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## Factors Influencing Public Procurement Process Effectiveness: A Study in a Uniform Government Agency

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### Abstract

This study examines the factors influencing the public procurement process effectiveness in a uniform government agency. Specifically, this study examines three factors namely, audit and monitoring, professionalism and ethics, and transparency on the public procurement process effectiveness in a uniform government agency. Using questionnaire survey on officers in a uniform government agency, this study shows that audit and monitoring and transparency significantly and positively influence the public procurement process effectiveness in the uniform government agency. However, professionalism and ethics do not significantly influence on the public procurement process effectiveness in a uniform government agency although there is a positive relationship. The findings of this study serve as a guidance to the procurement units and procurement players in ensuring that the public procurement process is free from misconducts among the procurement officers particularly in a uniform government agency.

**Keywords:** Public Procurement, Audit, Monitoring, Professionalism, Ethics, Government Agency.

### Introduction

The economy of each country is influenced by the spending of the public sector. Public procurement is one of the highest governments spending every year. It is stated that the gross domestic product in each country all around the world are significantly depend on the use of the public procurement to serve the variety of the social goals (Ismail et al., 2018). Thus, it is crucial for a government accomplish their functions and operation on the procurement effectively and efficiently. To ensure the practice of the efficient public procurement is by the contribution of it towards the comprehensive management of the public spending which indirectly can promote the effectiveness of the public sector management (Jones, 2013).

The procurement process has been established to have a good governance in the public procurement sector including the application of good governance standards (Basheka, 2009). The demanding matters that have been issues in public sector is to improve the transparency,

efficiency and effectiveness in service quality since the government has spent a huge amount of money on the public procurement annually (Olantunji et al., 2016). However, there is always a leakage and weaknesses from the system as well that may lead to the wrongdoings and fraud by the parties who directly involve with it. In order have an effective public procurement activity, the procurement fraud should be eliminated. However, the public procurement fraud is difficult to recognize since it covers the varied range of prohibited activities from pre tendering phrase, tendering phrase and post tendering phrase (National Fraud Authority, 2012). Therefore, public procurement fraud remains undetected, unreported and unmeasured. Thus, the proactive mechanism should be taken by the government to ensure that the public procurement activities are effective and efficient. All the procurement paid must be worth the value and the quality (Hui et al., 2011). Hence, in order to ensure that the public fund is managed properly and minimize the wastage of the public fund, the issues of accountability, transparency and integrity of all the parties involve should be considered.

According to the studies by OECD, the most exposed activities to corruption in the public sector is public procurement. This is due to the intricacy of the process, close relationship of the procurement officers and the contractors and the huge amount of the stakeholders (OECD, 2014). This issue does not exclude the uniform body of government agency where the procurement actively take place in order to achieve the objective of the agency which is to preserve the welfare of the citizen. For example: There has been a lot of complains regarding the issues of the procurement activities in one of the uniform government agencies in Malaysia. Among the misconducts involving the uniform body of the government agency are losses of assets, contract paid without the work done and procurement of the defence assets without the good specifications.

This study examines the factors influencing the effective public procurement process in a uniform body of a government agency. The findings of this study may assist the government to mitigate fraudulent transactions happen, unbiased contract rewarded and all the work done must be compulsory with the proof before payment. The next section provides the literature review related to this study. This is followed by Section 3 that provides explanation on the research design. Section 4 presents the results. The final section, Section 5 concludes this study.

### **Literature Review**

In Malaysia, the government have spent more than RM150 billion each year for the purpose of the public procurement. The main reason for the government of Malaysia to spend more on the procurement is to fund the government programs (Ghani et al., 2012). It is including the procurement of works, supplies and service with the gaining the value for money procurement (Ashari, 2012). The public procurement is applicable in all federal and state ministries, federal and state statutory bodies, and local authorities. The rules and regulation of public procurement are according to Financial Procedures Act 1957 and Government Contract Act 1949. Other than that, in the journal *The Public Procurement in Malaysia 2018* stated, all other amendment will be governed in administrative instrument such as Treasury Instructions, Treasury Circular and Federal Central Contract Circulars. Public procurement in Malaysia is divided into three major modes which are direct purchase, quotation and tenders. The direct purchase is the first mode of the procurement in any government agencies. Basically, the direct purchase procurement is for supplies and services up to RM50,000 by issuing the Government Order to the goods and services suppliers who continuously

supplying goods at the reasonable price and quality. Meanwhile, the direct purchase for works is up to RM20,000 by issuing a Work Indent. All the contractors who want to serve the works for the government must be registered with the Contractors Services Centre (PKP) and Construction Industry Development Board (CIDB) Malaysia (Hui et al., 2011).

The second mode of public procurement are quotation. The value of supplies and services which above the amount of RM50,000 to RM500,000 via calling of quotations and the requirement of quotations to be requested is five. The same requirement for the contractors must be also registered by Government. For the service of work, the amount for quotation is RM20,000 to RM500,000 via calling of quotations to invite at least five quotations. For the last modes of procurement, tenders, the value must be amounting above RM500,000. The participation of the contractors must be registered with the government. However, the international contractors will also be invited to join the tenders if there is no local contractors that can produce or supply the services. Instead, the joint venture contractors between local and international also are encouraged for the purpose of changing expertise and capability. All these three modes of procurement will be awarded based on the previous performance and after the meeting of the procurement board committee with the democracy practiced by the procurement officers as well. For the public procurement process, there are a sequence of procedures and multiple process that should go through to ensure the efficiency of the public procurement process. There are two parties that will involve in this process which are the procurement officers who represent the authority and the suppliers. The supervision, internal supervision, several visits by suppliers are needed in between to complete the process (Hui et al., 2011).

To ensure that the public procurement process in Malaysia is effective and efficiency, the public procurement process will be supported with the principles and objective of the public procurement itself. So, rather than the procedures and laws and regulation of the procurement activities, we must also note the objective of the public procurement in Malaysia. This is because the procurement activities cannot be classified as an effective and efficient if it is carried out by following the rules and regulation without achieving the objective and principles of the public procurement in Malaysia. The procurement officials have to play their roles to maintain trustful and honest in order to do their job scope. Without the dedicated procurement officers, the issues of procurement fraud may happen as they involve directly in the procurement process. There are usually six main objective of the public procurement systems that have been practice in Malaysia which are public accountability, transparent, best value for money, open competition, fair dealing, and integrity (Abul Hassan et al., 2020).

Public accountability will be hold by the procurement officers that should accountable with the choice and action to the public since the public procurement issues are also related to the contribution of the public fund. The vital accountability in procurement efficiency is the commitment of the procurement officers to perform the professional conduct when dealing with the procurement (Kristensen et al., 2021). The accountability can be measure by the way of handling the complains from supplier, the review from public and scrutiny of procurement action, effective control mechanism, and professional conduct of the procurement officers (Abebe, 2014). Meanwhile, the transparent of the public procurement refers to the decision and action are taken based on the procedure's enforcement. The concept of transparent in procurement process is the information is available to all the players including contractors, suppliers, and the public at large except for the concrete and legal reason for a confidential information (Tajarlou & Ghorbany, 2017). The measurement of the transparency in the public

procurement process is the information on the e-procurement which standardize the processes, allow the market to access and enhance the clean public bidding (Abebe, 2014).

The third principles are the best value for money. It can be defined that the efficient of the procurement is related to the cost it takes for the procurement activities (Degraeve & Roodhooft, 1999). The price and service provided should be satisfy with the quality and serve within the timely schedule. The rules of best value for money is straightforward which are to support the government action, purchase the items at the right time and right place (Tajarlou & Ghorbany, 2017). The measurement of the best value for money in procurement can be seen by the money that are fully utilized during the procurement with the good quality in return. Open competition and fair dealing in a public procurement will take place in the open market which indicate the e-procurement system where all the information on tenders are available. This will give the opportunity to the large number of contractors to provide their goods and services to the government agency via competitive based (Tajarlou & Ghorbany, 2017). The aim of the principles of open competition is to gain the most preferable product with the affordable price offers when the contractors join the tenders commercialize in the e-procurement system. So, it shows that the government is fair and just in the decision making. In fact, these principles show that the government are not practice the cronyism and favouritism in procurement activities. The last principles that will be the key for the effectiveness of the public procurement is integrity. The integrity is important by guarantying the fairness, compliance and non-discriminate process during the procurement take place (OECD, 2007). The procurement officers also might sweep the integrity principles if there is some personal interest with the contractors. Hence, the measurement of the principles of the integrity in procurement activities are by the high level of the integrity of the procurement officers and by ensuring that all the procurement policies and procedures are fully implement.

The basic risk assessment method on the government procurement process is access by the audit and monitoring activities. From this activity, the important finding and evidence will increase the efficiency of the procurement process with the good recommendation from the audit activity. The audit and monitoring may detect the new and emerging risks or red flags, give information to the procurement officers for updating the highlighted issues and allowing updating and new endorsement to the oversight and controlling system applicable to the department. According to OECD brochure, some of the *OECD Recommendation of the Council on Public Procurement* stated that the application of audit and monitoring activities will support the accountability in all the public procurement phrases from pre awarded to the post awarded. Meanwhile, the COSO framework, it is promoted the internal control in five components including control environment, risk assessment, control activities, information and communication and monitoring (Rae & Sands, 2017). The monitoring components in COSO framework will be highlighted in the public procurement for the effectiveness of the procurement process in public sectors especially in the uniform body agency.

Towards the active monitoring in public procurement, the key is the behaviour of procurement officers (Ismail et al., 2018). The procurement officers should make sure that all the procurement must be meet with the procurement objective and fulfil the procurement rules and regulation (Ismail et al., 2018). From the monitoring activities the internal controls will play the roles in verifying whether legal, administrative and financial procedures are followed and include financial controls, internal audit and management controls (OECD, 2014). Furthermore, the consistency of the internal control applied by the procurement officers in the agency will be standardize with the procurement rules and standards applied by the public sector. Other than that, the internal auditors in public sectors should also come



with the risk assessment. This is including the procurement procedures, controls that already applied to mitigate the procurement fraud and other supplementary controls that should be practice by the public sector agency. For example, in Argentina, Brazil, France, and Korea had taking a proactive step by introducing a “looking forward approach” while South Africa recently appointed a Chief Procurement Officer to ensure the audit and monitoring activities towards their procurement activities are effective, modernize and value in money (OECD, 2014). In fact, this proactive taking by these countries may also applicable in Malaysia to improve the governance, obedience and culpability of public procurement. Hence, this study proposes the following hypothesis:

*H1: Audit and monitoring positively influence the public procurement process effectiveness in a uniform government agency.*

In a public sector, doing right or wrong and, morally and ethically or immoral and unethically is a measurement of the ethical value. The subset of the ethics, which is professionalism mentions as a parameter and a scientific principle of management to all the employees in the department to ensure the efficiency, order and stability of the department (Magaya & Chidhawu, 2016). According to Kalinzi (2014), the issue of professionalism was engaged in almost all disciplines. While, public procurement professionalism permits the transparency, functionality and enhance the saving value towards the public expenditure and this is the answer on why the procurement professionalism had been given extra attention. The highlighted professional and ethics issue towards the effectiveness of the public procurement is the behaviour of the procurement officers itself. The integrity of the procurement officers may bound by code of conduct and penal provisions (Kalinzi, 2014). Code of conduct must be stress on the construction, dissemination, operation, and application since it would be crucial for the procurement officers.

Other than that, the supervisory department should ensure that the procurement officers had followed all the procurement procedures and should be independent body to knob the report on misappropriate action by the procurement officers (Hui et al., 2011). If the supervisory department did not take action on the reported lodge, the professionalism and ethics of the supervisory department and procurement officers involve should be questionable. In addition, the discussion on ethics also had been emphasized to the procurement officers. Ethics had been described that the people and the department are in form, and stick to the standards which are realistic and solidly based (Magaya & Chidhawu, 2016). Hence, both the people and the department have to work together to increase the value of ethics among the officers via the firm rules and regulation apply the department. Example: In Tanzania, their government review the procurement laws that were enacted in 2006 due to the questionable of the effectiveness and efficiency, non-corrupt and transparent procurement in their country (Magaya & Chidhawu, 2016). Whereas, in Uganda, there were recognize body that in charge on the public procurement professionalism which are Chartered Institute of Purchasing and Supply (CIPS), Chartered Institute of Logistics and Transport (CILT), The Dutch Association for Purchasing Management (NEVI) (Kalinzi, 2014). Hence in Malaysia, there is a suggestion to anti-corruption agency to pay a visit to the agency which are suspected to misconduct in procurement sections (Hui et al., 2011b). The needs of high level of professionalism and ethics towards the procurement officers are important to ensure that the image of the government agency is improve, the public funds are safeguarded and helps in decision making (Magaya & Chidhawu, 2016). It can be gain by the procurement officers

when they running their duties by making sure that the contract is done according to the specification as per agreement. Therefore, the following hypothesis is proposed:

*H2: Professionalism and ethics positively influence the public procurement process effectiveness in a uniform government agency.*

The core principle of the public procurement effectiveness is transparency which support the optimum use of limited development funds. It involves the increase in efficiency, diminished the fraud on procurement, value for money and open procurement process competition (Ashari, 2013). Other than promoting accountability and open the equal footing to the contractor, the transparency also ensures the access to information on the public promotion (OECD, 2014). Another measurement for transparency is by publicly published comprehensive tender documents (Jones, 2013). However, the lack of transparency is a traditional inherent problem that may lead to the biggest social problems such as corruption, scandal and abuse of public resources (Hui et al., 2011). Among the reason of the lack of transparency in public procurement is political interfere. The lobbying by the politician will distract the evaluation and procurement process to be clean and transparent (Jones, 2013). The transformation of the transparency in public procurement is not an automatic process. At the initial part, a must do thing is recognize the things that is necessary in need to be obtain rather than procured the unnecessary things as per demand by the irresponsible procurement officers or leaders (Hui et al., 2011). So, as a smallest initiative towards it the information about the upcoming contracts, notice and upcoming process should be provided in timely and adequate manner. This is to give a fairness of competition to the external parties to take part on the procurement activities (OECD, 2007).

Over the years, transparency in the public procurement also have gone through many improvements such as by the implementation of the e-procurement system which all the information about tenders is all accessible for bidding (Panda et al., 2010). Other than that, the Myprocurement, NeTI and e-Perunding also strengthen the transparency of public procurement in Malaysia (Jones, 2013). Other that variation on the electronic used, the fully implementation of publishing procurement rules, procurement plans issues in advance, advertisement of tender notices, exposure of the solicitation criteria evaluation, publication of contact award and prices paid are also the examples of the transparency practices (Ashari, 2013). While in Brazil, other than disclose the procurement to the public, the Brazil document also disclose the public fund flows for procurement activities through the public financial management cycle (OECD, 2007). So, there is no loop to hide the information since all the stakeholders can access to the financial flow. Transparency is a public procurement's-based principle. The practice of the transparency can hold the public to keep their trust on public procurement process and the accountability of the government officers and public institution (Nawi et al., 2016). The public also can gain the complete aids of the transparency. The procurement process would consider as effective and transparent when the agencies able to get the best choice of supplies with the affordable price (Rotchanakitumnuai, 2013). The process of the transparent of the procurement officers will be determine by the fully implementing the proper policies and procedure of procurement. The result from the study on procurement transparency shows that there is a positive impact on the transparent procurement process with the accountability transparency and reducing conspiracy (Rotchanakitumnuai, 2013). Hence, the following hypothesis is proposed:

*H3: Transparency positively influence the public procurement process effectiveness in a uniform government agency.*

### **Research Design**

The objectives of this study is to examine the factors influencing the effective public procurement process in a uniform body of a government agency. Specifically, this study examines:

- The effect of audit and monitoring on public procurement process effectiveness in a uniform government agency.
- The effect of professionalism and ethics on public procurement process effectiveness in a uniform government agency.
- The effect of transparency on public procurement process effectiveness in a uniform government agency.

### **Sample Selection**

The sample selection for this study is the officers of a uniform government agency in Malaysia who are working under procurement units. The officers are chosen because they are directly involved in the procurement activities especially in the uniform body agencies. Hence, they are the best respondent to know the factors that influence the public procurement process effectiveness. There are 45 officers in the procurement units. From the actual population of 45 person, the selected sample of 40 person are chosen based on the Sekaran table of sample size (Sekaran & Bougie, 2016).

### **Research Instrument and Data Collection**

The research instrument use in this study is questionnaire. The questionnaire is developed based on reviewing past literature and modified to suit the context of this study. There are three sections in the questionnaire. Section A requests the respondents to provide their demographic information such as age, gender, educational level and tenure of working in procurement unit. The questionnaires then lead to another section which indicates all the four variables measured for this research including the dependent and independent variables.

The second section, Section B requests the respondents to answer the question regarding to the thoughtful of the effectiveness of the procurement process activities. This is important to analyse the understanding and the applicable of the procurement process effectiveness in the uniform body agencies. There are six questions in total in this section. The scale used for this section is five-point scale from '1' being 'strongly disagree' to '5' being 'strongly agree'. The third section, Section C is divided into three parts including are Part I for the first factors which is audit and monitoring, followed by Part II which regarding on the professionalism and ethics and the last part, Part III is concerning on the last factors of the effectiveness of the procurement process which is transparency. Similar to the previous section, five-point scale from '1' being 'strongly disagree' to '5' being 'strongly agree' also had been used. The information on this part is crucial to know the level of influencing factors towards the dependent variable chosen.

The questionnaire was done through online survey, google form and were sent to all the respondent via email as well as WhatsApp for the fast respond. Each questionnaire came together with the cover letter that enlightened the purpose and objective of the study and the acknowledge the respondent that all the responds were confidential and does not be disclose to public. Forty respondents completed the questionnaire.



**Results**

**Preliminary Analyses**

The reliability test for all variables was performed to ensure the consistency and the results. Table 1 shows that the Cronbach’s Alpha score for all variables is above 0.80 which represent the good level of consistency and there are underlying in the same attributes.

Table 1  
*Reliability Analysis*

Variable	N	Cronbach's Alpha	Cronbach's Alpha based on Standardized Items
Effectiveness of the public procurement process	6	0.805	0.804
Audit and monitoring	6	0.830	0.830
Professionalism and ethics	5	0.790	0.800
Transparency	6	0.879	0.877

This study also performed the normality test to ensure that the normality of data. Table 2 shows that the scores for all four variables are considered as a normal distribution since all kurtosis score for each variable are all within the range of -2 to 2.

Table 2  
*Normality Tests*

	Public Procurement Process Effectiveness	Audit and Monitoring	Professionalism and Ethics	Transparency
Skewness	-.774	-.644	-.510	-.838
Std Error of Skewness	0.374	0.374	0.374	0.374
Kurtosis	1.120	0.847	-.045	0.897
Std Error of Kurtosis	0.733	0.733	0.733	0.733

**Public Procurement Process Effectiveness**

Table 3 shows the descriptive statistics of six items related to the effectiveness of public procurement process. The results show the mean score for all six items are average of 4.00 and above. The respondents provide the highest mean score for item ‘*I will ensure that all the procurement process take place according to the policies*’ with a mean score of 4.55. This is followed by item ‘*I will make sure all the criteria for the selection of suppliers should be set by law or regulation*’ with a mean score of 4.43 and item ‘*I will make sure that there is compliance during the allocation of procurement process*’. The least mean score provided by the respondents is on item ‘*I am totally aware on the principles of procurement*’ with a mean score of 4.15, an indication that they do not strongly agree on this item.

Table 3

*Descriptive Statistics of Effectiveness of Public Procurement Process*

	Mean	Standard Deviation
I understand the all the type of procurement (modes)	4.35	0.736
I am totally aware on the principles of procurement	4.15	0.580
I will ensure that all the procurement process take place according to the policies	4.55	0.552
I will make sure all the criteria for the selection of suppliers should be set by law or regulation	4.43	0.675
I will make sure that there is compliance during the allocation of procurement process	4.37	0.628
The rate for effectiveness of procurement process in my department should be good	4.35	0.533

**Audit and Monitoring and Public Procurement Process Effectiveness**

The descriptive statistics for audit and monitoring are shown in Table 4. The results show that the respondents provided the highest mean score for 'There is a checklist and review from the upper management before the awarded procurement' with a mean score of 4.45 and then item 'there is a proper documentation for all public procurement activities for complete audit trails to trace fraudulent procurement practices' with a mean score of 4.38 and follow closely by item 'There is a frequent independent procurement audit and monitoring for compliance with procurement practices' with a mean score of 4.37.

Table 4

*Descriptive Statistics of Audit and Monitoring*

	Mean	Standard Deviation
The internal control from the management is very effective	4.10	0.632
There is a proper documentation of all public procurement activities for complete audit trails to trace fraudulent procurement practices	4.38	0.628
There is a frequent independent procurement audits and monitoring for compliance with procurement practices	4.37	0.705
There is a checklist and review from the upper management before the awarded procurement	4.45	0.597
The rate for the audit and monitoring of procurement process in my department should be good	4.33	0.572
The authorization of the procurement process from the upper management are strong in my department	4.25	0.630

Table 5 shows the result of the correlation relationship between audit and monitoring and public procurement process effectiveness. The Pearson correlation score for this correlation

is 0.860. From the score of Pearson, it shows that both variables have a positively strong relationship among them ( $r = 0.860, p < 0.01$ ).

Table 5

*Audit and Monitoring and Public Procurement Process Effectiveness*

		Public procurement process effectiveness	Audit and monitoring
Public procurement process effectiveness	Pearson Correlation	1	.860**
	Sig. (2-tailed)		.000
Audit and monitoring	Pearson Correlation	.860**	1
	Sig. (2-tailed)	.000	

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

### Professionalism and Ethics and Public Procurement Process Effectiveness

Table 6 shows the result on the descriptive analysis for professionalism and ethics. The mean score shows all items have mean score of above 4.00 except for item *'there is a continuous testing of staff competence which enhance diversity of procurement functions to increase efficiency and effectiveness in the procurement process'* with a mean score of 3.95 whereas the highest mean score is provided for item *'procurement officials reject any offer from suppliers as a form of gratuity in the conduct of their duties'* has the highest mean score of 4.40, followed closely by the item *'there should be no "insiders" informer when it comes to procurement activity at my place'* with a mean score of 4.32.

Table 6

*Descriptive Statistics of Professionalism and Ethics*

Item	Mean	Standard Deviation
There is a continuous testing of staff competence which enhance diversity of procurement functions to increase efficiency and effectiveness in the procurement process	3.95	0.749
Procurement officials reject any offer from suppliers as a form of gratuity in the conduct of their duties	4.40	0.591
There should be no "insiders" informer when it comes to procurement activity at my place	4.32	0.694
Greed and expensive lifestyles do not affect the decision making in procurement	4.25	0.670
Personal interest on the outcome of the procurement activity is prohibited	4.27	0.640

Table 7 show the results of the relationship of professionalism and ethics and public procurement process effectiveness. From the table, the Pearson score for this correlation between two variables is 0.545. This indicates that the relationship between professionalism

and ethics and public procurement process effectiveness has positively strong relationship ( $r = 0.545$ ,  $p < 0.01$ ).

Table 7

*Professionalism and Ethics and Public Procurement Process Effectiveness*

		Public procurement process effectiveness	Professionalism and ethics
Public procurement process effectiveness	Pearson Correlation	1	.545**
	Sig. (2-tailed)		.000
Professionalism and ethics	Pearson Correlation	.545**	1
	Sig. (2-tailed)	.000	

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

**Transparency and Public Procurement Process Effectiveness**

Table 8 presents the result of the descriptive statistics for transparency. The results show that the respondents provided the highest mean score for item ‘complete, timely and accurate information are disclosed to all the contractors’ with a mean score of 4.37. This is followed closely by item ‘the equal access and opportunities to all the contractors are applied in my department’ with a mean score of 4.35. The lowest mean score provided by the respondents is for item ‘favouritism and cronyism are forbidden’ with a mean score of 4.05.

Table 8

*Descriptive Statistics of Transparency*

Item	Mean	Standard Deviation
The equal access and opportunities to all the contractors are applied in my department	4.35	0.770
There is a follow-up by the public procurement officials to ensure that all the information on the documents submitted were authentic and accurate	3.88	0.648
Complete, timely and accurate information are disclosed to all the contractors	4.37	0.705
Standardization of the procurement document applicable to all bidders	4.28	0.751
All the contractor’s participation on the procurement activities will be review without bias	4.23	0.768
Favouritism and cronyism are forbidden	4.05	0.677

Table 9 presents the results of the correlation on the relationship between transparency and public procurement process effectiveness. The results show that the score for the Pearson Correlation is 0.659 ( $r = 0.659$ ,  $p < 0.01$ ). This is mean that the relationship on these two variables is positively strong relationship.

Table 9

*Transparency and Public Procurement Process Effectiveness*

		Public procurement process effectiveness	Transparency
Public procurement process effectiveness	Pearson Correlation	1	.659**
	Sig. (2-tailed)		.000
Transparency	Pearson Correlation	.659**	1
	Sig. (2-tailed)	.000	

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

**Multiple Regression Analyses**

Before performing the multiple regression analyses, this study performs to indicate the relationship among the independent variable when the independent variables are highly correlated (Watson, 2001). According to Watson, 2001, when the score for Pearson is above  $r = 0.9$ , that is mean the independent variables are almost the same to each other and of consequence, would affect the result on determining the strength of each of the independent variables itself. Table 10 shows the score for the multicollinearity is 0.648 for the audit and monitoring with transparency, 0.572 for the audit and monitoring with professionalism and ethics. For transparency and professionalism and ethics the score is 0.795. Thus, it shows that none of the score is above 0.9 and this independent variables for this study does not have an issue of collinearity.

Table 10

*Pearson Correlation Coefficient Analysis*

		Transparency	Audit and Monitoring	Professionalism and Ethics
Transparency	Pearson Correlation	1	.648**	.795
	Sig. (2-tailed)		.000	.000
Audit and Monitoring	Pearson Correlation	.648**	1	.572**
	Sig. (2-tailed)	.000		.000
Professionalism and Ethics	Pearson Correlation	.795**	.572**	1
	Sig. (2-tailed)	.000	.000	

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

This study then proceeds to perform the multiple regression analyses. Table 11 provides the model summary that shows 0.759. This result shows 75.9% of the variation in effectiveness of the public procurement process is explained either by audit and monitoring, professionalism and ethics and transparency.



Table 11

*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.871 <sup>a</sup>	.759	.739	.22592

a. Predictors: (Constant), Transparency, Audit and Monitoring, Professionalism and Ethics

Table 12 presents the linear relationship between the independent variable with the dependent variable. The results show the p-value for audit and monitoring is (p-value = 0.000), professionalism and ethics (p-value = 0.677) and transparency (p-value = 0.49). This indicates two of the independent have a significantly positive influence on the effectiveness of the public procurement process. this is because the p-value is < 0.05 where (α=0.05). Therefore, the H1 and H3 of the hypothesis develop are supported while the hypothesis of H2 is not supported since the score is above 0.05, and the model is as follows:

$$\text{Effectiveness of public procurement process} = 0.777 + 0.729 (\text{Audit \& monitoring}) + 0.051 (\text{Professionalism \& Ethics}) - 0.051 (\text{Transparency}) + e$$

Table 12

*Multiple Regression Analyses*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.777	.371		2.093	.043
	Audit and Monitoring	.720	.104	.753	6.953	.000
	Professionalism and Ethics	-.051	.121	-.057	-.420	.677
	Transparency	.168	.114	.216	1.474	.049

**Conclusion**

This study examines the factors influencing public procurement process effectiveness in a uniform government agency. Three factors are chosen in this study namely, audit and monitoring, professionalism and ethics, and transparency. The results of this study show that audit and monitoring and transparency influence public procurement process effectiveness. Such findings are in line with previous studies (Rotchanakitumnuai, 2013; Ismail et al., 2018)). On the other hand, the results show that professionalism and ethics do not significantly influence the public procurement process effectiveness, although the relationship is positive. Such result is not consistent with (Magaya and Chidhawu, 2016).

This study is not without limitations. First, the number of respondents involved in this study is only 40. Although Sekaran (2013) noted that this number is acceptable, increasing the number of respondents would provide more robust findings. Secondly, this study only examines three factors influencing public procurement process effectiveness. These three factors contributed 75.9% explanatory factors which is considered good but inclusion of other

factors would be more beneficial in understanding the factors influencing public procurement procedure process.

This findings in this study contributes to the existing literature related to public procurement issues. In addition, the public procurement process is been used by all the government sectors in Malaysia including the state government, federal government, statutory body and authorities, and thus, the findings in this study can be used by the procurement units in all the government agencies department especially to the procurement units at uniform government agencies. This study can also be useful for the public procurement community that involve directly with the procurement process to have a clear picture in term of the perception, attitude and knowledge on how the effective procurement process take place. The outcomes of the research also will be mark by the community in the future regarding the public procurement and how the effective procurement take place.

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