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Siti Nur Farhanah binti Kifflee, Mohd Abdullah Jusoh

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Internal Audit Effectiveness: A Pilot Study Analysis at Malaysian Public Sector

Siti Nur Farhanah binti Kifflee, Mohd Abdullah Jusoh

Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Tanjong Malim,
Perak.

Abstract

The effectiveness of the internal audit function is essential to improve the performance of public sector by the way of the internal auditor's ability to detect and correct any defects and remain corrected. Thereby, this research aims is to examine the direct relations effects of competence of internal auditor, independence of internal auditor, and the effectiveness of internal control system towards the effectiveness of internal auditor in Malaysian Public Sector namely Malaysian Federal Statutory Bodies (MFSB). In addition, this study employed moderating variable (management support) to test the relationship between independent variables and dependent variable. The researcher adopted quantitative research method. This research paper was based on the pilot test that being conducted on 30 respondents where the questionnaires were distributed via respondent's electronic mail. The research findings revealed that the independence of internal auditor is the most important determinants of internal audit effectiveness. Besides, the interaction between management support and independence of internal auditor is also one of the important determinants of internal audit effectiveness in Malaysian Public Sector. As this research only employed a small number of respondent, further researcher should employed more respondent in their analysis to generate more reliable result.

Keywords: Internal Audit Effectiveness, Competence, Independence, Internal Control System, Management Support.

Introduction

Internal audit can be defined as an organizations and the world they operate in become more complex, so that internal audit attain a higher profile in the public, private and not-for-profit sectors for the evaluations and understanding they provide about how well risks are being managed within the organization (Chartered Institute of Internal Audit [IIA], 2015). Audit services are able to assist an organization for the success of better financial management in public service by playing the effective and efficient roles to promote good governance in managing public money (Baharud-din et al., 2014). Further, Malaysian Auditor General had emphasized the role of internal audit function where their responsibilities includes monitors and examines the ongoing projects and also accommodates public sector function in achieving their objectives effectively, efficiently, economically and ethically (Yusof et al., 2016). This is due to the issues depicted in the Auditor General's Report (LKAN) which

cause losses of billions of Ringgit Malaysia of public money. For instance, numerous frauds and scandals in the Malaysian public sector such as Bank Negara Malaysia Forex Scandal (1992), Scorpene Submarine Scandal (2002) and the National Feedlot Corporation's Scandal (2014) shows that the internal audit function has not yet achieved its objective (Shamsuddin et al., 2014).

Effective and efficient completion of public service tasks is the important objectives for the government to accomplish especially at the time when public authorities counteract the social and economic consequences of COVID-19 (Postula et al., 2020). According to Arena and Azzone (2007), effectiveness refers as the capacity to obtain results that is consistent with target objective. In line with this research, effectiveness of the internal audit function refers to the compliance to the established objectives and the function's role in assisting other corporate governance parties in terms of fulfilling their responsibilities successfully (Turetken et al., 2019). Based on Al-Zeaud (2012); Gramling, Maletta, Schneider and Church (2004), the effectiveness of internal audit function depends on management support and commitment, competency and level of independency of the internal auditors. Therefore, management team needs to express their full support for the internal auditing function by encouraging the independence of the internal auditors in their organizations (Pelser et al., 2020). Besides, internal auditors are encouraged to enhance their competencies through professional training and development or by joining membership of relevant professional bodies such as professional auditors and accounting associations (Gong et al., 2016).

In context of Malaysian Federal Statutory Bodies (MFSB), the relationship between internal audit competency and independency as well as the effectiveness of internal control system towards internal audit effectiveness which moderated by management support has not yet been explored. Therefore, this research will be discussing these four factors that may influence the internal audit effectiveness. The relationship between these factors and internal audit effectiveness are set out in Figure 1.1 Appendix 1. This research may contribute to the new knowledge on internal audit effectiveness especially in Malaysian Public Sector.

Internal Audit Effectiveness

The concept of internal audit effectiveness has received flourish attention in the recent years and has been taken seriously by some of the academic studies (Tahajuddin & Kertali, 2018). The effectiveness of the internal audit function is essential to improve performance in the public sector (Coetzee & Erasmus, 2017). According to The Institute of Internal Auditors [IIA] (2016), the words effectiveness implies to the extent which the set of objectives are achieved. The concept of effectiveness and efficiency are often used interchangeably, but literally hold different meaning. Bednarek (2018) believed that effectiveness is more important than efficiency because if internal audit is not effective, it is insignificant regardless of how efficient the audit function is. In general, internal audit effectiveness is defined as a degree which includes quality to which established objectives are achieved (The Institute of Internal Auditors [IIA], 2010). According to Chartered Institute of Internal Audit (2015), effective internal auditing may be achieved through Core Principles where these principles must be present and working well. Some of the Core Principles includes demonstrates integrity; competence, and due professional care; independent; and adequately resourced. Failure to achieve any of the Core Principles implies that an internal audit activity is deemed ineffective in achieving internal audit's mission.

In order to measure the effectiveness of internal audit, there is a need for accurate, realistic and simple indicators that would help organizations to understand the drivers of the internal audit quality (IIA, 2016). Cohen and Sayag (2010) identified 37 items of internal auditing effectiveness scale and highlight the three dimensions that encompass the concept of internal audit effectiveness which includes the quality of the internal auditor's work, the evaluations of the auditees and the added contribution of internal auditing. The scales developed were found to be acceptable and as such they can serve as the basis for scales that will replicate them in future research. Whereas, Alzeban and Gwilliam (2014) identified 47 items to assess the main factors influencing internal audit effectiveness. They concluded that management support for the internal audit function was the main driver in terms of ensuring the perceived effectiveness of the internal audit function from the perspective of both management and internal auditors. To add with, management support is an important construct via its links to issues related to hiring qualified staff, providing sufficient resources, enhancing the relationship with external auditors, and having an independent internal audit department.

Majority of the previous researchers highlight the importance of independence in measuring the effectiveness of internal audit function. Most of their finding indicates positive relationship in research by (Pelser et al., 2020; Tahajuddin and Kertali, 2018; Rudhanian et al., 2017; Baharud-din et al., 2014; Alzeban and Gwilliam, 2014; Cohen and Sayag, 2010). Surprisingly, a study by Abdullah and Mustafa (2020) shows negative correlation between independence and effectiveness of internal audit. The difference in their findings might be that the internal auditors may not perceive independence as a factor that contributes to the effectiveness of internal audit using some measurements. Likewise, research on the competence of internal auditors shows inconclusive findings by (Cohen and Sayag, 2010). Their findings concluded that the competence of internal auditors (viewed as professional proficiency) shows no relation towards the internal audit effectiveness. Due to the inconclusive findings, it leads to a research on those factors but focusing at Malaysian Federal Statutory Bodies (MFSB). This research ought to identify whether the internal auditors, audit director, accountant, and finance director in MFSB viewed those as factors that may influence the internal audit effectiveness or not. As there is a little research that employed moderating effect in context of internal audit effectiveness, this research seek to fill in this gap by highlighting management support to moderate the relationship between independent variables and dependent variable.

This brief review shows the need for a more comprehensive study of the issue of internal audit effectiveness. The papers noted above may deal with the issue qualitatively Shamsuddin et al (2014); Mihret & Yismaw (2007), quantitatively (Pelser et al., 2020; Tahajuddin & Kertali, 2018; Coetzee & Erasmus, 2017; Ahmad et al., 2009; Jachi & Yona, 2019). Considering that the findings of internal auditing effectiveness still remain inconclusive based on some factors, this study attempts to stimulate more interest in this research area. The findings of this research will contribute to the effectiveness and functioning of internal audit in Malaysian Public Sector specifically in Malaysian Federal Statutory Bodies (MFSB). This study will be a springboard from which to generate future research on internal audit, and will suggest directions for such studies.

Formulating the Hypotheses

Competence of Internal Auditor

Competence of internal auditor is viewed crucial to ensure an organization's full capability. Therefore, the internal auditors need to equip themselves with sufficient knowledge and skills in order to perform their duties and responsibilities effectively. Weakness in staffing can lead to mismanagement, error and abuse, which can negate the effect of other controls (Hailemariam, 2014). Based on the past literature, this factor is one of the most commonly investigated among the researchers (Pelser et al., 2020; Abdullah & Mustafa, 2020; Noor & Mansor, 2019). In spite of many researches focusing in this factor, the effects of competence on internal audit effectiveness are still inconclusive (Cohen & Sayag, 2010). Competence refers to the proficiency and professional care of the internal audit department, as performed by the internal auditor (Turetken et al., 2019). IIA (2017) emphasized that internal auditors must possess the knowledge, skills, and other competencies needed in order to perform their individual responsibility, which is referred as proficiency.

Most of the previous researchers support the fact that competence of internal auditor has a positive relationship with the internal audit effectiveness. Based on the study by Abdullah and Mustafa (2020); Jachi and Yona (2019); Rudhani et al (2017); Alzeban and Gwilliam (2014) it shows that there is a positive correlation between internal audit effectiveness and competence of internal audit staff. The study findings established the existence of a statistically positive relationship between professional competency of an internal audit function represented by internal auditors' qualifications and experience and availability of training opportunities and transparency and accountability (Jachi & Yona, 2019). In Malaysian context, Baharud-din, Shokiyah, and Ibrahim (2014) found that there are positive correlation between auditor competency, independence/objectivity of internal audit and management support to the effectiveness of internal audit. They concluded that the internal audit office constantly face the problem of low technical staff proficiency and high staff turnover (Mihret & Yismaw, 2007), which would limit its capacity to provide effective service to management. Surprisingly, Cohen and Sayag (2010) indicates that lack of a relationship between internal audit effectiveness, career and advancement, and professional proficiency shows that the effectiveness of internal audit depends more on organizational/managerial characteristics than on the qualifications and work setting of the internal audit staff.

In theory context, competence of internal auditor can be explained through resource-based perspective as it emphasized on the importance of the internal organizational resources as a primary source of competitive advantage, organization performance and behavior (Barney, 1991). This theory is relevant in analyzing the influence of the tangible and intangible assets on the internal audit effectiveness. In this context, internal auditor competence which refers to human capital resources (training, experience, knowledge, intelligence, relationships, and insight of individual managers, expertise and skills of the workers) may lead to the effectiveness of internal audit function. Therefore, the following hypothesis is formulated:

H1: There is a positive relationship between the competences of internal auditors and the internal audit effectiveness in MFSB.

Independence of Internal Auditor

The assurance services given by the internal auditors in terms of their credibility and value derived from the independence of mind and independence in appearance (Stewart & Subramaniam, 2010). In the absence of independence, internal auditors can only become a part of management team (Joshi, 2021). Certain features and characteristics of an internal audit function has been highlighted such as independence, objectivity, contribute to added value of the organization, assist in achieving the organization objectives, works in systematic, disciplined approach, evaluates and improves the effectiveness of risk management, control and governance processes (IIA, 2016). Generally, independence is defined as a freedom from any conditions that may threaten the ability of the internal audit activity to carry out internal audit responsibilities in an unbiased manner (IIA, 2017). In accordance to IIA (2016), to maintain an appropriate level of independence by the internal auditors, adequate task rotation is considered necessary. Further, IIA (2017) proposed that the chief audit executive (CAE) need to have direct and unrestricted access to senior management and the board where this can be achieved by a dual reporting relationship in an effort to enhance the independence level of internal auditors. By doing this, it can ensure the reliability and objectivity of the auditor's work and provide assurance towards the stakeholders so that they can rely on the results and the report.

Most of the previous literature believed that independence of the internal audit organization has an effect on the effectiveness of internal audit (Pelser et al., 2020; Shohihah et al., 2018; Rudhani et al., 2017). According to Tahajuddin and Kertali (2018), their result of the hypotheses testing procedure on 119 respondents from internal auditors who are members of the Institute of Internal Auditors Malaysia (IIAM) revealed two different findings. The result of the first hypothesis indicated that there is a positive relationship between internal audit independence and internal audit effectiveness. Whereas, the result of second hypothesis indicates that internal audit objectivity have no relation towards the internal audit effectiveness. Similarly, Cohen and Sayag (2010) concluded that the organizational independence of the internal audit function was positively associated with the quality of internal audit function. This finding is also in line with the ISPPA standards (IIA, 2017) which consider internal audit independence as one of the main factors of the effectiveness of internal auditing. However, studies by Joshi (2021); Abdullah and Mustafa (2020) shows that independence of internal auditor has no impact on the effectiveness of internal audit. The difference in their findings could be a tendency among the respondents to underplay in responding or remain neutral on certain questions, because they may consider them either confidential or sensitive in nature (Joshi, 2021).

In theory perspective, resourced-based theory is considered relevant in explaining the relationship between independence and the effectiveness of internal audit. In order to maintain independence in executing their job, internal audit need to have a good formal reporting structure between chief audit executive (CAE) and senior management to avoid from giving bias opinion in regards to audit report. Barney (1991) stated that the resource-based theory emphasizes on organizational capital resources where it comprises a firm's formal reporting structure. Thus, by having a good formal reporting structure with CAE and senior management will improve the effectiveness of internal audit. Against this background, the following hypothesis is formulated:

H2: There is a positive relationship between the independence of the internal auditor and the internal audit effectiveness in MFSB.

Effectiveness of Internal Control System

In general, the term internal control in accounting context refers to a process affected by an organization's structure, work, and authority flows, people and management information systems, designed to help the organization to achieve specific objectives or goals (Arnold & Sutton, 2001). The word system refers to a set of interrelated elements integrated in order to reach the goals and also act as an integral component of the overall governance structure of an organization (Bowrin, 2004). According to Karagiorgos et al (2011), effective internal control system is subjected to five elements such as control environment, risk assessment, activities control, information and communication as well as monitoring. The internal control system is deemed effective if these five components function in an integrated manner and able to control systems and procedures adopted by the organization's management. Failing to establish a reliable and dependable system could harm the organization in many ways and easily expose the risks to the efforts of nurturing accountability in the public sector (Aziz et al., 2015).

Several studies have been conducted with relate to the impact of internal control system towards internal audit effectiveness. For instance, Karagiorgos et al (2011); Badara and Saidin (2014) conducted research to study the effect of internal control system on the effectiveness of internal audit and the results of their study show that the five components of internal control system (COSO) (control environment, risk assessment, control activities, information and communication and monitoring) are related to the effectiveness of internal audit. However, these results are only exploratory in nature as they do not use specific measures to indicate an improvement in the effectiveness of internal audit. Further, Badara and Siti (2014) examine the relationship between effective internal control system and internal audit effectiveness at local government level yet their study are only exploratory in nature at local government level. In the latest research, Hassan et al (2016) support the fact that the effectiveness of internal control system and support management can improves the effectiveness of public sector internal audit in Malaysia. Further, their findings also revealed that management support plays an important role in enhancing the relationship between the effectiveness of the internal control system and the effectiveness of internal audit.

Theoretically, the effectiveness of internal control system and effectiveness of internal audit can be explained through contingency theory. According to Chenhall (2003), contingency theory is a theory of behavior and its variables consist of environment, technology, size, organizational structure, strategy and culture. Hassan et al (2016) argue that the structure of organization's internal control system will affect the performance of the organization (internal audit performance). In this context, the effectiveness of internal control system consists of five components is an example of organizational structure variables. Therefore, the effectiveness of internal control system is a contingent variable that can improve the performance of internal audit. Thus, this study suggests that the relationship between the effectiveness of internal control system and the effectiveness of internal audit is as follows:

H3: There is a positive relationship between the effectiveness of internal control system and the internal audit effectiveness in MFSB.

Management Support for Internal Auditors (Moderating Variable)

Management support seems to have a positive effect on the relationship between the competence of internal auditor, independence of internal auditor, and internal control system towards the effectiveness of internal audit (Hassan et al., 2016). The internal auditor needs to have a strong support from management so that the internal auditor may execute their work effectively. Without support from management team, the internal auditor work will go in vein where management team supposed to communicate well with the internal audit team. Therefore, the internal audit function relies on the management support to ensure the success of internal audit activities. Besides, the response given by management team to audit findings is crucial as it may contribute to the effectiveness of the internal audit function in Malaysian public sector (Nizah, 2012; cited in Hassan et al., 2016).

Several researchers and practitioners argue that internal auditors need support from top management and Board of Directors to fulfill its responsibilities and execute its duties (Joshi, 2021). Singh et al (2021); Joshi (2021); Abdullah and Mustafa (2020); reported that internal auditing is effective when received supported from senior management. Hassan et al (2016) believed that management support plays an important role in enhancing the relationship between the effectiveness of internal control system and the effectiveness of internal audit. This statement is supported by Abdullah and Mustafa (2020) where they found that management support and competence of the internal audit as key drivers of internal audit effectiveness while independence of internal audit has no impact on internal audit effectiveness. Surprisingly, findings by Shamki and Alhajri (2017) revealed that management response has no influence on the internal audit effectiveness. The unexpected results might be because the senior managers focus more on findings of other audit parties than on that of internal audit department.

In order for internal auditor to function effectively, they need for adequate professional development training to enhance the knowledge and skills of the internal auditors. However, this can only be achieved if sufficient budget is allocated annually for such purpose where this budget is basically reviewed and approved by senior management (Endaya & Hanefah, 2016). An adequate internal audit budget for training programs strongly relies on the support from the senior management. Without their support, the internal auditor may not be competent enough to deal with audit matters. Thus, management support seems to have a positive impact on the relationship between competence and internal audit effectiveness where contingency theory is used to explain the relationship of moderating effect in this research. In this regard, contingency theory explains that management strategy is a contingent factor to organizational performance (Hassan, Rahmat & Mohamed, 2016). Against this background, the following hypothesis is formulated:

H4: The relationship between competence of internal auditor and internal audit effectiveness in MFSB is moderated by management support.

Although a number of findings indicate that there is a relationship between internal auditor's characteristics and internal audit effectiveness, it nevertheless depends on senior management support (Endaya & Hanefah, 2016). For example, senior management actions have a significant impact on the relationship between independence and internal audit effectiveness. When senior management does not interfere in internal audit scope and allow unrestricted auditing work on them, the impact of independence on internal audit effectiveness is higher. In contrast, senior management interference or restriction in internal

audit scope has a negative impact. In other words, the management team needs to allow the internal auditor to examine audit issue without involvement of management interest. In line with that, the following hypothesis is formed:

H5: The relationship between independence of internal auditor and internal audit effectiveness in MFSB is moderated by management support.

In general, internal auditors are responsible to monitor the effectiveness of the organization's internal control system and then evaluate and carry out specific audit procedures so that conclusions on the achievement of the organization's objectives can be made (Aikins, 2011; Cosmin, 2011). Therefore, internal audit needs to adequately understand the internal control system developed in the organization and use that information to conduct audits more efficiently and effectively (Hassan et al., 2016). In line with this, management's strategy in cooperating with auditors during monitoring activities of internal control system is a contingent factor that affects the interaction on the relationship between the effectiveness of internal control system and internal audit effectiveness. Given the above background, the following hypothesis is formulated:

H6: The relationship between the effectiveness of internal control system and internal audit effectiveness in MFSB is moderated by management support.

Research Methodology

This research will employed quantitative research method as it provide a specific, well structured, tested for their validity and reliability, and can be distinctly defined and recognized (Kumar, 2011). Besides, the measurements are more rigid, structured, fixed and predetermined to ensure accuracy in measurement and classification. For this research purpose, data was collected through questionnaire which was administered during pilot study on 30 respondents. The target respondent to answer this questionnaire is the internal auditors, audit director, accountant, and finance director that at Malaysian Federal Statutory Bodies (MFSB).

This study used a questionnaire method which the questionnaires were adopted and modified from the prior author and literature review (Mihret & Yismaw, 2007; Arena & Azzone, 2009; Cohen & Sayag, 2010; Karagiorgos et al., 2011; Hailemariam, 2014; George et al., 2015; Misganaw, 2016; Dellai & Omri, 2016; Sisay, 2017; and Seif, 2017). The questionnaire is organized in two sections. The first part deals about respondent profile or general information. The general information section includes seven questions which are related with the gender, age, respondent's field of study, level of education, professional certification, occupation, and years of experience. The second part consists of 50 questions and is measured using 5-point likert scale. This part targeted to analyze research hypothesis in manageable, uniform and objective way. The questions are divided into five groups which were classified based on independent and dependent variables.

Measurement of Internal Audit Effectiveness

Effectiveness of the internal audit function refers to the compliance to the established objectives and the function's role in assisting other corporate governance parties in terms of fulfilling their responsibilities successfully (Turetken et al., 2019). To have an effective internal audit, the internal audit function should hired qualified, skilled and experienced people who can work in line with the Code of Ethics and the International Standards (Chartered Institute

of Internal Audit, 2021). In this research, the effectiveness of internal audit were measured based on 10 items where some of the item contains multiple questions. This study will be measuring the internal audit effectiveness based on the utilization of resource, compliance with policies and procedures, improve governance process, provide appropriate recommendation, assess organizational missions and objectives, review organization's operation, establishment of follow-up process, and evaluate potential fraud.

Measurement of Independent Variables

The independent variables were measured based on the 40 questions. These questions were spread across the four factors as set out below (majority of the sub-categories containing multiple questions)

- Competence of internal auditor was measured based on their skills, completed audit activity on time, using specific internal audit software, educational qualifications, professional qualifications, and work experience in the field of internal audit.
- Independence of internal auditor was measured based on their level of independence, reporting level, direct contact to the board and senior management, conflict of interest, interference, unrestricted access to all departments and employees.
- Effectiveness of internal control system was measured based on the integrity and ethical values, board and audit committee, management philosophy, organizational structure, process-level objectives, risk identification, policies and procedures, control activities in place, quality of information, effectiveness of communication, on-going monitoring, and separate evaluations.
- Management support for internal auditor (moderating variable) was measured based on the management's cooperation towards internal auditor's work, awareness of internal auditor roles/ needs/ basic resources, management support on training/ budgeting funds, corrective action by management team, management commitment to improve internal audit division.

Method of Analysis

This research employed multiple regression model to test the research hypothesis that being set earlier. Multiple regression model is able to identify changes in two or more factors that contribute to changes in a dependent variable (Piaw, 2022). In this context, this model is used to estimate the effects of identified factors (independent variables) on internal audit effectiveness (dependent variables) as well as the moderating variable (management support). This model is selected in reference with Hassan, Rahmat, and Mohamed (2016) with some inclusion of new items on it (independence of internal auditor, and competence of internal auditor).

Thus, the following model is formulated:

$$IAE = \beta_0 + \beta_1 IACOMP + \beta_2 IAIND + \beta_3 ICSYS + \beta_4 MNGSUP * IACOMP + \beta_5 MNGSUP * IAIND + \beta_6 MNGSUP * ICSYS + \varepsilon$$

Where:

- IAE = Internal Audit Effectiveness
- IACOMP = Competence of Internal Auditor
- IAIND = Independence of Internal Auditor
- ICSYS = Effectiveness of Internal Control System
- MNGSUP = Management Support (Moderating Variable)
- β_0 = Is a constant, represents the effectiveness of IA when every independent variables are zero
- ϵ = Error term

Results

Reliability Analysis

To measure the consistency of the questionnaire particularly the Likert-type scale, the reliability analysis is essential in reflecting the overall reliability of constructs that it is measuring. To carry out the reliability analysis, Cronbach’s Alpha (α) is the most common measure of scale reliability (Piaw, 2022).

Table 1.1
Reliability Statistics

	Reliability Statistics	
	Cronbach's Alpha	N of Items
Competence of Internal Auditor (IACOMP)	0.839	10
Independence of Internal Auditor (IAIND)	0.887	10
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

From Table 1.1 above, the value for Cronbach’s Alpha (α) for each measured item was greater than 0.65 and less than 0.96. It indicates that the instrument has a high reliability where all items that being used for measurement is acceptable. This is based on measurement by Piaw (2022). In other words, the responses generated from all of the variables used in this research were considered reliable for data analysis.

Descriptive Statistics

In order to test the normality of data, Skewness and Kurtosis test of normality were used. The data are considered normally distributed when the z-value is within the range of -1.96 and +1.96 (Kline, 2015). The z-value can be derived by dividing the Skewness and Kurtosis by their standard error. Based on the Table 1.2, the z-score for all of the variables falls within the range of -1.96 and +1.96. Therefore, it can be concluded that the data are normally distributed in this research.

Table 1.2
Descriptive Statistics

							Skewness		Kurtosis		z-score	
	N	Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Statistic	Std. Error	Statistic	Std. Error	Skewness	Kurtosis
IACOMP	30	3.00	4.70	3.7900	.47803	.093	.427	-.772	.833	.218	-.927	
IAIND	30	3.00	4.90	4.0033	.48953	-.052	.427	-.287	.833	-.122	-.345	
ICSYS	30	3.00	5.00	3.9700	.51805	.099	.427	-.075	.833	.232	-.090	
MNGSUP	30	2.80	5.00	3.8267	.57472	.121	.427	-.795	.833	.283	-.954	
IAE	30	3.00	5.00	4.1067	.51323	-.028	.427	.145	.833	-.066	.174	

Assessment of Multicollinearity

The aim of this test is to analyze whether the independent variables are correlated each other. This test is done by analyzing the value of tolerance and variance inflation factor (VIF). Table 1.3 below shows that there is no Multicollinearity between different variables as the value of Tolerance value above 0.10 and Variance Inflation Factor (VIF) below 10 (Adhista, 2015). Tolerance is a statistics used to indicate the variability of the specified independent variable that is not explained by the other independent variables in the model. Therefore, it can be concluded that this research data have an acceptable value of tolerance and VIF which indicates that all the variables have no Multicollinearity problems.

Table 1.3
Tolerance Value and Variance Inflation Factor (VIF)

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Internal Audit Competence (IACOMP)	.514	1.947
	Internal Audit Independence (IAIND)	.205	4.889
	Effectiveness of Internal Control System (ICSYS)	.237	4.219
	Management Support for Internal Auditor (MNGSUP) – Moderating Variable	.202	4.949

a. Dependent Variable: Internal Audit Effectiveness (IAE)

Table 1.4 below depicts the correlation between the independent variables, dependent variables and also with the moderating variable. The correlation analysis was utilized to reject or accept research hypothesis in previous audit research in addition to the regression analysis (Cohen and Sayag, 2010). The findings show significant positive correlations between the independent variables (IAIND, ICSYS, MNGSUP) towards dependent variable (IAE). There were strong correlations between the independent variables; IAIND ($r = 0.878$), ICSYS ($r = 0.761$) and MNGSUP ($r = 0.803$) towards dependent variable with ($P < 0.01$) level of significant. On

the other hand, the relationship between IACOMP (independent variable) and IAE (dependent variable) shows moderated positive correlation ($r = 0.539$).

Table 1.4
Pearson Correlations Matrix

	IACOMP	IAIND	ICSYS	MNGSUP	IAE
IACOMP	1	.693**	.607**	.632**	.539**
IAIND	.693**	1	.828**	.855**	.878**
ICSYS	.607**	.828**	1	.852**	.761**
MNGSUP	.632**	.855**	.852**	1	.803**
IAE	.539**	.878**	.761**	.803**	1

** Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

This regression analysis was carried out in two stages of testing. The first stage was Multiple Linear Regression Analysis which was carried out without any moderating variables. The second stage is Moderated Regression Analysis which is carried out with the interaction between the moderating variable and the independent variable.

Multiple Linear Regression Analysis

Based on Table 1.5, the result shows that the Adjusted R^2 amounted 0.785 where changes of 78.5% in Internal Audit Effectiveness is influenced by the changes in Predictors Variables (Effectiveness of Internal Control System, Internal Audit Competence, and Internal Audit Independence).

Table 1.5
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886 ^a	.785	.761	.25114

a. Predictors: (Constant), Effectiveness of Internal Control System, Internal Audit Competence, Internal Audit Independence

Based on Table 1.6, the results show the significance of the model by the value of F-statistics ($P = .000$) and $F = 31.705$ which implies that there were strong relationship between the predictors and the outcomes of the regression variables and are at best fit the model to predict the effectiveness of internal audits in the public sector.

Table 1.6

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.999	3	2.000	31.705	.000 ^b
	Residual	1.640	26	.063		
	Total	7.639	29			

a. Dependent Variable: Internal Audit Effectiveness

b. Predictors: (Constant), Effectiveness of Internal Control System, Internal Audit Competence, Internal Audit Independence

As shown in Table 1.7 below, beta sign of IAIND and ICSYS shows the positive effect of the predicting dependent variable, while IACOMP shows negative effect. That means, in the case of IAIND and ICSYS, any increase in the independent variables lead to increase in the dependent variable (IAE). In contrast, any increase in IACOMP leads to decrease in the IAE. In other words, hypotheses H2 and H3 that being proposed by the researcher was acceptable as they show positive relationship with the dependent variable, while H1 was not. But based on the statistical significances of the independent variable over the dependent variable at 5% level of significance, only one independent variable (IAIND) is significantly contributed for the IAE at (P < 0.05) level of confidence.

Table 1.7

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.530	.416		1.275	.213
	IACOMP	-.152	.136	-.142	-1.123	.272
	IAIND	.919	.188	.877	4.888	.000
	ICSYS	.120	.161	.121	.742	.465

a. Dependent Variable: Internal Audit Effectiveness

Thus, this implies the IAIND are the most important determinants of IAE in which the Malaysian Public Sector should give more emphasis in their internal audit function. On the other hand, the relationships of the remaining two independent variables (IACOMP and ICSYS) have not significantly contributed to the predicted dependent variable (IAE) as their P-value were greater than 0.05.

Moderated Regression Analysis

Based on Table 1.8, the result shows that the Adjusted R² amounted 0.766 where changes of 76.6% in Internal Audit Effectiveness is influenced by the changes in Predictors Variables (MNGSUP*ICSYS, MNGSUP*IACOMP, MNGSUP*IAIND).

Table 1.8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.875 ^a	.766	.739	.26212

a. Predictors: (Constant), MNGSUP*ICSYS, MNGSUP*IACOMP, MNGSUP*IAIND

Based on Table 1.9, the results show the significance of the model by the value of F-statistics (P =.000) and F = 28.391 which implies that there were strong relationship between the predictors and the outcomes of the regression variables and are at best fit the model to predict the effectiveness of internal audits in the public sector.

Table 1.9

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.852	3	1.951	28.391	.000 ^b
	Residual	1.786	26	.069		
	Total	7.639	29			

a. Dependent Variable: Internal Audit Effectiveness

b. Predictors: (Constant), MNGSUP*ICSYS, MNGSUP*IACOMP, MNGSUP*IAIND

As shown in Table 1.10 below, beta sign of MNGSUP*IAIND shows the positive effect of the predicting dependent variable, while MNGSUP*IACOMP and MNGSUP*ICSYS shows negative effect. That means, in the case of MNGSUP*IAIND, any increase in this interaction lead to increase in the dependent variable (IAE). In contrast, any increase in MNGSUP*IACOMP and MNGSUP*ICSYS leads to decrease in the IAE. In other words, hypothesis H5 that being proposed by the researcher was acceptable as they show positive relationship with the dependent variable, while H4 and H6 were not. Similarly, based on the statistical significances of the independent variable over the dependent variable at 5% level of significance, MNGSUP*IAIND is the only interaction that is significantly contributed for the IAE as their level of confidence is lower than 0.05.

Table 1.10

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.484	.201		12.330	.000
	MNGSUP* IACOMP	-.043	.033	-.305	-1.275	.213
	MNGSUP* IAIND	.155	.048	1.226	3.205	.004
	MNGSUP* ICSYS	-.011	.043	-.085	-.248	.806

a. Dependent Variable: Internal Audit Effectiveness

Thus, this implies the MNGSUP*IAIND is also the most important determinants of IAE in which the Malaysian Public Sector should give more emphasis in their internal audit function. On the other hand, the relationships of the remaining two interactions (MNGSUP*IACOMP and MNGSUP*ICSYS) have not significantly contributed to the predicted dependent variable (IAE) as their P-value were greater than 0.05.

Conclusions

The results of this study show significant positive correlations between the independent variables (IAIND, ICSYS, MNGSUP) towards dependent variable (IAE). On the other hand, the relationship between IACOMP (independent variable) and IAE (dependent variable) shows moderated positive correlation. This research revealed that the IAIND is the most important determinants of IAE in which the Malaysian Public Sector should give more emphasis in their internal audit function. However, the relationships of the remaining two independent variables (IACOMP and ICSYS) were not significantly contributed to the predicted dependent variable (IAE). Further, this study unveils the interaction between the moderating variable (MNGSUP) and the independent variable (IAIND) as the most important determinants of IAE in Malaysian Public Sector. On the other hand, the relationships of the remaining two interactions (MNGSUP*IACOMP and MNGSUP*ICSYS) have not significantly contributed to the predicted dependent variable (IAE).

To summarize, the internal audit function is crucial in public sector in order to ensure the success of financial management. The internal audit functions are able to promote better governance which will eventually serve the benefit of corporate governance parties (for instance; board of directors and management team). This research may contribute to a new knowledge in internal audit effectiveness in Malaysian Public Sector and also provide idea on the future study range to forthcoming researchers.

Limitation of Study and Recommendation for Further Studies

There are some challenges identified in this research. The first one is this research only rely on questionnaire-based. Therefore, further study may include secondary data in order to strengthen the outcome of the overall research. Besides, the measurement of the variables (dependent variable, independents variables and moderating variable), is established according to the perceptions of the internal auditors, accountants, audit director, and finance director which could present bias outcome. Therefore, better measurements to describe the variables can be obtained based on external auditor's perspectives which may be the research gap for future research. Other than that, this research was based on the pilot test analysis which could lead to inaccurate result. Thus, further researcher should employed more respondent in their analysis to generate more reliable result.

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Appendix 1

Figure 1.1 Conceptual Framework (Source: Prepared by the author)

