



THE EFFECTS OF PUBLIC PROCUREMENT PRACTICES ON PROCUREMENT PRICES:

A CASE OF SELECTED PROCURING ENTITIES

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Abstract:

The main objective of the study was to assess the effects of public procurement practices on the procurement prices among the selected procuring entities in Dar es Salaam. Specifically, the study aimed at determining the effects of competition, centralization, timely payment, negotiation and integrity on procurement prices reasonableness among the selected procuring entities. The study was carried out at Dar es Salaam with the inclusion of three procuring entities; College of Business Education (CBE), Institute of Adult Education (IAE) and Tanzania Public Service College (TPSC). The study employed convergent mixed research design, where both quantitative and qualitative data were collected from 210 and 20 respondents respectively for triangulation of findings. The study findings indicated that competition, timely payment, negotiation and integrity have significant positive effects on procurement prices reasonableness among the selected procuring entities. However, it was revealed that centralization has insignificant negative effect on procurement prices reasonableness contrary to the study hypothesis. The study recommends more amendments on the public procurement rules, regulations and guidelines so as to warrant the effectiveness of competition, timely payment, negotiation and integrity in the public procurement proceedings for attainment of reasonable procurement prices. Moreover, the study recommends for the government to provide fully support to the policy makers and individual procuring entities in respect to the aforesaid matters.

Keywords:

Public Procurement, Practices, Procurement Prices, Reasonableness

1. Introduction

Efficient use of public resources is one of the major challenges related to public procurement, as public tenders are often faced with problems such as participation of unqualified bidders, inappropriate criteria of evaluating bids, and manipulative setting of qualifications (Hanák and Muchová, 2015). Moreover, since the acquisition of goods, services and works involves the use of public funds that represents a huge volume of government spending; henceforth more attention is needed to ensure there is minimization of procurement costs through attainment of reasonable procurement prices.

However, despite the efforts of the government to make several reforms on the public procurement legislation ranging from PPA 2001 to PPA amendments 2016 to foster procurement efficiency, high procurement costs resulting from high purchasing prices is still a big challenge in the public procurement system (Matto, 2017). Consequently, this necessitates the need for critical analysis of the public procurement practices with regard to the current legislation in attempt to establish improved procurement system that will ensure the attainment of right procurement prices for minimization of procurement costs.

Several studies have examined the effects of centralization, competition and negotiation on the final procurement prices (Baldi and Vannoni, 2014; Luhikula, 2018; Pedersen and Bofin, 2015; Soudek and Skuhrovec, 2016; Zhang et al, 2020). Other studies have looked on the impact of corruption on bidding decision and procurement performance

(Detkova, Podkolzina, and Tkachenko, 2018; Enshassi & Mohamed, 2010; Grega and Nemeč, 2015). However, most of these studies have focused on the final procurement prices that were compared to the estimated procurement prices rather than the actual reasonableness of the procurement prices, while others focused on the suppliers' bidding decision and few assessed the impact of integrity and timely payment on the procurement prices. Moreover, there is limited linkage of theories on explaining the effects of those factors on the procurement prices. This study therefore intends to extend the research framework by taking into account the effects of integrity and timely payment factors on procurement prices reasonableness and integrate institutional theory and principal – agent theory on explaining the effects of these factors on procurement prices.

2. Theoretical Framework

2.1. Institutional Theory

Institutional theory has been used as one of the traditional approaches of examining the public procurement practices. The theory explains about the behaviour and organisational structures based on sociological perspectives (Dunn and Jones, 2010; Tukamuhabwa, 2012). According to Scott (2004), the institutions are configured under three major pillars namely normative, regulatory and cultural cognitive. The normative pillar is associated with social values and norms as the basis for compliance in determining the preferred and right way of doing and leveraging institution activities, while the regulatory pillar centers on the use of procedures, rules, and regulations as the basis for compliance. Moreover, the cultural cognitive pillar deals with common understanding of views, the shared values of the institution and beliefs in the implementation of organisation's operations (Dunn and Jones, 2010; Mrope, 2014).

A fundamental premise of institutional theory is that it explains why institutions often adopt similar responses and practices in implementing their operations, whereby under public procurement all the procuring entities are guided by regulations and rules with the respective laws and the attendant regulations and guidelines governing the public procurement processes and activities. Therefore, under this study the theory is linked to adoption of centralized procurement system, terms of payment aspects particularly in payment time and integrity of procurement personnel and processes in the procuring entities so as to determine and explain their effects on the procurement prices. Consequently, to obtain right or reasonable prices would be the integration of all the three institution's pillars, since the procuring entities have to set preferred way of implementing procurement activities while abiding to the public procurement rules and regulations, with a common understanding on the institutional core values (Eyaa and Oluka, 2011).

Moreover, the three institutional pillars as explained by Scott (2004) determine the organisational culture, organisational incentives, organisational influence and enforcement as the prerequisites of compliance with procurement laws and regulations which is directly related to matters concerned with centralization of procurement activities, timely payment of bidders claims and negotiations practices as stipulated in the given laws and regulation of the public procurement (Mrope, 2014).

2.2. Principal-Agent Theory

The principal-agent theory explains the relationship between a person or entity (the principal) that has contracted another person or entity (the agent) to undertake a responsibility on behalf that capacitates decision making and actions taking impacting the principal. The theory assumes the existence of conflicting interests between the agent and the principal, thus the implementation of assigned activities, may pursue personal interests resulting to agency problem (Bawole and Adjei-Bamfo, 2020; Jensen and Meckling, 1976).

Public procurement, the large part of public expenditure is considered as an essential tool by the government regarding its association with the effective governance pillars: improving the delivery of public services, value for money and enabling private sector growth. Consequently, effective systems for public financial management is one among the significant concerns to optimize the use of resources buy reducing costs in procurement activities for economic stability (Bawole and Adjei-Bamfo, 2020).

In respect to existence of agency problem in which the agents (bidders) might be motivated to act in their own best interests contrary to those of their principals (procuring entities) and the need to achieve the goal of reducing procurement costs by obtaining reasonable prices that correspond to the quality of goods or services offered (value for money), the procuring entities must select competent bidders and ensure that they enter into contracts with better terms and conditions. To ensure proper selection of bidders (agents), the procuring entities encourage high

competition with the use of competitive procurement methods, and before contract signing they conduct negotiations with lowest/highest evaluated bidders on matters ranging from procurement prices to delivery and payment terms.

3. Hypothesis Development and Empirical Studies

3.1. Competition and Procurement Prices Reasonableness

The procurement methods used in public procurement are mainly categorized into competitive and non-competitive methods, whereby there is a great emphasize on the use of competitive methods particularly competitive tendering. In tendering the suppliers, service providers, consultants, and contractors are submitting priced bids for goods, services or works so as to compete for contract award in respect to the invitation made by the procuring entity, centered on ensuring reasonable procurement prices, transparency and equal opportunities to bidders in the procurement proceedings (PPA, 2011).

According to Hanák and Muchová (2015) the procuring entities have to encourage the participation of many bidders as possible in the tender with establishment of appropriate qualification requirements, since a considerable number of bids in the procurement proceeding has a significant role in the overall project efficiency by achieving lower procurement prices in contract awards. Consequently, such strategy makes bidders to adjust their offer prices in view of increasing their chances of winning the procurement contracts.

However, despite the findings of other studies (see: Detkova et al., 2018; Grega and Nemeč, 2015; Hanák and Muchová, 2015; Tas, 2020) that competition has a major influence on obtaining reasonable procurement prices among procuring entities, there is still a challenge on ensuring effective implementation of competitive tendering. The challenge comes due to the fact that the procuring entities cannot determine the number of bidders to participate in the procurement, nevertheless can encourage or discourage the participation of potential bidders through qualification criteria, transparency, fairness and integrity in the procurement proceedings (Soudek and Skuhrovec, 2016). Hence, competition is one among the important factors for determination of procurement prices.

Hypothesis 1: Competition is positively related to procurement prices reasonableness.

3.2. Centralization and Procurement Prices Reasonableness

Procurement centralization refers to the procurement system in which all the procurement activities of the procuring entity are implemented by the institution headquarters or a dedicated central unit within, which includes the act of making decisions (what, when and how) to procure the requirements so as to satisfy the needs of the user departments (Baldi and Vannoni, 2014). The centralization system has been widely used in both public and private sector due to various benefits such as; the reduction of maverick purchasing and duplication, the decrease of the number of procurement transactions, the great potential of hiring skilled and experienced personnel, obtaining of higher service and product quality experience, better access to markets and resources, and the reduction of procurement prices due to the improvement of bargaining power in the enforcement of negotiations attributed to economies of scale (Albano and Sparro, 2010; Thai, 2009).

Fundamentally, centralized procurement conception forms on the aggregation of public bodies' demand, which enable the procuring entities to gain scale benefits from three procurement synergies; economies of scale, economies of information and economies of process. The economies of scale is centered on the aggregation and standardization of procuring entities' demand to get quantity discounts, while economies of information results from having the complete knowledge of where and when to acquire the requirements from specific providers in the market which is the basis for learning better means of negotiations with the suppliers and economies of process is centered on the use of procurement professionals who can acquire the requirements more efficiently through the deployment of knowledge, skills and experience (Baldi, 2014; Kauppi and Van Raaij, 2015; Petersen, Jensen and Bhatti, 2020; Walker et al., 2013). Therefore the study seeks to determine the extent to which procuring entities use centralized procurement systems to obtain reasonable procurement prices.

Hypothesis 2: Centralization is positively related to procurement prices reasonableness.

3.3. Timely Payment and Procurement Prices Reasonableness

According to Mrope (2018) late payment to tenderers has been stated as one of the major reasons for a limited participation of the private sector firms in the procurement opportunities offered by procuring entities, since the tenderers' decision to participate in the procurement proceedings involves the consideration of the financial capabilities of their clients in terms of payment and compensation policies (Enshassi and Mohamed, 2010).

Due to the recognition of the contribution made by private sector particularly the local firms in the public procurement, there is an emphasis in making commitments on funds to be used in the acquisition of goods, services and works as well as to ensure timely payments to respective tenderers so as to support their growth and fulfillment of contractual responsibilities. The regulations stipulate that all the procuring entities have to ensure that payments are made promptly and properly in respect to the terms and conditions of contracts, so as to maintain the soundness and credibility of the procuring entities (PPR, 2013).

However, despite the emphasis made by the public procurement act and its regulations and other guidelines as issued by PPRA, still timely payment to suppliers, consultants, service providers and contractors has been a challenge in the public procurement, which has resulted to the provision of inflated prices by the bidders as a business defensive mechanism to preserve the actual value of the contract entered at the particular time. Thus, the study ought to assess the current status of procuring entities on timely payment to bidders and how it affects the procurement prices offered.

Hypothesis 3: Timely payment is positively related to procurement prices reasonableness.

3.4. Negotiation and Procurement Prices Reasonableness

To increase the efficiency of public procurement, the procuring entities are allowed to undertake negotiations as the means of resolving differences with the lowest evaluated bidder once approved by the tender boards in matters relating to alteration of technical details, quantities reduction due to budgetary reasons, minor amendments of contract special conditions, payment and mobilization arrangements, delivery terms, methodology for contract implementation, and most importantly the reduction of procurement prices (PPR, 2013).

Negotiations as the mitigation strategy for high prices in the public procurement has proven success in the reduction of procurement prices. Nevertheless, the procurement prices for the same goods, services, and works vary considerably among and within the procuring entities, proving the presence of differences in capabilities, lack of procedures compliance in the negotiation processes, and lack of framework contracts to be applicable to all the procuring entities for the provision of homogeneous procurement conditions and pricing structure by bidders (Moye-Holz et al., 2019; Zhang et al., 2020). To achieve and maintain lower procurement prices in the public sector, a great emphasis should be put on negotiation capabilities and compliance to procedures, strategies and guidelines as provided and approved by relevant authorities.

Hypothesis 4: Negotiation is positively related to procurement prices reasonableness.

3.5. Integrity and Procurement Prices Reasonableness

Integrity principle is two-fold in public procurement, since there is the integrity of the procurement process, and also the integrity of procurement practitioners as the major guardians of the process in the procuring entities. The integrity translates to the reliability of the procurement process and practitioners, who are always supposed to be perceived as honest, responsible and trustworthy in the implementation of their procurement activities in respect to the governing laws, principles, rules and guidelines as issued by relevant authorities (Lynch, 2014).

Lack of integrity to the procurement practitioners creates a high possibility of malpractices in the procurement activities, whereby highly corrupt environments limit the participation of potential bidders in public procurement tenders, which instantly increases the procurement prices due to reduction in overall competition among bidders. Moreover, the corrupt public officials could demand bribes and other benefits from the potential bidders, who in turn might end up bidding inflated prices so as to cover the extra cost incurred in the facilitation of obtaining the contract awards (Detkova et al., 2018; Heggstad and Frøystad, 2011).

Hypothesis 5: Integrity is positively related to procurement prices reasonableness.

4. Methodology

The study adopted the quantitative design, whereby the data were collected from 210 respondents that included the members of tender board, procurement officers and user departments through structured questionnaire. The sample size was obtained basing on the number of variables in the study and the statistical data analysis techniques employed in the study (Tabachnick and Fidell, 2013). Simple random sampling technique was used to select respondents from three procuring entities namely College of Business Education (CBE), Tanzania Public Services College (TPSC) and Institute of Adult Education (IAE) located at Dar es Salaam. The reliability of data was confirmed by assessing the internal consistency of the scale of the measurement instrument so as to ensure that the study produces the same results whenever tested repetitively. The Cronbach's coefficient alpha was used to measure the internal consistency scale, which indicated that all the variables had recommended Cronbach's coefficient alpha of above 0.7 (Pallant, 2016). The validity of the study was assessed by ensuring that the collected data represent the content under the study, whereby delphi technique and pilot study were used. The analysis of quantitative data employed both descriptive and inferential statistics using the statistical package for the social sciences (SPSS) version 26. Particularly, the software was used to run descriptive statistics, factor analysis and multiple regression analysis for hypotheses testing.

5. Findings and Discussions

5.1 Factor Analysis

Due to the fact that both the independent and dependent variables were measured by several items, which were either modified from previous studies or developed basing on public procurement practices experience necessitated the usage of principal component analysis (PCA) as a method of factor analysis before hypotheses testing. PCA was used in conjunction with varimax rotation method for data extraction so as to reduce the number of items per each variable for which have no strong similar patterns of responses with the rest of the items in creating the constructs. The results of PCA were used to formulate the final independent and dependent variables used for multiple regression analysis.

Table 1. Kaiser-Meyer-Olkin and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.806
Bartlett's Test of Sphericity	Approx. Chi-Square	4167.043
	df	496
	Sig.	.000

Source: Field Data (2021)

The independent variables subjected to PCA were competition, centralization, timely payment, negotiation and integrity while the dependent variable was procurement prices reasonableness. The results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were 0.806 and significance ($p=0.000$) respectively with (Chi-square 4167.042, df 496), indicating that the data collected were suitable for running the factor analysis (see table 1).

Table 2. Rotated Component Matrix

Items	Component						Variable Computation
	1	2	3	4	5	6	
Comp1	0.509						(comp1+ comp2+comp3+ comp4)/4 Competition
Comp2	0.877						
Comp3	0.896						
Comp4	0.820						
Integ1		0.727					(integ1+integ2+integ 3+integ4+integ5)/5 Integrity
Integ2		0.798					
Integ3		0.833					
Integ4		0.817					

Integ5		0.699					
Neg2			0.802				(neg2+neg3+neg4+neg5)/4 Negotiation
Neg3			0.760				
Neg4			0.786				
Neg5			0.744				
Cent1				0.727			
Cent2				0.759			
Cent3				0.748			
Cent4				0.687			
Pmt1					0.813		(pmt1+pmt2+pmt3+pmt4)/4 Timely payment
Pmt2					0.835		
Pmt3					0.783		
Pmt4					0.558		
Pric1						0.641	(pric1+pric2+pric3+pric4+pric5+pric7)/6 Procurement prices reasonableness
Pric2						0.572	
Pric3						0.599	
Pric4						0.652	
Pric5						0.693	
Pric7						0.812	

Source: Field Data (2021)

The factor loading value of ± 0.50 was used as the cut off point in the study as recommended by Hair et al., (2006). All the items with loading below the cut off point (comp5, neg1, cent5, pmt5 and price6) were removed from forming the final variables for further analysis. The remained items in component 1-6 with factor loading ≥ 0.5 were retained and used to compute the final independent and dependent variables (see table 2). The retained items explained a total of 64% of the variance of the tested model hence it was considered enough for further analysis. It was found that competition contributed 25% of the model variance while centralization contributed 12%, payment time 10%, negotiation 6% and procurement prices reasonableness contributed 5% of the model explained variance.

5.2 Hypothesis Testing

Before the actual testing of the research hypotheses, the data collected were tested to check the multiple regression assumptions. The assumptions tested were data normal distribution, linearity, outliers and multicollinearity, the results indicated that there were no violation of aforesaid assumptions. Hence, the multiple regression analysis was run to determine the effects of independent variables (competition, centralization, timely payment, negotiation and integrity) on the dependent variable (procurement prices reasonableness), and the following outputs were obtained;

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721 ^a	.520	.508	.560

a. Predictors: (Constant), Integrity, Centralization, Competition, Negotiation, Timely payment

b. Dependent Variable: Procurement prices reasonableness

Source: Field Data (2021)

The model summary as shown in the table 3 helps to indicate how much of the variance in the dependent variable (procurement prices reasonableness) is explained by the independent variables (competition, centralization, payment time, negotiation and integrity) that is indicated by the value of R-square. In this case the value of R-square is 0.520

equivalent to 52%, which means that, the model that includes competition, centralization, payment time, negotiation and integrity as independent variables explains 52% of the variance in the procurement prices reasonableness among the selected procuring entities. This indicates that, the model results are quite good since the independent variables included in the model explained the variance of more than 50%.

Table 4. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	69.236	5	13.847	44.176	.000 ^b
Residual	63.944	204	.313		
Total	133.180	209			

a. Dependent Variable: Procurement prices reasonableness

b. Predictors: (Constant), Integrity, Centralization, Competition, Negotiation, Timely payment

Source: Field Data (2021)

The results of anova analysis (see table 4) are used to test if the model can be generalized in the population by assessing the statistical adequacy of the model through the P-value and F-value. In this case the P-value is less than 0.001, hence met the ≤ 0.05 cut off point, indicating that, the model can be generalized as the regression equation is the best predictor for the population values. Moreover, the F value is 44.176 whereby the higher the F-value the more significant the model is. Hence the sample selected was enough for generalization of the model results.

Table 5. Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	.439	.228		1.919	.056
Competition	.342	.043	.403	7.966	.000
Centralization	-.064	.047	-.067	-1.347	.180
Timely Payment	.116	.052	.130	2.222	.027
Negotiation	.117	.047	.139	2.489	.014
Integrity	.333	.047	.379	7.114	.000

a. Dependent Variable: Procurement prices reasonableness

The regression coefficients as shown in the table 5 indicate the results of the hypotheses formulated on whether they are accepted or rejected with respect to the significance and insignificance of the results as described in table 6;

Table 4.14 The Summary of Hypotheses Testing

Hypothesis	Independent Variable	Dependent Variable	Status
H ₁	Competition	Procurement prices reasonableness	Accepted
H ₂	Centralization	Procurement prices reasonableness	Rejected
H ₃	Timely payment	Procurement prices reasonableness	Accepted
H ₄	Negotiation	Procurement prices reasonableness	Accepted

H ₅	Integrity	Procurement prices reasonableness	Accepted
Source: Field Data (2021)			

5.2.1 The effect of competition on procurement prices reasonableness

To determine the contribution of each independent variable and be able to make comparisons among all independent variables, one should read the values of standardized coefficients beta (β) which has to be ≤ 1 . Furthermore, in order to know if the independent variable has statistically significant contribution, the significance value (P-value) has to be ≤ 0.05 . For this case the independent variable competition had a significant positive relationship with the procurement prices reasonableness at ($\beta = 0.403$, $P < 0.001$). Hence the hypothesis one (H01) was accepted. Moreover, among all the independent variables this is the factor that has the highest contribution in determining the procurement prices reasonableness compared to other factors since it has the highest standardized coefficient value ($\beta = 0.403$). The significance of competition on influencing procurement prices reasonableness among procuring entities, is attributed to the fact that there's a preference of using competitive procurement methods in public procurement. Given that they tend to promote transparency, efficiency, and limit favoritism, resulting to obtaining reliable suppliers who offer reasonable prices and delivery the required qualities at the agreed time. The study findings are comparable with the findings of Grega and Nemeč (2015) who found that competitiveness has great impact on the final price, that increasing number of competitors in public procurement is, in average, decreasing prices. Moreover, Luhikula (2018) found that competitive bidding had a significant contribution in the attainment of value for money, thus suggesting the adherence to principles of competitive bidding to minimize project costs. In respect to the principal-agent theory, the procuring entities will always encourage the participation of many bidders as possible in the tender with establishment of appropriate qualification requirements, since a considerable number of bids in the procurement proceeding has a significant role in the overall procurement prices reasonableness Hanák and Muchová (2015). Moreover, the competition helps the procuring entity to obtain the competent bidders whom they can easily control and monitor during the implementation of contracts obligations as per agreed terms and conditions.

5.2.2 The effect of centralization on procurement prices reasonableness

The conclusion is unexpectedly as contrasts the study hypothesis and other previous findings (see: Baldi and Vannoni, 2014; Israel, Kazungu, and Mchopa, 2019) who found that centralized procurement systems experience lower procurement prices. However, the study findings are comparable with the findings of Petersen, Jensen and Bhatti (2020) who found that centralized procurement is not associated with lower purchasing prices rather than offering other benefits, such as economies of process and compliance. The insignificant relationship between centralization and procurement prices reasonableness is due to the fact that most of the procuring entities use hybrid procurement system as centralized procurement is not perceived by most entities to significantly influence procurement performance due to bureaucratic procedures. The bureaucratic procedures are said to prolong procurement processes, whereby the bidders tend to inflate their prices as a contingency plan. Considering the institutional theory, most of the procuring entities focus on the regulatory pillar that centers on the use of procedures, rules, and regulations as the basis for compliance. Consequently, ending up on forming the aggregation of user departments' demand, which enable the procuring entities to gain scale benefits in economies of scale and economies of process rather than in economies of information which could help much in obtaining reasonable prices.

5.2.3 The effect of timely payment on procurement prices reasonableness

The standardized coefficients of the regression analysis indicate that, there is a significant positive relationship at ($\beta = 0.130$, $P = 0.027$) between the independent variable (timely payment) and the dependent variable (procurement prices reasonableness). This implies that an increase in timely payment factor accounts for the positive increase in the procurement prices reasonableness among the selected procuring entities. Hence the third hypothesis (H3) was accepted. The study findings are similar to the findings of Enshassi and Mohamed (2010) and Mrope (2014) who found that timely payment of bidder's claims is one of the most critical factors affecting the bid/no bid decision and the rate of prices quoted during the procurement proceedings. The significance of timely payment factor on influencing procurement prices reasonableness is supported by the fact that the suppliers tend to set their prices with respect to

buyer's willingness and ability to pay in cash or credit terms. As for the case of private procurement, the organizations procure in cash basis where they usually obtain low or market price while in public procurement, the organizations procure at credit terms of which most of the times they end up obtaining requirements at the price level higher than the market price. In view of the institutional theory, the procuring entities that are well built on the normative pillar will always create a great sense and basis for compliance in determining the preferred and right way of doing and leveraging institution activities that include timely payment of bidders' claim with respect to the contract agreements.

5.2.4 The effect of negotiation on procurement prices reasonableness

The result shows that, there is a positive significant relationship between negotiation and procurement prices reasonableness among the selected procuring entities where ($\beta = 0.139$, $P = 0.014$). This indicates that, an increase of 1 standard deviation in negotiation leads to an increase in the procurement prices reasonableness by 0.139 standard deviations. Hence, the fourth hypothesis (H04) was accepted. The study findings are alike to the findings of Zhang et al., (2020) and Moye-Holz et al., (2019) who found that negotiation is a significant determiner of procurement prices offered by bidders. The significance of the study findings are attributed to the fact that the rules and regulations of the public procurement allow the procurement entities not only to conduct negotiation with the lowest evaluated bidder but also stipulate the appropriate procedures to be followed in the negotiations proceedings. Principal-agent theory explains the necessity of negotiations due to the existence of agency problem where the bidders (agents) might be driven to marginalize their profit margins through quoting higher prices. Hence, the procuring entities need to recommend and conduct negotiations so as to obtain reasonable prices that will be fair to both parties, to avoid the bidder's gain under the expense of the entity. The goal is to reduce procurement costs by maintaining right quality of goods or services offered.

5.2.5 The effect of integrity on procurement prices reasonableness

It was also found that integrity is positively related to procurement prices reasonableness at ($\beta = 0.379$, $P < 0.001$). This implies that an increase in integrity of the procurement process and personnel accounts for the positive increase in the procurement prices reasonableness among the selected procuring entities. Hence the fifth and last hypothesis of the study (H5) was accepted. Moreover, integrity had the second highest contribution in determining the procurement prices reasonableness after competition with ($\beta = 0.379$). These findings are similar to those of Baldi and Vannoni (2014), Detkova et al., and Heggstad and Frøystad (2011) who also found that integrity is one of the major key factors for bidders to provide reasonable procurement prices. Integrity translates to reliability of both the procurement processes and involved procurement organs. The integrity of the procurement process assures confidence in the public procurement process, whereby the public procurement practitioners should be perceived, at all times, as honest, trustworthy, responsible and reliable.

6. Conclusion and Recommendations

Based on the study findings, it is evident that, the reasonableness of procurement prices among the procuring entities is crucial to the public procurement, because it allows proper management of financial resources with regard to the existing requirements that determine the range of procurement activities to be done. The findings conclude that the major determinants of procurement prices reasonableness with respect to public procurement practices are the level of competition among bidders, conduction of negotiations with the most competent bidders to be awarded the contracts, timely payment of suppliers' claims particularly when the credit terms of payment are involved as well as ensuring the integrity of the procurement process and personnel. Hence, more amendments should be made on the public procurement rules, regulations and guidelines so as to warrant the effectiveness of competition, timely payment, negotiation and integrity in the public procurement proceedings for attainment of reasonable procurement prices. Moreover, for the procuring entities that still use centralized procurement system as a major procurement structure of their procurement activities, now it is high time to shift to the new paradigm of hybrid procurement system in which the centralized and decentralized systems are harmonized to complement each other. As for case of future studies, the researcher suggests that more research should be done to ascertain the range of determinants of procurement prices reasonableness specifically by expanding the research model by taking into account other factors that were not included in this study. Moreover, the focus could be broadened by including the private sector as well, and investigate the

mediation effect of integrity on competition and timely payment on influencing the reasonableness of procurement prices.

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