

SCOPE OF AUDIT AND EFFECTIVENESS OF PUBLIC SECTOR AUDIT IN MALAYSIA

Nor Raihana Asmar Mohd Noor*

Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA

T. Ramayah

*School of Management, Universiti Sains Malaysia (USM)
Department of Information Technology & Management, Daffodil International University,
Bangladesh (DIU)*

*Department of Management, Sunway University Business School (SUBS)
Azman Hashim International Business School, Universiti Teknologi Malaysia (UTM)
Applied Science Private University (ASU)
University Center for Research & Development (UCRD), Chandigarh University (CU)
Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu
(UMT)*

Syed Azlan Al Jaffree Syed Khadzil

Faculty of Entrepreneurship and Business, University Malaysia Kelantan

Nor Halida Haziaton Mohd Noor

Faculty of Business and Management, Universiti Teknologi MARA

Wan Yusrol Rizal Bin W. Yusof

Faculty of Business and Management, Universiti Teknologi MARA

ABSTRACT

The public sector audit is a cornerstone for an effective corporate governance. However, its effectiveness largely depends on the scope of audit conducted in public sector agencies. Therefore, this paper examines scope of audit and its effects on the effectiveness of public sector audit in Malaysia. The respondents include the public sector auditors. By employing non-probability purposive sampling using 203 respondents and analysed using Partial Least Square Structural Equation Modeling (PLS-SEM), it was discovered that the scope of audit have a significant positive effect on the effectiveness of public sector audit. The finding reveals that performance and compliance auditing is crucial in public sector. A sound regulatory mechanism in terms of rewards and punishment should be fair and clear. This is important to ensure that the internal auditors strictly address the non-performance behaviours of the government. The research topic is relatively new in Malaysian public sector. This study is therefore likely to significantly contribute to the knowledge about how scope of audit operates in a public sector agencies context that differs significantly from the contexts of private sector agencies.

Keywords: Compliance audit, effectiveness, performance audit, public sector audit, scope of audit.

Received: 23 December 2020

Accepted: 2 October 2022

<https://doi.org/10.33736/ijbs.5619.2023>

* Corresponding author: Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA, Kelantan Campus, Bukit Ilmu, 18500, Machang, Kelantan, Malaysia. Tel: +6099762000; Email: raihana6791@uitm.edu.my

1. INTRODUCTION

In recent times, public sector audit received much attention and it is required that internal audit department is established in the public sector through Treasury Circular Ref. 9 of 2004. This is to ensure effective corporate governance system and to increase citizen's confidence in the government regarding the management of economic resources (Dawuda et al., 2017). With regard to the scope of audit, progressively, the National Audit Department (NAD) is required to conduct attestation, financial management, performance audits and management audits at all levels of the government (National Audit Department, 2020). The main concern is, during the audit, several agencies were found to show major discrepancies in their reports thus, requiring further investigations by the Public Accounts Committee (PAC). Moreover, it was also highlighted in the AG Reports that the leakages of funds were the major weakness and the discrepancies include the findings that: (i) work, supplies and services do not adhere to the government procedures and rules; (ii) weaknesses in project planning; and (iii) lack of controlling and monitoring (Tan et al., 2019). These issues are of key concerns to the government because of their impact on the economy and affect millions of ringgit of public money (Yusof et al., 2016).

This paper enriches the literatures in this field and provides practical implication for the development of Malaysian public sector audit. The remainder of the paper is organised as follows: second section mainly gives a review of scope of audit and effectiveness of public sector audit; third section is for research methodology and empirical results; fourth section gives the conclusions and implications of this paper.

2. LITERATURE REVIEW

2.1. Scope of Audit

The scope of audit in the internal audit unit in public sectors cover financial, compliance and performance audit. The desired departments will be audited based on the compliance and performance audit that have been outlined by the NAD. The compliance report is drafted to confirm whether the public-sector agencies' financial management complies with the laws, other financial regulations and procedures. Internal auditors have to review the accuracy and trustworthiness of the financial and operating data. They are in charge of such tasks to ensure that precise, latest, complete and necessary information record is established. In addition, they also have to ensure that the recordkeeping and reporting are efficient and complies with the stipulated policies, plans, procedures, laws, regulations and contracts (Fadzil, Haron, & Jantan, 2005). The Auditor General will validate whether the directors have fulfilled their responsibility in preparing a true and fair view of financial statements and whether the records are adequately maintained and updated. On the other hand, compliance audit is a practice to confirm whether the public-sector agencies' financial management complies with the laws along with other financial regulations and procedures.

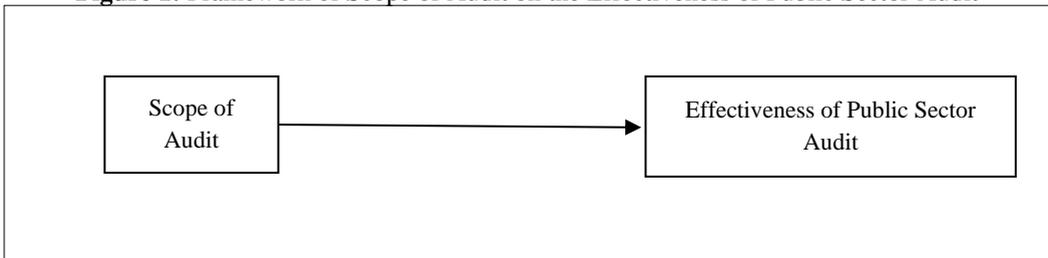
Performance auditing is carried out to evaluate whether the execution of the government's activities is governed in an effective, efficient and economical way and whether the planned objectives were achieved or not (National Audit Department, 2017) and in accordance with international auditing standards specifically the International Standard of Supreme Audit

Institutions (ISSAI) 3000, 3100 and 3200 (298 recommendations in auditor-general's report 2017 series 2, 2018). The performance audit discipline developed alongside the comparable evaluation research discipline (Blalock, 1999). Performance audit typically produced both quantitative and qualitative findings (Sloan, 1996), with both kinds of findings being used to affect organizational change in relation to ensuring compliance with regulations. In terms of the Canadian context, all stakeholders are required to be involved during the performance audits (Morin, 2014). It is argued that even though the intervention of auditors are noticeable, the performance audit did not contribute radical changes towards the organisation (Desmedt, Morin, Pattyn, Brans, & Morin, 2017). To the contrary, from the Malaysian context, performance audit effects the government since they follow the recommendations (Loke, Ismail, & Hamid, 2016).

The literature on the scope of audit reflects that performance and compliance audits have been used extensively in conducting audits (Noor & Mansor, 2019; Desmedt et al., 2017; Shamki & Alhajri, 2017; Morin, 2014; Mihret & Yismaw, 2007; Fadzil et al., 2005; Al-Twaijry, Brierley & Gwilliam, 2003). Thus, the present study suggests that the performance and compliance audits should be performed as part of the internal audits conducted in Malaysian public sector. In this study, the scope of the public sector internal audit is defined as the degree of compliance and performance of the audit for the purpose of confirming whether the agencies' financial management is in compliance with the laws and other financial regulations and procedures in order to ensure that of the government's activities are governed in an effective, efficient and economical way and whether the planned objectives are achieved. Internal auditors have to evaluate the accuracy and trustworthiness of financial and operating data. They are responsible to perform these tasks to ensure that precise, necessary, complete and the latest information records are established.

2.2. *The Effect of Scope of Audit on the Effectiveness of Public Sector Audit*

Figure 1: Framework of Scope of Audit on the Effectiveness of Public Sector Audit



As previously discussed, although less investigation has been conducted, many of the auditors strongly believed that scope of audit have a significant effect on the effectiveness of public sector audit. The continuous and thorough audit execution should be conducted in all public sector organisations. Public sector performance audits are used to guarantee accountability for using taxpayer funds. The performance audit discipline originated in the government sector, but is now applied to projects and programs (Nalewaik, 2013). It is believed that scope of audit that focusing on performance and compliance have a great influence on internal audit effectiveness (Noor & Mansor, 2019; Shamki & Alhajri, 2017; Mihret & Yismaw, 2007). Even though continuous and thorough audit execution should be conducted at all public sector organisations, to the best of researcher's knowledge, only a small number of researches have been conducted on the effect of

scope of audit on the effectiveness of Malaysian internal audit. The audit activity should be accompanied by compliance and performance auditing. The compliance auditing is conducted to confirm whether the financial management of public sector agencies complies with the government rules and procedures. Internal auditors have to evaluate the accuracy and trustworthiness of financial and operating data. They are responsible to perform these tasks to ensure that precise, necessary, complete and the latest information records are established. Based on the literature review and analysis of empirical studies, the hypothesis was constructed as follow:

H1: Scope of audit have a significant positive effect on the effectiveness of public sector audit.

3. METHODOLOGY

This study used a questionnaire survey. The study population was defined as internal auditors who works in public sector agencies including federal and state government, Islamic religious council, local authorities and federal and state statutory bodies. According to statistics, in 2019, several public sectors were on the audit list of the NAD which include 26 ministries, 13 state government agencies, 144 local authorities, 15 Islamic councils, 124 financial statements, 12 consolidated funds of federal statutory bodies and 496 companies that acquired government grants or 51% or more of its share capital is possessed by the government (National Audit Department, 2020). Malaysia has 471 public sector organisations. Nevertheless, only 266 of these organisations maintain established internal audit departments (Ahmi, Saidin, Abdullah, Ahmad, & Ismail, 2016). The statistical data on the total number of public internal auditors is not attained because of the different sizes of audit departments in public sector agencies. Based on the rule of thumb in deciding the sample size, a total of 30 to 500 respondents are adequate and sufficient (Roscoe, 1975). For this study, 500 questionnaires were distributed to the respondents. Each questionnaire was attached with a cover letter to address the purpose of the study and instructions on how to answer the questionnaires. The questionnaires were validated and tested by using scale development process that includes the procedure of items generation, collection of reviews from experts and a population survey was conducted (Noor & Mansor, 2020). Moreover, to avoid social-desirability bias due to self-report nature of the questionnaire, the independence of conducting the study and complete confidentiality of all internal auditors' answers were highlighted. A questionnaire using a five-point Likert scale was used for collecting data. The responses obtained, which totalled 203 (40.6 percent) is sufficient since a response rate of 30% is acceptable for a survey (Hair et al., 2018).

By employing non-probability convenience sampling, the participants comprised of 203 internal auditors with the largest group of respondents from federal government. Table 1 shows they were 167 internal auditors (82.3%), 16 internal auditors from federal statutory bodies (7.9%), seven respondents from both state government and local authorities which accounted for (3.4%), three from state statutory bodies (1.5%) and two from Islamic religious councils (1.0%).

Table 1: Profile of the Respondents

Types of Public Sector Agencies	Frequency (n)	% (Percentage)
Federal Government	167	82.3
State Government	7	3.4
Islamic Religious Council	2	1.0

Federal Statutory Bodies	16	7.9
Local Authorities	7	3.4
State Statutory Bodies	3	1.5

4. RESULTS AND DISCUSSION

PLS-SEM was used in performing data analyses for this study. The decision was based on several reasons. First, the main objective of this study is to examine the relationship between scope of audit and the effectiveness of public sector audit. PLS-SEM is primarily proposed for causal-predictive analysis (Anderson & Gerbing, 1988). As the purpose of this study is to predict the significance of the relationships between the determinant factor and the effectiveness of public sector audit, PLS-SEM is considered more appropriate.

The procedures involved in assessing a measurement model includes examining indicator loadings, internal consistency reliability, convergent validity and discriminant validity (Hair, Risher, Sarstedt, & Ringle, 2019; Ramayah et al., 2018). The first step in reflective measurement model assessment involves examining the indicator loadings. Loadings above 0.708 are recommended, as they indicate that the construct explains more than 50 per cent of the indicator’s variance, thus providing acceptable item reliability (Hair et al., 2019). Table 2 shows that all the indicators are above 0.708.

Table 2: Loadings and Cross Loadings

Items	Effectiveness of Public Sector Audit	Scope of Audit
Effectiveness of Public Sector Audit 1	0.852	0.707
Effectiveness of Public Sector Audit 2	0.896	0.741
Effectiveness of Public Sector Audit 3	0.881	0.696
Effectiveness of Public Sector Audit 4	0.857	0.695
Effectiveness of Public Sector Audit 5	0.884	0.647
Effectiveness of Public Sector Audit 6	0.852	0.617
Effectiveness of Public Sector Audit 7	0.819	0.703
Effectiveness of Public Sector Audit 8	0.752	0.569
Effectiveness of Public Sector Audit 9	0.895	0.718
Effectiveness of Public Sector Audit 10	0.890	0.714
Effectiveness of Public Sector Audit 11	0.853	0.706
Effectiveness of Public Sector Audit 12	0.853	0.743
Effectiveness of Public Sector Audit 13	0.833	0.710
Scope of Audit 1	0.749	0.819
Scope of Audit 10	0.723	0.839
Scope of Audit 2	0.720	0.902
Scope of Audit 3	0.741	0.918
Scope of Audit 4	0.690	0.873
Scope of Audit 5	0.600	0.834
Scope of Audit 6	0.647	0.829
Scope of Audit 8	0.561	0.717
Scope of Audit 9	0.581	0.730

The second step is by assessing the reliability of the individual measures, reliability for the composite measures of each construct (internal consistency reliability). Specifically, in exploratory research, the value of the Composite Reliability (CR) from 0.60 to 0.70 are acceptable while the

values ranging from 0.70 to 0.90 are categorised as “satisfactory to good” (Hair, Hult, Ringle, & Sarstedt, 2022) and values which are more than 0.95 are regarded as excellent (Drolet & Morrison, 2001). From the Table 3, the CR values scope of audit (0.952) and effectiveness of public sector audit (0.973).

In this study, all the indicator variables are considered valid and are highly correlated but different and therefore, not redundant. The items are tapped into different aspects of the measured constructs and are highly correlated, thus it is classified as a good measurement model (Becker, 2015).

For the convergent validity, it can be analysed through the significance of outer loading of indicators and the Average Variance Extracted (AVE) for each measure. PLS-SEM establishes convergent validity by determining the higher outer loadings. The principle is that the outer loading ought to be higher than 0.708 (Hair et al., 2022). The logic behind this rule is to make sure that the latent variable can elaborate a minimum of 50 percent or 0.50 of the indicator variances. It also indicates that the variance shared between the construct and its indicator is higher compared to the measurement of the error variance. Meanwhile, the outer loadings which exhibit the values ranging from 0.40 to 0.70 should be considerably dismissed from the scale. The value of the CR and AVE will only show an increase when the indicators are deleted (Hair et al., 2022). All the AVE values at the construct level which are shown in Table 3 indicate the convergent validity of the measurement model. The AVE ranges between 0.691 and 0.733. The results show that all constructs have met the satisfactory level of $AVE > 0.5$ and $CR > 0.7$ as asserted by (Hair et al., 2022).

Table 3: Measurement Model

Construct	Item	Loading	CR	AVE
Effectiveness of Public Sector Audit (EoPSA)	EoPSA1	0.852	0.973	0.733
	EoPSA10	0.890		
	EoPSA11	0.853		
	EoPSA12	0.853		
	EoPSA13	0.833		
	EoPSA2	0.896		
	EoPSA3	0.881		
	EoPSA4	0.857		
	EoPSA5	0.884		
	EoPSA6	0.852		
	EoPSA7	0.819		
	EoPSA8	0.752		
	EoPSA9	0.896		
Scope of audit (SoA)	SOA1	0.819	0.952	0.691
	SOA10	0.839		
	SOA2	0.902		
	SOA3	0.918		
	SOA4	0.873		
	SOA5	0.834		
	SOA6	0.829		
	SOA8	0.717		
	SOA9	0.730		

Discriminant validity can be defined as the extent to which items of a construct are really different or unique from items of other constructs in the same model (Hair et al., 2022). For this study, the researcher utilised HTMT technique expanded by (Henseler, Ringle, & Sarstedt, 2015) to assess the discriminant validity. Correspondingly, the discriminant validity was confirmed by the result shown in the HTMT inference. It depicts that the confidence interval did not exhibit a value of 1 on any of the constructs (Henseler et al., 2015) hence confirms the discriminant validity. Based on the HTMT results depicted in Table 4, it indicates that the discriminant validity is fulfilled. Correspondingly, the findings of HTMT inference also revealed that the confidence interval did not show a value of 1 on any of the constructs (Henseler et al., 2015). Overall, it is acknowledged that the discriminant validity for this measurement model is approved and that the discriminant validity between the constructs is verified.

Table 4: HTMT Results

Variable	1	2
1. Effectiveness of Public Sector Audit		
2. Scope of Audit	0.841	

In structural model assessment, the suggested model is tested for its strength and trend. This means that the collinearity and path coefficient are also examined. Since PLS-SEM is lacking a standard goodness-of-fit, a previous effort in obtaining a matching statistics have shown to be extremely troublesome (Henseler & Sarstedt, 2013). Therefore, the quality of the model is assessed solely based on its capability when predicting endogenous constructs. Hence, the following conditions are made possible in helping this assessment which includes collinearity assessment, coefficient of determination (R^2), effect size (f^2), and statistical significant of path coefficient.

The first step to evaluate the structural model is by examining issues of collinearity between every set of the construct separately from the structural model’s subpart. Supposing that the tolerance value recorded values below 0.20, then the collinearity level is considered high. Moreover, if the value of VIF is 5 or higher, the researcher should consider other alternatives such as eliminating the constructs, merging them into a construct or creating higher-order constructs to treat these issues (Hair et al., 2022). Table 5 shows the VIF values of the analyses for this study. It can be seen that all of the VIF outputs are clearly below the threshold of 5. Therefore, collinearity among the constructs is not an issue in the structural model. Kock and Lynn (2012) note that a VIF of 5 could be employed when algorithms that incorporate measurement error are used. Thus, the researcher continued examining the default report such as path coefficient, R^2 , f^2 , and Q^2 .

Table 5: Collinearity Assessment of the Constructs

Construct	Effectiveness of Public Sector Audit (VIF)
Effectiveness of Public Sector Audit	
Scope of Audit	3.540

R^2 or Coefficient of Determination measures a model’s predictive power on the dependent variable. Hence, the higher the value of R^2 , the higher the percentage of the variance. The next step of this assessment is examining the R^2 values of the endogenous latent variables. In PLS-SEM, the coefficient of determination or the R^2 value is one of the most frequently utilised measures to examine the model which measures the proportion of an endogenous construct variance

(fluctuation) that is elaborated by its constructs (Hair et al., 2022). The R^2 value also refers to the accuracy of the model's predicative variables and it is computed as the squared relationship between the actual and estimated values of a certain endogenous construct.

The coefficient portrays the combinations of the effects of the exogenous latent variables on the endogenous latent variable. Since the coefficient is assumed as the squared relationship between the actual and estimated values, hence it also renders the total of variance in the endogenous constructs and it is explained by all of the exogenous constructs which are connected to it. The R^2 values falls in the range of zero and one, with greater values indicating the higher levels of the strength of the predict power (Hair et al., 2022).

Since the assessment of the coefficient of determination is accepted by a variety of disciplines, the acceptance principles of R^2 value with 0.75, 0.50 and 0.25 is also deemed reliable (Hair et al., 2022). The R^2 value which is portrayed in the model is 76.7 % or 0.767 of the variance in the effectiveness of public sector audit was explained by the scope of audit. Therefore, with respect to (Hair et al., 2022) suggestion, the explained variance of effectiveness of public sector audit can be described as substantial.

The effect size (f^2) is a tool to measure the corresponding effects of a predictor (exogenous) construct on an endogenous construct (Hair et al., 2022). It can be calculated by observing the variation in R^2 . In order to calculate f^2 , two PLS path model must be estimated. The first path model, as specified by the hypotheses, should be a full model, and should contain R^2 . The same goes to the second model unless a specific exogenous construct is removed, where R^2 is excluded. Nevertheless, the values of f^2 are automatically calculated via PLS-SEM version 4.

By following the guidelines from Cohen (1988), to measure the relative effect size of exogenous construct on the endogenous construct, the f^2 value of 0.02 can be considered as small effect, 0.15 exhibits a medium effect and the value which is more than 0.35 is considered as high effects. Hence, an exogenous construct strongly contributes to describe an endogenous construct. In example, when the difference between including R^2 and excluding R^2 is high, a higher value of f^2 is achieved. The f^2 value was computed automatically provided by SmartPLS 4. The R^2 included value was obtained from the report in PLS Algorithm of the overall model estimated as shown in Table 6. From Table, 6 it can be observed that scope of audit (0.101) has a medium effect for effectiveness of public sector audit.

Table 6: Effect Size Rating

	f^2	R^2	
Effectiveness of Public Sector Audit		0.767	
Scope of Audit	0.102	-	Medium effect

To test for predictive power of the model we followed Shmueli et al. (2019) who suggested that if all the item differences (PLS-LM) were lower than there is strong predictive power, if all are higher than predictive relevance is not confirmed while if the majority is lower than there is moderate predictive power and if minority then there is low predictive power. Based on Table 7, a majority of the errors of the PLS model were lower than the LM model thus we can conclude that our model has a medium predictive power.

Table 7: PLS-Predict

MV	Q ² predict	PLS RMSE	LM RMSE	PLS-LM RMSE
EOPSA1	0.445	0.481	0.478	0.003
EOPSA2	0.457	0.466	0.475	-0.009
EOPSA3	0.433	0.493	0.488	0.005
EOPSA4	0.414	0.548	0.536	0.012
EOPSA5	0.401	0.495	0.499	-0.004
EOPSA6	0.417	0.516	0.534	-0.018
EOPSA7	0.447	0.532	0.552	-0.020
EOPSA8	0.324	0.635	0.643	-0.008
EOPSA9	0.424	0.481	0.467	0.014
EOPSA10	0.399	0.503	0.489	0.014
EOPSA11	0.387	0.536	0.544	-0.008
EOPSA12	0.422	0.482	0.500	-0.018
EOPSA13	0.358	0.571	0.554	0.017

Path coefficients is important in indicating the solidity of the relationships as well as in showing that the hypotheses are empirically supported. The path coefficient represents the hypothesised relationship among the structural model's constructs. The standardized beta values (β) of the path coefficients range between -1 to +1 in a regression analysis. In particular, the path coefficient which is close to +1 signifies a solid positive correlation (and vice versa) that are constantly significant. The nearer the value of the estimated coefficients to zero, the poorer the correlation. However, extremely low values which almost reach zero are considered insignificant (Hair et al., 2022). Nonetheless, bootstrapping is important to test for the significance in order to obtain a standard error (Vinci et al., 2010). After analysing bootstrapping, inferential statistic (t-values) are obtained. The significant t-value for one-tailed test is 1.645 while for two-tailed test, the value is 1.96 (Hair et al., 2022).

Table 8: Direct Relationship Model

f^2	R^2	f^2	R^2
Effectiveness of Public Sector Audit	0.767	Effectiveness of Public Sector Audit	0.767

Note: *Significant at $p < 0.05$. SoA = Scope of Audit; EoPSA = Effectiveness of Public Sector Audit.

Results from the study indicate that the scope of audit have a significant positive effect on the effectiveness of internal audit ($\beta = 0.290, p < 0.01$), thus H1 is supported. The results are consistent with earlier studies (Noor & Mansor, 2019b; Shamki & Alhajri, 2017; Mihret & Yismaw, 2007). This finding further supports the idea of Morin (2014) who asserts that all stakeholders are required to be involved during performance audits. Moreover, the finding is also similar to those of Turetken, Jethefer and Ozkan (2019), and Fadzil et al. (2005) who claim that an effective audit should comply with the conformance of IIA standard. In addition, the auditors also have to ensure that record keeping and reporting are efficient and conform to the stipulated procedures, policies, plans, laws and regulations and contracts.

5. CONCLUSION

This study aimed to examine scope of audit and its effects on the effectiveness of public sector audit in Malaysia. To do so, a questionnaire survey was conducted that asked the internal auditors about the effects of scope of audit on the effectiveness of public sector audit. The finding shows that there is a significant positive effect of scope of audit on the effectiveness of public sector audit. The results of the study indicate that the scope of audit is an indispensable tool to internal auditors due to the effect on internal audit effectiveness. Hence, the government should adopt a strategic enforcement approach, complemented with robust policies and processes that are regularly reviewed. The important role of internal auditors as governance professionals means that the internal auditors must comply with the laws, regulations, standards and codes, and thus, establishing a culture of good practice. Therefore, in addition to their technical compliance responsibilities, internal auditors should also understand and effectively practice good corporate governance in their organisations. Implications of this findings include that the regulators, policy makers and administrators also should be more aware of their roles in public sector audit and the importance of having effective public sector audit. As mentioned earlier, the government face many different risks include financial and non-financial risk. They should be aware of these risks in order to adequately manage them and plan for their long term and short-term future. Moreover, the study of scope of audit which focusing on compliance and performance audit is relatively new in Malaysia. This paper adds to the literature by using a Malaysian sample to complement the gap in the previous studies and to extend the use of the Malaysian public auditors to cover research in the Malaysian public sector audit field.

This study contributes to the practices of internal audit in reality. This research is deemed beneficial for those who are in charge of assessing audit programs in maintaining and preserving a high policy process and procedures in the public sector. These individuals are the policymakers, educators and staff who are directly involved in internal audits as mentioned before. Within a national context, this knowledge is vital for them especially in understanding the effects of the performances of organisations and their work while preparing the public in facing the challenges of the 21st century. This would hopefully stimulate further study on scope of audit in private sectors. In addition, it can possibly be suggested from the finding of this study that public sector audit by regularly updating the accounting standards, law and other regulatory requirements and develop suitable strategies to enhance the public sector audit. The study faced some limitations. In addition to the usual limitations that accompany questionnaire surveys, such as the possibility of perceptions of the internal auditors not matching reality. Since the data were collected only from internal auditors, hence the interpretation of the results should be limited to this group of respondents. It is expected that regulators, administrators and policy makers would have different perceptions of the effectiveness of public sector audit. Therefore, future studies should be conducted in the areas where limitations have been identified.

ACKNOWLEDGEMENT

The authors would like to thank and acknowledge the very helpful comments provided by the editors and my beloved supervisor, Prof. Dr. Noorhayati Mansor. The authors also would like to express their gratitude to Universiti Teknologi MARA Kelantan Campus, Malaysia for the administrative and Universiti Teknologi MARA (UiTM) for funding support in this project.

REFERENCES

- Ahmi, A., Saidin, S. Z., Abdullah, A., Ahmad, A. C., & Ismail, N. A. (2016). State of information technology adoption by internal audit department in Malaysian public sector. *International Journal of Economics and Financial Issues*, 6(7), 103–108.
- Al-Twaijry, A. A., Brierley, J. A., & Gwilliam, D. R. (2003). The development of internal audit in Saudi Arabia: An institutional theory perspective. *Critical Perspectives on Accounting*, 14(5), 507–531.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Blalock, A. B. (1999). Evaluation research and the performance management movement. *Evaluation*, 5(2), 117–149. <https://doi.org/10.1177/13563899922208887>
- Cohen, J. (1988). *Statistical power analysis for the behavioral science*. Mahwah, New Jersey: Lawrence Erlbaum.
- Dawuda, A., Ataribanam, S., & Joseph, A. A. (2017). An exploratory study on management support services and its effects on the quality service delivery of internal auditors in the Northern Ghana. *International Journal of Accounting Research*, 5(2), 2–5. <https://doi.org/10.4172/2472-114x.1000170>
- Desmedt, E., Morin, D., Pattyn, V., Brans, M., & Morin, D. (2017). Impact of performance audit on the administration: A Belgian study (2005-2010). *Managerial Auditing Journal*, 32(3), 251–275. <https://doi.org/10.1108/MAJ-04-2016-1368>
- Drolet, A.L. & Morrison, D. G. (2001). Do we really need multiple-item measures in service research? *Journal of Service Research*, 3(3), 196–204.
- Fadzil, F. H., Haron, H., & Jantan, M. (2005). Internal auditing practices and internal control system. *Managerial Auditing Journal*, 20(8), 844–866. <https://doi.org/10.1108/02686900510619683>
- Hair, J. F., Thomas, G., Hult, M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (3rd ed.)*. Thousand Oakes, CA: Sage.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate Data Analysis*. Pearson Education Limited (8th ed.). USA: Pearson Education.
- Hair, Joseph F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 39(2), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Vinzi V, Chin WW, Henseler J, Wang H (2010) *Handbook of partial least squares*. Springer, Berlin
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28(2), 565–580. <https://doi.org/10.1007/s00180-012-0317-1>
- Becker, J. M. (2015, August 2). *Composite Reliability*. <https://forum.smartpls.com/viewtopic.php?t=3805>.
- Kock, N., & Lynn, G. S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546–580.

- Loke, C. H., Ismail, S., & Hamid, F. A. (2016). The perception of public sector auditors on performance audit in Malaysia: An exploratory study. *Asian Review of Accounting*, 24(1), 90–114. <https://doi.org/10.1108/ARA-12-2013-0082>
- Morin, D. (2014). Auditors General's impact on administrations: A pan-Canadian study (2001-2011). *Managerial Auditing Journal* 29(5), 395-426. <https://doi.org/10.1108/MAJ-10-2013-0948>
- Mihret, D. G., & Yismaw, A. W. (2007). Internal audit effectiveness: An Ethiopian public sector case study. *Managerial Auditing Journal*, 22(5), 470–484.
- Nalewaik, A. (2013). Factors affecting capital program performance audit findings. *International Journal of Managing Projects in Business*, 6(3), 615–623. <https://doi.org/10.1108/IJMPB-11-2012-0070>
- National Audit Department. (2020). *FAQ*. <https://www.audit.gov.my/index.php/en/component/content/article/9-uncategorised/210-soalan-lazim?font-size=smaller>
- National Audit Department. (2017). *1 Malaysia Audit Day & Public Sector Audit Conference 2017*. <https://www.audit.gov.my/images/pdf/2017/HA1M2017/Laporan%20HA1MN%20Tahun%202017.pdf>
- Noor, N. R. A. M., & Mansor, N. (2020). Measuring the effectiveness of public sector audit: Scale development and validation. *Journal of Contemporary Social Science Research*, 4(1), 78-86.
- Noor, N.R.A.M., & Mansor, N. (2019). The mediating role of whistleblowing practice between types of audit and effectiveness of public sector audit. *International Journal of Advanced Science and Technology*, 28(15), 140–147.
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0: An updated guide and practical guide to statistical analysis* (2nd ed.). Pearson.
- Roscoe, J.T. (1975). *Fundamental research statistics for the behavioural sciences* (2nd ed.). Holt Rinehart & Winston.
- Shamki, D., & Alhajri, T.A. (2017). Factors influence internal audit effectiveness. *International Journal of Business and Management*, 12(10), 143–154.
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*, 53(11), 2322-2347.
- Sloan, N. (1996). *The objectives and performance measurement of performance audit*. In *Performance Auditing and the Modernisation of Government*. Paris: Organisation for Economic Co-operation and Development (OECD).
- Tan, T., Carvalho, M., Sivanandam, H., & Rahim, R. (2019, July 15). AG Report: PAC to Question Several Agencies on Discrepancies. *The Star Online*. <https://www.thestar.com.my/news/nation/2019/07/15/ag-report-pac-to-question-several-agencies-on-discrepancies#fgiMT0HFxbh6bXX.99>
- Turetken, O., Jethefer, S., & Ozkan, B. (2019). Internal audit effectiveness: Operationalization and influencing factors. *Managerial Auditing Journal*, 35(2), 238–271.
- Yusof, N. A. Z., Haron, H., & Ismail, I. (2016). Internal Audit Practice in Malaysian Public Sector Organizations. *Proceedings of the National Conference for Postgraduate Research* (pp. 120–126). http://umpir.ump.edu.my/15936/1/P019_pg120-126.pdf

298 recommendations in auditor-general's report 2017 series 2. (2018, Dec 3). *New Straits Times*.
<https://www.nst.com.my/news/nation/2018/12/436742/298-recommendations-auditor-generals-report-2017-series-2>