effectiveness of the internal control system, which consists of five components (Hassan et al., 2016). As a result, the effectiveness of the internal control system is a contingent variable that can improve the performance of the internal audit in terms of its effectiveness. Thus, this research reveals the following relationship between the effectiveness of the internal control system and the effectiveness of internal audit:

Hypothesis 1 (H1): There is a positive relationship between the effectiveness of the internal control system and the internal audit effectiveness in the Malaysian Public Sector.

2.3 Management Support (Moderating Variable)

According to Hassan, Rahmat, and Mohamed (2016), management team support appears to positively influence the relationship between the competency and independence of internal auditors and the effectiveness of the internal control system towards internal audit effectiveness. Management must provide sufficient support for the internal auditor to perform their job well. Without the management team's assistance, the internal audit team's efforts will be in vain. According to some studies, the internal audit process is likely a time-consuming failure and a waste of money without management support and consent (Ta & Doan, 2022). Therefore, the management team must communicate effectively with the internal audit team. In order to ensure that internal audit activities are successful, the role of internal auditing relies on managerial support. The managerial team's reaction to the audit's findings is also crucial as it might affect how well the internal audit division operates in the Malaysian public sector (Noor Nizah, 2012 quoted in Hassan et al., 2016).

In order to create a favourable environment for the organisation's activities and the successful completion of the internal audit mandate, the internal audit effectiveness depends on the unwavering assistance along with the dedication of organisational managers as well as the attitude of the board of directors towards the work of the internal auditors (Pelser et al., 2020). The Institute of Internal Audit (2017) proposed that the chief audit executive periodically report to senior management and the board on the internal audit activity's purpose, authority, responsibility, and performance according to its plan and compliance with the Code of Ethics and the Standards. In other words, the effectiveness of an internal audit can be achieved when there is action taken from senior management on the recommendations provided by the internal auditors (Hassan et al., 2016). However, findings by Alzeban and Sawan (2013) revealed that the main problems faced in achieving internal

audit effectiveness in the public sector are due to a lack of qualified internal audit staff, and internal audit does not receive adequate support from top management.

Several academicians and practitioners contend that the Board of Directors and senior management must assist internal auditors in order for them to carry out their tasks and perform their duties (Joshi, 2021). Internal auditing is successful when it has support from top management (Ta & Doan, 2022; Singh et al., 2021; Joshi, 2021; Abdullah & Mustafa, 2020). In order to strengthen the connection between the effectiveness of internal control systems and internal audit effectiveness, Hassan et al. (2016) contend that management assistance is essential. Abdullah and Mustafa (2020) concluded that management assistance and internal audit competence are the key elements impacting internal audit effectiveness. However, the internal auditor's independence has no relationship with the internal audit effectiveness. Interestingly, Shamki and Alhajri's (2017) research found that management response had little impact on the effectiveness of internal audits. Unanticipated results may have occurred as a result of the top management paying greater attention to outside audit parties than to those from the internal audit department,

Internal auditors generally must assess the efficiency of the organisation's internal control system by performing specific audit processes and providing judgments on accomplishing the organisation's goals (Aikins, 2011; Cosmin, 2011). In order to conduct audits more effectively and efficiently, internal audits must fully comprehend the internal control system established inside the firm (Hassan et al., 2016). Therefore, management's way of cooperating with auditors during internal control system monitoring activities is a situational factor that might influence the relationship between the internal control system's effectiveness and the internal audit's effectiveness. Besides, by gathering data on implementation and performance to spot mistakes or inefficiencies, the internal audit is critical in assessing internal controls' efficiency to give correct information (Spira & Page, 2003). The internal audit looks for system controls intended to stop and reveal abnormalities that might result in bad decisions (Alkebsi & Aziz, 2017). Therefore, the internal audit may significantly contribute to the company's hazard monitoring and discovering potential areas for improving risk management procedures. Moreover, the internal auditors can assist management in its attempts to enhance the internal control system by providing consulting services that help to build solid risk management procedures. In light of the preceding context, the following hypothesis is formulated:

Hypothesis 2 (H2): Management support moderates the relationship between the internal control system's effectiveness and internal audit effectiveness at the Malaysian Public Sector.

3. Theoretical and Conceptual Framework

This research will use contingency theory to clarify the interconnection between independent, moderating, and dependent variables. Figure 1 below summarises the conceptual framework. Research on internal control systems reveals the slightest concern regarding internal audit effectiveness in the Malaysian public sector. Although this factor has been the subject of numerous studies in the Malaysian context, Hassan et al. (2016) limited their investigation to the local government level and only considered the internal auditor's perception. As there is still a lack of study in this research field, this study will try to fill in that gap.

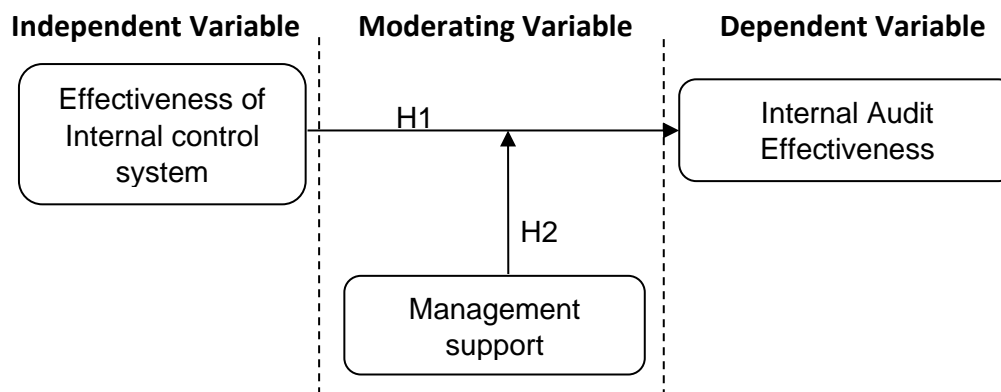


Figure 1 Conceptual Framework (Source: Prepared by the author)

According to contingency theory, the internal control system's structure will impact how well the organisation performs. This idea can be applied to the effectiveness of internal control systems, impacting how well the internal audits perform. This can be seen through the organisational departments' efforts to improve the organisational performance (internal audit effectiveness). According to Chenhall (2003), the variables of contingency theory are the environment, technology, size, organisational structure, strategy, and culture. In relation to this study, an organisational structure variable is the effectiveness of the internal control system, which has five components (control environment, risk assessment, activities control, information and communication, as well as monitoring). Organisational structure variables in this sense include the five components that make up a successful internal control system (Hassan, Rahmat, & Mohamed, 2016). Therefore, the effectiveness of internal control systems is a contingent variable that can enhance internal audit performance in terms of internal audit effectiveness.

Contingency theory also contributes to identifying complex relationships between variables (for instance; examining the effects of mediator and moderator variables) (Heo & Han, 2003). Management support is believed to impact the link between the internal control system effectiveness and the internal audit effectiveness. As a result, management's commitment to engage with internal auditors is a contingent factor that influences internal audit effectiveness.

4. Research Methodology

To control variables and evaluate particular hypotheses, a quantitative research methodology should be founded on objectivism and conform to the post-positivist worldview (Khanal, 2013). The logical qualities of data are the main emphasis of quantitative research, and numbers and statistics are used to represent peoples' opinions (Creswell, 2021). This technique can be applied when the researcher wants to ascertain the proportion of individuals who support a suggested change in goods or services and how strongly they hold that position. Quantitative research typically generates enormous amounts of numerical data, which may be used for statistical analysis (Almalki, 2016).

Quantitative research designs benefit from organised procedures while gathering the data. The best examples of these techniques are questionnaires and surveys, in which the respondents are given a set of questions and must select one option from a pre-determined selection of responses (Creswell & Clark 2017). Using surveys and questionnaires makes it

easier to quantify replies by counting the number of times participants chose particular multiple-choice answers (Bryman & Bell 2015). In order to guarantee that the results of quantitative research are statistically relevant, additional persons are often involved.

This study employed a cross-sectional survey. Using a cross-sectional survey, data can be collected at one time, not over time like longitudinal (Creswell, 2009). According to Creswell (2009), this type of survey includes self-administered questionnaires, interviews, structured record reviews, and structured observations. Therefore, this research will use self-administered questionnaires as it allows participants to think more about the questions, is perceived as more anonymous, is a rapid data collection technique, and provides the lowest cost option (Cooper & Schindler, 2006). Besides, this method is the most frequently used by previous researchers such as Pelser, Mensah, and Ngwenya (2020); Rudhani, Vokshi, and Hashani (2017); and Coetzee and Erasmus (2017) as it is enable the researcher to gain the first-hand information and also allow the respondent to participate anonymously.

5. Analysis of Results

5.1 Reliability Analysis

The reliability analysis is crucial for reflecting the overall dependability of the components that the questionnaire is measuring and also crucial for analyzing the consistency of the Likert-type scale. The most widely used scale reliability indicator for reliability analysis is Cronbach's Alpha (α) (Piaw, 2022).

According to Table 1, Cronbach's Alpha (α) values ranged between 0.839 and 0.950 for each assessed item. It shows that all of the measurement items were acceptable. According to Piaw (2022), the items are deemed acceptable if the Cronbach's Alpha (α) values range between 0.80 and 0.95. In other words, the data analysis was based on the responses derived from all of the variables employed in this study.

Table 1 Reliability Analysis

	Reliability Statistics	
	Cronbach's Alpha	N of Items
Effectiveness of Internal Control System (ICSYS)	0.950	10
Management Support for Internal Auditors (MNGSUP)	0.931	10
Internal Audit Effectiveness (IAE)	0.924	10

5.2 Analysis of Regression Model

There were two stages of testing involved in regression analysis. Multiple linear regression analysis was performed in the first stage without any moderating effect. The second stage involves moderated regression analysis, including the independent and moderating effect interaction.

5.2.1 Multiple Linear Regression Analysis

According to the models, the dependent variable's variation level was determined using the Adjusted R squared value. Adjusted R squared value needs to be reported as all predictors were significant (Piaw, 2022). Based on Table 2 below, the result shows that the Adjusted R squared amounted to 0.581 where the changes influence changes of 58.1% in Internal Audit Effectiveness (IAE) in Predictors Variables (ICSYS). Other factors outside the model's scope were responsible for the remaining 42%.

Table 2 Model Summary (Multiple Linear Regression Analysis)

Model Summary ^b					
Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	0.769 ^a	0.592	0.581	0.35946	1.853

a. Predictors: (Constant), ICSYS

b. Dependent Variable: IAE

Based on Table 3, the findings demonstrate that the model is significant by the values of F-statistics ($P = .000$) and $F = 51.770$, indicating that there was a strong relationship between the predictors and the results of the regression variables and that the model is best fit to estimate the effectiveness of internal audits in the public sector.

Table 3 ANOVA (Multiple Linear Regression Analysis)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.068	3	6.689	51.770	0.000 ^b
	Residual	13.826	107	0.129		
	Total	33.894	110			

a. Dependent Variable: IAE

b. Predictors: (Constant), ICSYS

The beta sign of ICSYS demonstrates the positive influence of the predicted dependent variable as shown in Table 4 below. That implies that any rise in the independent variables will increase the dependent variable. In other words, the researcher's proposed hypothesis H1 were acceptable since they demonstrated a positive link with the dependent variables the level of confidence at ($P < 0.05$). This suggests that the Malaysian Public Sector's internal audit function should focus more on the ICSYS since it is a significant predictor of IAE.

Table 5 Coefficients (Multiple Linear Regression Analysis)

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.666	0.295		2.259	0.026
	ICSYS	0.286	0.086	0.307	3.335	0.001

a. Dependent Variable: IAE

5.2.2 Moderated Regression Analysis

The outcomes of the moderated regression analysis revealed which interactions in the models were significant predictors of internal audit effectiveness. The interaction refers to the relationship between independent variables and the moderating effect. According to the models, the level of variation in the interactions (predictors) was determined using the Adjusted R-squared value. Based on Table 5 below, the result shows that the Adjusted R squared amounted to 0.611 where the changes influence changes of 61.1% in Internal Audit Effectiveness (IAE) in Predictors Variables (MNGSUP*ICSYS). Other factors outside the scope of the model were responsible for the remaining 39%.

Table 5 Model Summary (Moderated Regression Analysis)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.788 ^a	0.622	0.611	0.34620

a. Predictors: (Constant), MNGSUP*ICSYS

b. Dependent Variable: IAE

According to Table 6, the findings demonstrate the model's significance by the values of F-statistics ($P = .000$) and $F = 58.599$, indicating that there is a strong relationship between the predictors and the results of the regression variables and that the model is at its best fit to predict the effectiveness of internal audits in the Malaysian public sector.

Table 6 ANOVA (Moderated Regression Analysis)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.070	3	7.023	58.599	.000 ^b
	Residual	12.824	107	0.120		
	Total	33.894	110			

a. Dependent Variable: IAE

b. Predictors: (Constant), MNGSUP*ICSYS

The beta sign of the overall interactions, as shown in Table 7 below, indicates the positive influence of the predicted dependent variable. That is to say, any increase in the interaction between MNGSUP and ICSYS will increase the dependent variable (IAE) for instance. However, MNGSUP*ICSYS does not substantially contribute to the IAE as the statistical significance of the independent variable over the dependent variable is more than a 5% level of significance ($P = 0.171$). In other words, the researcher's proposed hypothesis H2 was rejected.

Table 7 Coefficients (Moderated Regression Analysis)

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.469	0.141		17.451	0.000
	MNGSUP*ICSYS	0.030	0.021	0.236	1.380	0.171

a. Dependent Variable: IAE

6. Conclusions

The findings from answered questionnaires supported the hypotheses that the internal control system's effectiveness significantly influenced the internal audit's effectiveness. On the other hand, there is no interaction of management support on the effectiveness of the internal control system. Multiple linear regression and moderated regression analyses were used to evaluate six hypotheses regarding the factors that influenced the internal audit effectiveness. Thus, the findings support the proposed hypothesis 1 and rejected hypothesis 2.

The results of this study demonstrate the significant role of the internal audit function in the public sector, particularly in ensuring the effectiveness of financial management. The internal audit functions can promote better governance, eventually benefiting corporate governance parties (for instance; the board of directors and management team). However, given the recent issues in the Malaysian Public Sector which involve a considerable amount of public money losses give raised to the need to have a practical internal audit function. Therefore, this research intends to look into factors which may impact the internal audit effectiveness, particularly in the Malaysian Public Sector.

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