

# PUBLIC SECTOR PROCUREMENT: THE EFFECTIVENESS OF MONITORING MECHANISM

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## ABSTRACT

Issues in public sector procurement have been increasing lately. These issues are related to non-compliance or frauds that have been highlighted each year by the Auditor General. However, there seems to be no effective solutions in overcoming these issues. Therefore, this study attempted to examine the relationship between monitoring mechanisms and procurement issues in the public sector. The monitoring mechanisms that were of focus are the effectiveness of procurement procedures and the role of internal auditors towards issues in public procurement. The finding is that no job rotation in high-risk areas is the top factor that influences public procurement issues. Normally, the absence of job rotations will create opportunities for procurement officers to collude with outsiders to commit fraud. Besides job rotations, the other factors that influence procurement issues are related to components of control activities in the COSO framework. The major finding of the study has shown that both procurement procedures and the role of internal auditors have a negative relationship towards procurement issues in the public sector. However, only procurement procedures have a significant relationship towards procurement issues in the public sector compared to the role of internal auditors. In conclusion, both the monitoring mechanism used in this study in terms of procurement procedures and role of internal auditors affect procurement issues in the public sector.

**Keywords:** public sector procurement, procurement issues, monitoring mechanisms, procurement procedure, role of internal auditor

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## **INTRODUCTION**

The public sector contributes sizeably to the gross domestic product and investment and a substantial portion of the workforce in the economy in a wide range of developed and developing countries (Dun and Bradstreet 2008). The public sector has a large capacity to influence the economy through spending. Government expenditure has a significant share of the Gross Domestic Product (GDP) in each country around the world because countries in both developed and developing regions are using public procurement to pursue social goals such as to reduce unemployment rates, raise labour standards, provide employment opportunities for disabled persons, and promote gender, racial and ethnic equality (McCrudden, 2004). Records show that public expenditure is between 8-25% of GDP for the Organization for Economic Cooperation and Development (OECD), 11-17% for European Union (EU) countries (OECD, 2000; Alfonso et al., 2005; Ho et al., 2010) and 45% in a number of developed countries (Alfonso et al., 2005). Government procurement plays a prominent role as a driver for economic development and tools to achieve national policies. Hence, it is one of the key economic activities (Thai, 2001) and essential to enable Governments to perform their functions and operations efficiently (Coggburn, 2003). However, there is a major distinction in public procurement as it draws its funds from tax revenue. Procurement in the public sector plays an important role in the economic development of a country. Government procurement is recognised as a major function of the government, and a substantial amount of money is allocated annually for the purpose of procurement of goods and services (Thai, 2001; Maniam et al., 2007). In Malaysia, the budget for procurement has been increased substantially from 1999 to 2007 (Maniam & Halimah, 2007). Expenditure in the public sector has increased amounting to US\$76.48 billion in 2010 with a 6.29% growth rate (IMF 2011). In particular, Malaysian governmental entities, state and federal, spent over US\$27.1 billion on procurement activities (WTO 2010).

Hence, the need for accountability and transparency in government procurement is important as it involves huge amounts of money and the fact that the money comes from the public (World Bank, 1995). The Parliament of Malaysia (2013) claimed that the public sector procurement faced challenges imposed by a variety of factors. According to the PwC Global Economic Crime Survey 2014, procurement fraud is the second

most reported global economic crime, behind asset misappropriation. Since 2012, procurement fraud in the public sector has more than doubled, with 46% of public sector organisations reporting this in 2014. The World Bank roughly estimated that about US\$1.5 trillion in public contract awards are influenced by corruption per year, with US\$200 billion for public sector procurement alone (Kaufmann, 2005). The National Fraud Authority in the United Kingdom estimated a procurement fraud loss of £2.3 billion (£1.4 billion for the central government, £876 million for local governments) each year. Kemp (2010) gives a same estimation as the procurement fraud within the public sector had cost the United Kingdom government losses of about £2.5 billion each year. In the United States alone, procurement fraud contributed to losses of US\$18-20 billion each year. In Malaysia, the Second Finance Minister estimated that the Federal government would spend between 10% and 20% of the annual gross domestic product on government procurement. This equals to RM70billion to RM140billion, spent on procurement of goods, services and works.

### **Problem Statement**

Procurement activity in the government sector is considered as one of the most vulnerable to fraud, corruption and ethical issues (OECD, 2009). The government procurement process faces issues with compliance regarding procedures, rules and regulations. Mainly, the issues of non-compliance in procurement have led to fraud. As with other nations, the public sector in Malaysia is also faced with the same issues of procurement compliance and fraud. Every year, the Auditor General's Report concludes that most government agencies do not comply with procurement rules and regulations. According to the Accountability Index, the Auditor General has extensive reports on the ineffectiveness, unethical conduct and non-compliance of government procurement. According to Malaysia's former Prime Minister, Datuk Seri Abdullah Ahmad Badawi, the existing procurement process and awarding of government contracts is full of opportunities for corruption (Berita Harian, 2007). These non-compliance issues are repeated each year, although recommendations and suggestions to improve are made by the Auditor General to the government agencies. The non-compliance issues in government procurement have become one of the major factors for the drop in the Accountability Index.

Based on statistics from the Prime Minister's Office, between the years 2012 to 2014, there were 225 public officers who had been subjected to disciplinary action and surcharge because of procurement fraud. Due to this problem, the federal government could be losing RM28 billion each year through procurement fraud (The Star, 2009). The Auditor General claims that lack of monitoring by top management within ministries and departments in the procurement process has led to non-compliance and fraud issues. According to the fraud theory, there are three factors that contribute to an individual committing fraud; the pressure or an incentive to engage in fraud; a perceived opportunity; and the ability to rationalise fraudulent behaviour (Cressey, 1953; Albrecht, Hill and Albrecht, 2006a). Therefore, monitoring aspects are important to limit an individual's opportunity to commit fraud in procurement. Monitoring mechanisms such as a good procurement procedure and internal control systems, appointing an internal auditor and a fraud prevention programme should be implemented to reduce non-compliance and fraud issues in public procurement. Based on the Accountability Index 2012, only one ministry was chosen based on its ranking at number twenty-two out of twenty-five ministries evaluated. Despite the fact that the ranking is above average, whenever audit was carried out on the chosen agency, issues in procurement non-compliance and fraud were highlighted. The issues were consistently picked up in 2011, 2012 and 2013 and these were affecting the ministry's performance. Therefore, this study aims to assess the effectiveness of monitoring mechanisms towards non-compliance and fraud issues in government procurement.

## **Research Questions**

This research focussed on the following research questions:

1. What are the factors that influence procurement issues in the public sector?
2. What is the relationship between procurement procedures and procurement issues in the public sector?
3. What is the relationship between the internal auditor's roles and procurement issues in the public sector?

## **Scope of the Study**

The scope of this study is focused on one ministry out of 27 ministries in Malaysia. The data for this study was collected from January 2012 to December 2014, and focussed on the factors that influence procurement issues and procurement procedures in the ministry.

## **PUBLIC SECTOR PROCUREMENT SYSTEM**

Generally, there are five types of procurement methods in the Malaysian public sector which consist of procurement through petty cash, direct purchase, quotation, tender and central contract. Procedures, rules, regulations and guidelines regarding these five public procurement methods are formulated by the Ministry of Finance. Each procurement division in government departments and agencies are responsible to monitor the procurement system to ensure that it is in accordance with the procedures, rules and regulations implemented by the Ministry of Finance. The financial authority plays an important role in government procurement. At the federal government level, financial authority is vested with the Minister of Finance and the Secretary-General of the Ministry of Finance. Meanwhile, at the state government level, the Chief Minister and state financial officers are vested with the financial authority. The final level of government structure is the Local Authorities and Statutory Bodies, where the financial authority is vested with the respective Chairpersons and the Councils or the Board of Directors.

## **Public Sector Procurement Issues**

### ***Procurement non-compliance***

Non-compliance issues in procurement arise when the procurement officer fails to comply with procurement procedures (Jones and Carey, 2011). As discussed above, procurement procedures, rules and regulations are important aspects in the public procurement system. For that reason, any non-compliance in public procurement will open doors for corruption, abuse of public money and fraud. It will directly affect the objectives of government procurement. A study by Hawkins and Muir, (2014) highlighted the issues of non-compliance by procurement officers at the US Department of Defense such as lack of necessary documentation, failure to complete

the contract, failure to prepare the contractors' performance assessment report and the increased number of bid protest. This is because the procurement officer has problems with the procurement regulations. The study has indicated that the degree of compliance is positively related to the procurement officer's experience, sufficiency of requirement definition and sufficiency of pre-award lead time. Compliance in public procurement has also been proven to be related to monitoring mechanisms. Research carried out in the Tanzanian public sector, found that there is a significant positive relationship between monitoring with compliance (Mwakibinga & Buvik, 2013). Therefore, it indicates that compliance with procurement procedures, rules and regulations can be achieved with effective monitoring mechanisms. Furthermore, in finding the reasons for non-compliance in public procurement, an interview with 12 procurement officers in Finland identified six reasons for procurement non-compliance which are lack of process awareness, lack of ability to use contract processes, behavior guided by own interests and habits, perceived superior of an alternative offer, opportunism and resistance to change (Karjalainen, Kempainen, & Van Raaij, 2009).

### ***Procurement fraud***

In every country, governments use procurement in the development of their economy. Generally, public procurement will involve large amounts of money due to the large allocation of budgets by governments (Transparency International, 2010). As a result, there is a need for accountability and transparency in government procurement as it involves huge amounts of public funds as it is prone to the risk of fraud (World Bank, 1995). This has been supported by the Parliament of Malaysia (2013) which indicated that public procurement generally created an environment conducive to fraud (Berita Harian, 2007). Davies (1995) pointed out that fraud in procurement can be divided into internal and external. The internal procurement fraud includes bid fixing, kickbacks, work or goods supplied for private purposes, dummy suppliers and bogus intermediaries whereas external procurement fraud involves bid rigging, substandard products, goods not supplied, overbilling and billing for work not performed. Othman, Zakaria, Nordin, Shahidan and Jusoff (2010) in their study had identified the areas of corruption in public procurement in Malaysia. The result showed that kickbacks, bid rigging, excess payment, false facts and shell companies are the famous types of corruption scheme in public procurement. Therefore,

it is common if the United Nations (2004) indicated public procurement as the government activity most vulnerable to corruption, collusion, fraud and manipulation.

Reducing fraud in procurement is an on-going concern for organizations, especially in government sectors. Issues of accountability, transparency, corruption, integrity and cronyism in government procurement are rising and the public is concerned that public funds are properly managed and wastage to be kept to a minimum (Hui, Othman, Omar, Rahman and Haron, 2011). Thus, it is important for governments to have an adequate monitoring mechanism to increase the effectiveness of the use of public funds and therefore ensure as little leakage as possible (Parliament of Malaysia, 2013). For the purpose of this study, two independent variables were selected, which are procurement procedures and the role of internal auditors. These independent variables were chosen because they acts as first line defence for government departments and agencies in highlighting procurement issues. Besides, it is also based on mixed findings from previous research regarding the effects of these two monitoring mechanisms towards procurement issues.

## **Public Sector Monitoring Mechanism**

### ***Procurement procedures***

The Committee of Sponsoring Organizations (COSO) defined internal control as a process in achieving effectiveness and efficiency of operations, reliability of financial reporting and compliance with laws and regulations. The COSO had developed a model for internal control to be effective. The COSO Model comprises five components that are related to each other and these include control environment, risk assesment, control activities, information and communication and monitoring (COSO,1992). Internal control plays a key role for organizations in helping to meet goals and reduce the likelihood of fraudulent activities (Government Accountability Office (GAO), 1999). Thus, internal control has been regarded as the first line of defense for organizations in preventing and detecting non-compliance and fraud issues. In public procurement, effective monitoring mechanisms are an important tool that highlights the behavior of procurement officers (Mwakibinga & Buvik, 2013). Other than that, monitoring mechanisms also help to ensure that procurement objectives are in compliance with

procurement rules and regulations. A study by Mwakibinga and Buvik (2013) in the Tanzanian public sector has indicated that effective monitoring mechanisms result in a significant positive influence on compliance towards procurement rules and regulations. Previous research has highlighted that lack of controls, absence of management review, and overriding existing controls as the three top most factors that gave opportunities for non-compliance and fraud to exist.

An effective internal control mechanism can provide prior notice of fraud risk, thereby helping to detect and prevent fraud (Gramling and Myers, 2003). The study carried out by Omar and Bakar (2012) found that management review of internal controls has been ranked as the top-most fraud prevention mechanism. However, not all researchers agree with the findings, some of them (Prem Sikka, 2015; Haron, 2013 and Sanusi, 2014) argue on the limitation of internal control effectiveness, especially in government procurement activities. Prem Sikka and Glen Lehman (2015) revealed that internal controls can be ineffective through collusion between internal and external parties; therefore, it is unable to detect non-compliance and fraud issues. This is also agreed by Haron (2013), where the existence of internal controls cannot prevent fraud and corruption in the public sector. System of transparency, efficiency, fairness and accountability is vital for the procurement process in the public sector. In Malaysia, the Ministry of Finance (MOF) is responsible for all the procurement procedures either done internally or out of Malaysia (Othman, Zakaria, Nordin, Shahidan and Jusoff, 2010). MOF had established and issued guidelines that act as a legal framework for public procurement such as the Procurement Guideline Book, Financial Procedures Act 1957, Treasury Instructions (TI) and the Treasury Circular Letter (TCL). These procurement procedures had identified the types of procurement and the processes involved to all government departments and agency officers (Othman et al. 2010).

### **Role of Internal Auditor**

Internal auditors play an important role in helping management in detecting and preventing fraud by strengthening the internal control of the organization. There are numerous research regarding the important role of internal audit in detection and prevention of fraud. Petrașcu & Tîeanu (2014) highlighted that internal auditors in the public sector should be

competent and capable to prevent and detect fraud. Their study suggested that internal auditors should establish a relationship with fraud detection. El-Nafabi, (2014) agreed that the deficiencies in public sector auditors as the reason in the increase in the misuse of public funds and financial corruption in Sudan. Meanwhile, by conducting an exploratory review on the implementation of SAS No. 82, Hillison (1999) revealed that internal auditors are in the best position to prevent, deter, and detect fraud within the organization. The role of an internal auditor can be a mechanism to assist the management in providing better control of the organization (Zakaria, Devi, Selvaraj & Zakaria, 2006). However, Da Conceição da Costa Marques (2014) provided different views on the role of internal auditors. His study found out auditors cannot play a role in the detection of corruption but may help in the prevention of fraud and corruption. As procurement fraud involves corruption, it is argued that internal auditors can detect corruption activities within the organization.

## Research Framework

A theoretical framework was designed to illustrate the relationship between those monitoring mechanism which are; procurement procedures and role of internal auditor towards procurement issues in the public sector.

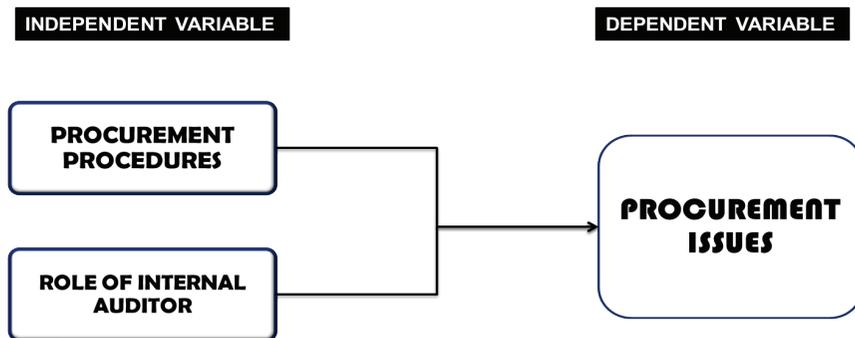


Figure 1: Research Framework

## The Hypotheses

Formulating a hypothesis is an important function for research. Cooper and Schindler, 2008 highlighted that the hypothesis provides direction of the study. Additionally, Sekaran (2003) pointed out that hypotheses development

in each research is done after having identified the important variables and establish the relationship among them. For this study, the two hypotheses were investigated.

- H<sub>1</sub>:** There is a significant negative relationship between procurement procedures and procurement issues in the public sector.
- H<sub>2</sub>:** There is a significant negative relationship between the role of internal auditors and procurement issues in the public sector.

## **RESEARCH DESIGN AND METHODOLOGY**

The research strategy for this study is the use of a survey questionnaire. The survey instrument was customized to determine the effectiveness of the monitoring mechanism towards procurement issues in the Malaysian government. Thus, this study relied upon primary data which was collected through the distribution of a structured questionnaire. The questionnaire was self-developed through a literature review and a mix and match approach was also used to adapt wherever necessary to suit the local context-the Malaysian public sector. It was distributed to the employees in three divisions within the Ministry of Home Affairs which were involved in the procurement processes. The questionnaire was sent through email and by hand to the respondents respectively due to a low response rate via the postal method. It has been highlighted as the best method to reach targeted respondents. Furthermore, a follow up telephone call was made as a reminder to the respondents after two weeks due to a low response rate. The questionnaire contained 61 questions and was divided into four sections as follows:

### **General Background of Respondents**

The first section of the survey instrument was about the respondents' general information. The aim of this section was to provide information on the demographic profiles that would enhance the analysis of the questionnaire. The respondents were required to give information such as gender, age, working experience, service group or position level and roles in the eProcurement system. This information would be useful when performing a descriptive analysis on the respondents' background and will

enables the researcher to test the reliability of the respondents' answer based on their demographic factor.

## **Monitoring Mechanisms**

The second section was regarding the monitoring mechanisms toward procurement issues in the public sector. The purpose of this section was to examine the influences of monitoring mechanisms in terms of procurement procedures and the role of internal auditors towards procurement issues in the public sector which can be used as an indicator of the ability to measure the current procurement policy, procedures, rules and regulations. Furthermore, it can provide information as to whether the respondents were aware of procurement policies and procedures in preventing non-compliance and fraud in the procurement process. The questionnaire observed the respondent's opinion on the degree of internal auditor functions towards procurement issues in the public sector. Internal audit is the first line of defence for ministries; therefore, this section was aimed to examine the influence and effectiveness of the internal auditor's role in preventing non-compliance and fraud in the procurement process.

## **Procurement Issues**

The third section highlighted procurement issues in the public sector which comprised of non-compliance and fraud in the procurement process. This section aimed to examine the respondent's perception towards procurement issues in selected ministries. Therefore, it is appropriate that the questionnaire is distributed to procurement officers as they are involved in the procurement process and aware of the procurement issues in the public sector.

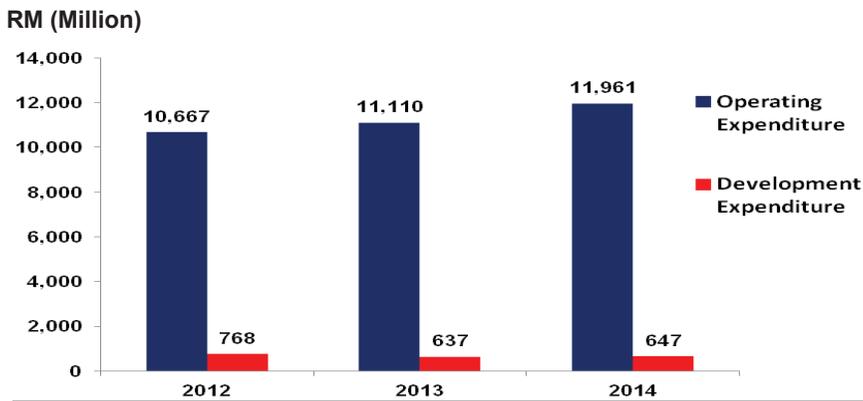
## **The Study Sample**

The study was conducted in the Ministry of Home Affairs because the total budget allocation approved for the ministry is high compared to others. The Government spends most of the budget allocation for the procurement of goods, services or work. According to the annual budget from Ministry of Finance, the total budget allocation for the Ministry of Home Affairs increased from the year 2012 to 2014. The total budget which covered both the operating and development expenditure for the three years amounted to

RM 35.79 billion, where RM 33.74 billion was for operating expenditure and the balance of RM 2.05 billion is for development expenditure. Table 1 and Figure 2 show the details of the budget allocation for the Ministry of Home Affairs for the years 2012 to 2014.

**Table 1: Budget Allocation in Ministry of Home Affairs**

Year	2012	2013	2014
Operating Expenditure	10,666,734,900	11,109,728,700	11,960,776,000
Development Expenditure	767,646,040	637,205,770	647,000,000
Total	11,434,380,940	11,746,934,470	12,607,776,000



**Figure 2: Budget Allocation in Ministry of Home Affairs**

Besides the budget allocation, the Ministry of Home Affairs was chosen as sample for this study based on the number of procurement issues in terms of non-compliance and fraud which have been highlighted in the Auditor General’s Report, internal audit report, report from the finance department in ministries and the Accountant General’s report. Three divisions in the Ministry of Home Affairs, namely the Procurement Division, Finance Division and Development Division were selected as sample. These divisions were chosen as they responsible for managing and were also involved in the procurement process for the Ministry of Home Affairs. The entire team of public officers in the Procurement Division, Finance Division and Development Division were the sample in the study as presented in Table 2.

**Table 2: Number of Public Officer in Three Selected Division**

<b>Division</b>	<b>No. Of Public Officers</b>
Development	63
Finance	69
Procurement	43
<b>Total</b>	<b>175</b>

This study used the stratified random sampling method, where the population in the Procurement, Finance and Development Division were divided into mutually exclusive groups that are relevant, appropriate and meaningful for the context of this study. Twenty public officers in the Procurement, Finance and Development Division were selected randomly. The sample size consisted of 60 public officers in the Ministry of Home Affairs. According to Sekaran (1992), a sample size that is larger than 30 and less than 500 will be appropriate for most research. Thus, the questionnaire was distributed to those respondents who could yield the information which would meet the purpose of the study.

### **Data Analysis**

This study was quantitative in nature and used questionnaires for data collection. In answering the research questions the data was analyzed using the Statistical Package for the Social Science (SPSS) software. Data analysis was tested for goodness of measures, descriptive and inferential analysis. A normality test of the questionnaire data was conducted before going through a descriptive and inferential analysis. It is to verify that the data was normally distributed and hence, parametric tests can be conducted. Furthermore, the data was put through reliability and validity tests to ensure that the instruments used are reliable and valid.

## **THE STUDY FINDINGS AND DISCUSSION**

### **Analysis of the Questionnaires Survey**

A total of one hundred (100) questionnaires were distributed to the public officers from three divisions in the Ministry of Home Affairs. However, from the 100 questionnaires distributed, only seventy (70) responses were filled and returned which resulted in a response rate of 70

percent. According to Sekaran (2007), appropriate samples sizes for most researchers were between 30 and 500 samples. For that reason, the size was considered acceptable for this study. Table 3 provides the summary of the samples selected.

**Table 3: Summary of the Samples Selected**

Divisions In Ministry of Home Affairs	No. of Samples	No. of Response	Response Rate
Development Division	30	20	66.7%
Finance Division	40	30	75.0%
Procurement Division	30	20	66.7%
Total	100	70	70.0%

### Descriptive Analysis

Descriptive analysis was used to explore, summarize and describe the information collected from the questionnaires. Table 4 shows the detailed result of the demographic profile of the respondents based on section one in the questionnaire.

**Table 4: Summary of Demographic Information**

No.	Profile	Respondents	
		Frequency	Percentage
1.	Gender		
	<i>Male</i>	22	31.4%
	<i>Female</i>	48	68.6%
2.	Age Group		
	<i>Under 29 years old</i>	12	17.1%
	<i>30 – 39 years old</i>	39	55.7%
	<i>40 – 49 years old</i>	19	27.1%
	<i>Above 50 years old</i>	-	-
3.	Service Group		
	<i>Higher Level Management (JUSA C and above)</i>	-	-
	<i>Professional and Management (41 – 54)</i>	24	34.3%
	<i>Support Staff (27 – 40)</i>	41	58.6%
	<i>Support Staff (1 – 26)</i>	5	7.1%
4.	Working Experience		
	<i>&lt; 5 Years</i>	4	5.7%
	<i>6 – 10 Years</i>	40	57.1%
	<i>11 – 20 Years</i>	19	27.1%
	<i>21 – 30 Years</i>	7	10.0%
	<i>More than 30 Years</i>	-	-

The result as in the table above indicates that most of the respondents are female employees which consisted of 68.6% of the total respondents while only 31.4% were male respondents. The majority of the respondents were in the 30 – 49 years range and the balance of 17.1% were respondents under 29 years old. There were no respondents aged 50 and above. About half of the respondents were support staff who held positions in grade 27 – 40. It is then followed by respondents with positions in the management and professional groups which comprised of 34.3%. Only 5 out of 70 respondents were support staff in grades 1 – 26. There were no respondents from the top management group. However, a majority of the respondents were from the grade 17 to 54 group, involved in the procurement process. Therefore, they can provide accurate information regarding procurement issues involving the Ministry of Home Affairs. Besides the results of the questionnaire, the survey also shows that a majority of the respondents were experienced officers. More than half of the respondents, 57.1% have experience between 6 to 10 years, 27.1% between 11 to 20 years and 10% between 21 to 30 years. There were only 5.7% of the respondents who had been working for less than five years. With a vast working experience in the public sector, the respondents have more information pertaining to the government procurement process.

### Analysis of Factors Influencing Procurement Issues

Section two of the questionnaires survey lists the factors that give rise to procurement issues. The purpose is to rank the factors from most influencing to least influencing issues in public procurement based on respondents' perception. Table 5 shows the detailed results based on section one in the questionnaire survey.

**Table 5: Summary of Factors Influencing Procurement Issues**

No.	Factors	Respondents	
		Frequency	Percentage
1.	No job rotation on high risk function	20	28.57%
2.	Management override of controls	12	17.14%
3.	Lack of top management support	9	12.86%
4.	Poor segregation of duties	7	10.00%
5.	Inadequate continuous monitoring	6	8.57%
6.	Greed and expensive lifestyle	4	5.71%

7.	Easy access to cash and assets	4	5.71%
8.	Internal controls or policies not followed	3	4.29%
9.	Lack of proper authorization	3	4.29%
10.	Person did not think they would get caught	2	2.86%

Based on the results, no job rotation in the high-risk area is the top factor that influences public procurement issues in terms of non-compliance and fraud. The absence of job rotations will create opportunities for procurement officers to collude with outsiders to commit fraud. Furthermore, when procurement officers stay in the same position or roles for a long time, they become less effective and take their job for granted. Meanwhile, the factors with the least influence towards procurement issues are procurement officers who do not think that they would get caught when committing either non-compliance or fraud. The top five factors that influences procurement issues in the public sector are components of control activities in the COSO framework.

## Statistical Analysis

### Normality test

To determine normality distribution of the data, the Kolmogorov-Smirnov and Shapiro-Wilk test was conducted. From the normality test it was found that the data was normally distributed. It can be proved as the p-value of Kolmogorov-Smirnov is 0.200 which is greater than the alpha value of 0.05. Furthermore, the value of skewness and kurtosis of the data was also close to -1. Therefore, the statistics result of the normality test shows that the data was normally distribution. Table 6 summarizes the Kolmogorov-Smirnov and Shapiro-Wilk test while Table 7 shows the result of skewness and kurtosis.

**Table 6: Normality Test**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Procurement Issues	.073	70	.200*	.973	70	.128

a. Lilliefors Significance Correction

**Table 7: Result of Skewness and Kurtosis**

			<b>Statistic</b>
	<b>Mean</b>		2.9945
	<b>95% Confidence Interval for Mean</b>	<b>Lower Bound</b>	2.7829
		<b>Upper Bound</b>	3.2061
	<b>5% Trimmed Mean</b>		3.0018
	<b>Median</b>		3.0000
	<b>Variance</b>		.787
<b>Procurement_Issues</b>	<b>Std. Deviation</b>		.88739
	<b>Minimum</b>		1.08
	<b>Maximum</b>		4.54
	<b>Range</b>		3.46
	<b>Interquartile Range</b>		1.25
	<b>Skewness</b>		-.046
	<b>Kurtosis</b>		-.869

## Correlation Analysis

Correlation analysis is a statistical analysis that examines the relationship between variables. The correlation analysis also assists in describing the strength of the relationship between two variables (Pallant, 2005). Thus, in order to determine the strength of the relationship between variables, Hair et al. (2008) have highlighted correlation coefficient ranges strength as per Table 8.

**Table 8: Coefficient Range and Relationship Strength**

<b>Coefficient Range</b>	<b>Relationship Strength</b>
$\pm .91 - \pm 1.00$	Very Strong
$\pm .71 - \pm .90$	Strong
$\pm .41 - \pm .70$	Moderate
$\pm .21 - \pm .40$	Weak
$\pm .01 - \pm .20$	No Relationship, Very Weak

A correlation analysis was performed to examine the relationship between procurement procedures, the role of internal auditors and procurement issues. The correlation analyses between variables are shown in Table 9 below.

**Table 9: Pearson Correlation Analysis**

Variables		Procurement Procedure	Role of Internal Auditor	Procurement Issues
Procurement Procedure	Pearson Correlation	1	.499**	-.348**
	Sig. (2-tailed)		.000	.003
	N	70	70	70
Role of Internal Auditor	Pearson Correlation	.499**	1	-.291*
	Sig. (2-tailed)	.000		.015
	N	70	70	70
Procurement Issues	Pearson Correlation	-.348**	-.291*	1
	Sig. (2-tailed)	.003	.015	
	N	70	70	70

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

\*. Correlation is significant at the 0.05 level (2-tailed).

Based on the Pearson Correlation test, the results pointed out that both the independent variables, Procurement Procedures and the Role of the Internal Auditor have an inverse relationship with Procurement Issues. Additionally, based on the coefficient range and strength, these two independent variables have a weak negative relationship with Procurement Issues with a respective coefficient range of -0.348 and -0.291. The statistical results also show that the Procurement Procedures and Role of Internal Auditor have a significant relationship with Procurement Issues as indicated by a p-value of less than the alpha value of 0.05. Therefore, the findings from the Pearson Correlation have answered the research question.

## Regression Analysis

Regression analysis is used to explain the impact of changes in an independent variable on the dependent variable. Hair, Money, Samouel & Page (2007) pointed out that regression analysis is a technique used to measure the linear relationship between two variables or more. The result of the coefficient of determination is presented in Table 10 below. The value of  $R^2$  was 0.140. This  $R^2$  value indicates that about 14 percent of the variance in the Procurement Issues was explained by the two predictor variables, which are Procurement Procedures and Role of Internal Auditor. Meanwhile, the remaining 86 per cent was not explained in this regression model. Thus, it indicates that the two monitoring mechanisms, Procurement Procedures and Role of Internal Auditor, only contributed to a minor influence to the Procurement Issues.

**Table 10: Coefficient of Determination, R<sup>2</sup> Value**

Regression Test				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.374 <sup>a</sup>	.140	.114	.83532

a. Predictors: (Constant), Procurement Procedure, Role of Internal Auditor

The result of ANOVA is presented in Table 11. It is to inquire if the independent variable is significantly associated with procurement issues. Based on the results, the regression was statistically significant at 5% ( $F = 5.435$ ,  $p = 0.006$ ). Therefore, the findings highlighted that there was at least one independent variable significantly related to procurement issues. The result of the regression analysis is shown in Table 12. The significant negative relationship between procurement procedures and the procurement issues in the Malaysian government with the p-value of 0.042 explains that an increase in procurement procedures was related to a decrease in the level of procurement issues. This shows that the implementation of practices and policies of the procurement procedures in the public sector organizations may help to prevent and deter procurement issues. Therefore, H1 is supported, and procurement procedure is associated with procurement issues.

On the other hand, the role of the internal auditor is not significant with procurement issues ( $p$ -value = .237). This indicates that the role of the internal auditor does not influence the significance of procurement issues. The insignificant result may point out that there is a negative perception about the functions of internal auditors in the Ministry. It also points out that internal audit programmes were not effective in curbing procurement issues. Therefore, this result does not support H2.

**Table 11: Anova**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.585	2	3.792	5.435	.006 <sup>b</sup>
Residual	46.750	67	.698		
Total	54.335	69			

a. Dependent Variable: Procurement Issues

b. Predictors: (Constant), Procurement Procedure, Role of Internal Auditor

**Table 12: Regression Analysis**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.244	.392		10.828	.000
	Procurement Procedure	-.370	.179	-.271	-2.070	.042
	Role Of Internal Auditor	-.175	.147	-.156	-1.192	.237

*Dependent Variable: Score Mean Success Collaboration*

Moreover, based on the unstandardized coefficients value, the regression model can be constructed as in Figure 3.

Procurement Issues	=	4.244	- 0.370	(Procurement Procedure)	-	0.175	(Role of Internal Auditor)
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**Figure 3: Regression Model**

## DISCUSSION OF THE FINDINGS

Based on the study, the top five factors that are associated with procurement issues in the public sector are; *no job rotation in high risk areas, management override of control, lack of top management support, poor segregation of duties and inadequate continuous monitoring by management*. All of these factors are the components of control activities in the COSO framework. Besides, these factors also relate to opportunities in the fraud triangle developed by Cressey (1953). Finally, there are two monitoring mechanisms that were identified in this study, namely, procurement procedures and the role of the internal auditor. Two hypotheses were developed to examine whether the procurement issues in the Malaysian public sector were influenced by the monitoring mechanisms. The first hypothesis was developed to examine the effectiveness of procurement procedures regarding practices and policies towards procurement issues. The results found that the procurement procedure had a significant negative relationship in the level of procurement issues. This result is consistent with the study done by Riahi-Belkaoui and Picur (2000) that pointed out poor internal controls; management override and collusion as factors contributing to fraud. Other

than that, a case study carried out by Tan (2013) found that the absence of three internal control components had contributed to procurement fraud incidents. Additionally, an effective internal control mechanism can provide prior notice of fraud risk, thereby helping to detect and prevent fraud (Gramling and Myers, 2003). The second hypothesis was developed to examine the relationship between the role of the internal auditor and procurement issues in the Malaysian public sector. The result shows that there is an insignificant negative relationship between the role of the internal auditor and procurement issues. The results indicate that there is negative perception towards the function of internal auditors in the public sector. The result is consistent with the study conducted by Da Conceição da Costa Marques (2014) which argued that internal auditors can detect procurement fraud within the organization.

In conclusion, the results of this study suggest that the procurement procedure is the only monitoring mechanism that has a significant influence toward procurement issues in the public sector. On the other hand, the role of the internal auditor does not have a significant influence on procurement issues. Additionally, the summary of the results of this study is presented in Table 13.

**Table 13: Summary of the Findings**

<b>Hypothesis</b>	<b>Descriptions</b>	<b>Result</b>
H1	There is a significant negative relationship between procurement procedure and procurement issues in public sector.	Support
H2	There is a significant negative relationship between role of internal auditor and procurement issues in public sector.	Not support

## **CONCLUSION**

Procurement issues in the public sector have received tremendous public attention. Each year, the Auditor General's Report highlights issues in public sector procurement processes that point towards non-compliance or fraud. Procurement issues in the public sector can be categorized into two, namely, non-compliance and fraud. There are various rules and regulations in public procurement established by the Treasury that needs

to be adhered to by government departments and agencies. The findings of the study are related to the research questions that have become the motive of this study. Firstly, the research objectives and questions deal with the factors that influence procurement issues. Based on the issue, the top five factors that influence procurement issues in the public sector are; *no job rotation in high-risk areas, management override of control, lack of top management support, poor segregation of duties and inadequate continuous monitoring by management*. The second and third research questions are regarding the significant relationship between the monitoring mechanism and procurement issues. The findings from the statistical analysis indicated an inverse or negative relationship. Additionally, there is a significant negative relationship between procurement procedures and procurement issues in the public sector. There is a negative relationship with procurement issues in relation to the role of the internal auditor. It is however not significant in this study. There may be a negative perception towards the function of the internal audit in the respective ministry. It also suggests that the programme carried out by the internal audit division is not effective in curbing procurement issues. Therefore, improving procurement procedures and upholding the role of internal auditors must be executed by government departments and agencies in order to deter procurement issues in the public sector.

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