



Procurement Planning on Value for Money among selected districts in Southern Province, Rwanda

Nshimyumuremyi Aimable^{1*}, Olutayo K. Osunsan^{1**}, Irau Florence¹,
Kabagambe Francis Comet¹,
Nakato Sarah¹

¹College of Economics and Management, Kampala International University, Uganda
Corresponding Author: Nshimyumuremyi Aimable

ABSTRACT: This study investigated the effect of Procurement Planning on Value for Money (VFM) among Selected Districts in Southern Province, Rwanda. The study was limited to the following objectives: i) to determine the effect of procurement packaging on value for money among Selected Districts in Southern Province, Rwanda ii) to establish the effect of procurement method on value for money Among Selected Districts in Southern Province, Rwanda and iii) to find out the effect of procurement scheduling on value for money Among Selected Districts in Southern Province, Rwanda. The study used descriptive survey design. From a target population of 191 procurement officers a sample size of 129 respondents was determined using Slovine's formula, the response rate however resulted in 121 respondents. The main research instrument was questionnaires. The study revealed that procurement packaging, procurement method and procurement scheduling all significantly affects value for money. The study concluded procurement planning affects value for money. The study made the following recommendations: the need for procurement officers to use good procurement packaging where they allow bidders to submit bids for one or multiple lots; the need for procurement officers to embrace all procurement methods depending on the circumstance and the nature of the project so as to be as comprehensive as possible since each procurement method has its own advantage; the need for procurement officers to involve stakeholders and superiors in project scheduling so as to streamline any inconsistency. The contribution to knowledge of the current study is that procurement packaging, procurement method and procurement scheduling affect value for money significantly, though other scholars found mixed results in the same.

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I. INTRODUCTION

In Rwanda, Value for Money is promoted in public procurement through developing a more effective working relationship with key suppliers to allow both departments and suppliers to get maximum value from the assignment by identifying opportunities to reduce costs and adopt innovative approaches, reducing the cost of buying goods or services by reformating procurement and finance processes, and reducing the level of stocks held (Myowela & Ergete, 2012). There is lack of knowledge of value for money among the procurement officers in the procurement and disposal unit of districts in the Southern Province of Rwanda. However, due to lack of competence of most procurement officers in the Southern Province, there has been a number of problems in the procurement units hence affecting timely delivery of government projects. This is because majority of the district projects lack comprehensive procurement planning and monitoring of implementation of the plans (Ndoli, 2017). A recent review carried out by the Ministry of Local Government (2016) indicates that Southern Province has implemented only 35 per cent of planned projects, however, procurement officials insist that 63 per cent worth Rwf 10 billion were implemented. The projects which had poor procurement planning and affecting their value for money included: construction and maintenance, installation of traffic lights and construction of health centres. On the other hand, about Rwf 2.5 billion had been earmarked for the construction of health centres in the districts of Gisagara, Huye, Kamonyi, Muhanga, Nyanza, Nyamagabe, Nyaruguru, Ruhango, but none was built. For example, Rwf 1.9 billion was allocated to road maintenance and construction in Huye, Nyanza, Muhanga in 2012 and was expected to be complete by 2017, but by 2018 and only 55% of the work was ready. This delay was principally due to lack of technical expertise in procurement planning. The

current study investigated whether procurement planning in terms of procurement packaging, procurement method, and procurement scheduling in used for purposes of considering value for money Among Selected Districts in Southern Province, Rwanda. This study therefore investigated the effect of procurement planning on value for money in South province, Rwanda.

II. RELATED LITERATURE

2.1 Procurement Planning

Procurement planning is the primary function that sets the stage for subsequent procurement activities (Basheka, 2009). A mistake in procurement planning has wide implications for local governance, measured from the two indicators of accountability and participation. According to John and Kenya(2016), the ideals of planning suggest that procurement planning can be implemented in an atmosphere of complete harmony. He adds that, as a function, procurement planning endeavors to answer the questions of what do you want to procure; when to procure it; where to procure them from; when will the resources be available; the methods of procurement to be used; how timely procurement or failure will affect the user of the item(s); the procuring and disposing entity; efficient in the procurement process; and the people to be involved in the procurement. According to Ambe and Badenhorst-Weiss (2014), a good procurement plan will go one step further by describing the process one will go through to appoint those suppliers contractually. Whether you are embarking on a project procurement or organizational procurement planning exercise, the steps will be the same. Procurement is thus one part of the commissioning process. It refers to a specific method of purchasing services which involves tendering for a contract. Sometimes it is more appropriate for a public body to fund a service through the provision of a grant, but then it will have less control over the precise outcomes to be delivered. Public Procurement Act requires procuring entities to plan their procurements. A procurement plan helps procurement entities to achieve maximum value for expenditures and enables the entities to identify and address all relevant issues pertaining to a particular procurement before they can publicize their procurement notices to potential suppliers of goods, works and services (Public Procurement and Disposal Act (PPDA), 2005). Before any procurement transaction is conducted, Procuring Entities must determine their procurement needs which must be consistent with their organization's objectives. In this regard, the Procuring Entity should assess whether or not, a particular procurement is necessary. The assessment should take account of; the need to ensure that the Procuring Entity uses its resources effectively and efficiently; how the proposed expenditure would contribute to the entity's desired outputs; and the procuring entity's overall procurement philosophy in accordance with the provisions of the Public Procurement and Disposal Act (PPDA, 2005).

2.2 Value for Money

Value for money (VfM) is defined as the optimum combination of whole of life costs and quality of the good or service to meet the user's requirement (Moralles et al. 2015). Value for money (VFM) is not about achieving the lowest price. It is about achieving the optimum combination of whole life costs and quality. Traditionally VfM was thought of as getting the right quality, in the right quantity, at the right time, from the right supplier at the right price. This concept has been updated to obtaining better quality of goods or services in more suitable quantities, just in time when needed, from better suppliers at prices that continue to improve (World Bank Report, 2013). It is also often described in terms of the 'three Es' economy, efficiency and effectiveness: economy minimizing the cost of resources for an activity ('doing things at a low price'); efficiency performing tasks with reasonable effort ('doing things the right way'); effectiveness the extent to which objectives are met ('doing the right things'). Value for money is derived from the optimal balance of benefits and costs on the basis of total cost of ownership. As such, value for money does not necessarily mean that a tender must be awarded to the lowest tenderer (Civil Service College, 2010). Value for money is a term generally used to describe an explicit commitment to ensuring the best results possible are obtained from the money spent.

2.2.1 Procurement Packaging on Value for Money

Lagoze et al., (2016) in their study investigated the effect of procurement packaging on value for money in selected manufacturing companies in Ghana. The study used descriptive survey design and a sample size of 346 respondents among whom were technical and supervisory staff. The study used regression analysis and found a significant effect of procurement packaging on value for money. The study found a significant effect when procurement requirements are grouped within a procurement category for the purpose of acquiring them under a single contract, on value for money; however there was no significant effect of dividing procurement requirements into multiple lots on value for money. However, Amade et al., (2016) in his study on the importance of procurement packaging on value for money in the hospitality sector in Nigeria revealed that there was no significant effect. The study used survey design and a population size of 208 respondents who were mostly employees of the selected companies. Data analysis was done using regression analysis. The study

established that procurement packaging using multiple contractors was more important in achieving value for money than using a single contractor. This was because multiple contractors were found to reduce unnecessary resource waste compared to single contractor.

On the backing of these literatures the following null hypothesis is postulated:

Ho₁: There is no significant effect of procurement packaging on value for money Among Selected Districts in Rwanda.

2.2.2 Procurement method on value for money

According to Luyimbazi (2014), the right procurement method ensures that value for money is realized. This is because, using the right procurement method ensures that quality is observed, time of delivery is observed and the general costs of the service or the product is not exorbitant. In other words, it is important to know when the contracting company wants the goods delivered or services rendered. This knowledge therefore gives the contracted company to determine the best procurement method to use so as to provide the goods or the services on time, in the right quality and at cost friendly rates. This move indeed brings about realization of value for money in a positive way.

Pettijohn and Neville (2015) conducted a study on the relationship between procurement methods and value for money in Ethiopia and found that there was a significant relationship. The study looked at open tendering, restricted tendering, request for quotation and two-stage tendering as the independent variables, while value for money was the dependent variable. The study found that open tendering, and two-stage tendering had significant relationship with value for money, while request for quotations and restricted tendering had no significant relationship with value for money.

Furthermore, Chegugu and Yusuf (2017) carried out a study on the effect of procurement methods on value for money in manufacturing companies in South Africa using descriptive survey and a study population of 384 respondents. The procurement methods commonly used by the selected manufacturing companies included open tendering, restricted tendering, request for proposal and two-stage tendering. The study found that only open tendering, and request for proposal had significant effect on value for money. However, restricted tendering and two-stage tendering had no significant effect on value for money. The study concluded that selection of appropriate procurement methods leads to achievement of value for money.

On the basis of these literatures the following null hypothesis is drawn:

Ho₂: There is no significant effect of procurement method on value for money Among Selected Districts in Rwanda.

2.2.3 Procurement Scheduling on Value for Money

Naoum and Egbu (2016) argue that supply scheduling brings value for money if scheduling is followed correctly until the end of the decade. The author argues that proper scheduling saves time and resources and ensures that value for money is respected and well understood. Delays in the process of requesting information; delays in the process of the Procurement Review Committee; delayed evaluation / approval of the use of a justice monitor; delayed approval of the procurement plan or contract planning and prior approval; etc. Lead to the waste of a lot of resources and the bad outcome of the output that directly affect the value for money. This is because, a project that should have taken two years at a cost of \$ 2 million will now take 3 years at a cost of \$ 3.5 million. In his study, Rolfstam (2015) found that scheduling supplies is very important in enhancing value for money because it provides a list of all requirements that the entity will obtain over a period of time. From this, the procurement schedules are developed and timetables are developed to implement each step in the procurement process until the contract is awarded and the requirements are met. Scheduling allows the consolidation of similar requirements under a single contract or the division of a condition into several packages of contracts for value for money. Furthermore, Lysons and Gillingham (2003) in their study also posit that from the requirements on the procurement plan, the procuring entity can forecast any need for additional inputs. Procurement plan allows for the monitoring of the procurement process to determine how actual performance compares with planned activities, and thus alert the relevant departments to adjust their procurement plan accordingly for effective project implementation. The plan enhances transparency and predictability of the procurement process. On the other hand, Sangster and Wood (2016) conducted a study on the relevance of procurement scheduling on value for money among construction companies in India. The study used cross-sectional survey and a sample size of 237 employees, including managers and support staff. Questionnaire was the main research instrument and data analysis was done using regression. The study found that scheduling in terms of complete cycle of project needs had a significant effect on value for money than scheduling work content and drafting work schedule. Furthermore, the study found that employee competence in project scheduling had a significant effect value for money.

On the basing on deductions from these literatures the following null hypothesis is drawn:

Ho₃: There is no significant effect of procurement scheduling on value for money Among Selected Districts in Rwanda.

2.3 Procurement Planning and Value for Money

Mchopa et al. (2014) conducted a study on contracts management and value for money in public procurement of works in Muccobs Company. The study was undertaken by using a case study design whereby purposive and random sampling techniques were used to pick a sample of 60 respondents while questionnaires, interviews and documentary review were used to collect data. The findings showed that contracts contained all the necessary required terms and conditions to guarantee value for money and it was established that contracts were effectively executed and managed adequately when compared to the terms. Also, it was determined that management of time, quality and costs resulted into effective contract management which contributes highly to the achievement of value for money. However, in some contracts there were signs of ineffectiveness that include variations, inadequate use of defect liability period and extensions of time which jeopardized the achievement of value for money. Therefore, it was concluded that effective management of procurement contracts was essential for achievement of value for money (Mchopa et al. 2014). Nsiah-Asare and Prempeh (2016) conducted a study on the measures of ensuring value for money in Public Procurement: A Case of Selected Polytechnics in Ghana. The main data collection instrument employed in this study is the structured questionnaire. The study employed the purposive and stratified sampling technique. The finding revealed that inadequate skilled personnel in the procurement sector and inadequate measures for monitoring and evaluation of the procurement policy to ensure VFM are major challenges in the public procurement. It was recommended that to ensure value for money, management support for VFM programme at all levels of administration should be encouraged and procurement regulatory authorities in collaboration with public entities (Polytechnics) must ensure compliance through rigorous monitoring and evaluation of the procurement policy to ensure VFM (Nsiah-Asare & Prempeh, 2016).

III. METHODOLOGY

The study used descriptive survey design. This is a type of research design that provides a picture of a situation as it naturally happens (Cooper & Schindler, 2006). Furthermore, the study relied more on quantitative approach. The target population was 191 participants (i.e. procurement manager, and procurement personnel) from the procurement and disposal unit of the Southern Province of Rwanda (Human Resource Department, 2016). The southern Province has Eight (8) Districts. The sample size of 129 respondents was determined using Slovene's formula. The study employed closed ended questionnaires which were measured using a 5-Likert Scale; where 1=strongly disagree; 2=disagree; not sure; 4=agree; and 5=strongly agree. The data collection tool in the survey was questionnaires which covered the following topics: procurement packaging, procurement scheduling, procurement method, and value for money (in terms of price, efficiency and effectiveness). The validity was determined using content validity index (CVI) and was 0.88. Reliability was determined using Cronbach's alpha (α). According to Sekaran (2003), $\alpha \geq 0.70$ is considered reliable. As for this study, the α -value for procurement planning was 0.788, while for Value for Money was 0.730, thus implying that the instruments of both variables were reliable. Data analysis was conducted using inferential statistics such as regression analysis to determine the effect of procurement packaging on value for money (equation 2); the effect of procurement method on value for money (equation 3); and the effect of procurement scheduling on value for money (equation 4).

The equation to determine the effect of independent variables on Value for Money was represented as:

$$Y = a + bx \dots\dots\dots (1)$$

Where; Y=dependent variable; a=intercept; b=slope; x= independent variable.

$$VfM = a_0 + b_1(PP) \dots\dots\dots (2)$$

$$VfM = a_0 + b_2(PM) \dots\dots\dots (3)$$

$$VfM = a_0 + b_3(PS) \dots\dots\dots (4)$$

Where, PP=procurement Packaging; PM=procurement method; PS=procurement scheduling; and VfM=value for money; a_0 =when the intercept is zero; b_1 =regression line for procurement packaging, b_2 =regression line for procurement method; b_3 =regression line for procurement scheduling; ϵ =Error Term.

The null hypothesis was tested using the level of significance ($p \leq 0.01$); the decision rule was that: if the p-value is less or equal ($p \leq 0.01$), it would be considered significant; otherwise, the null hypothesis would be rejected.

IV. RESULTS AND DISCUSSION

4.1 Regression Analysis

This section captures the results of regression analysis to determine the effect of the independent variables on the dependent variables.

Table 1: The Effect of Procurement Packaging on Value for Money among Selected Districts in Southern Province, Rwanda

Variable	Unstandardized (B)	beta	Std. Error (SE B)	Standardized beta (β)	t	p
(Constant)	2.208		0.300		7.370	0.000
Procurement Packaging	0.399		0.090	0.375	4.419	0.000
R²	0.141					
Adjusted R²	0.134					
F	19.530					
Observations	121					

The results in table 1 revealed that procurement packaging significantly affect the value for money by a variance of 14.1% ($R^2=0.141$, $p=0.000$). This rejects the null hypothesis that there is no significant effect of procurement packaging on value for money and upholds the alternative hypothesis. Furthermore, the study found that the regression model was the best fit for predicting the effect of procurement packaging on value for money ($F=19.530$, $p=0.000$). Similarly, the study revealed that every unit change in procurement packaging will significantly affect the variance in value for money by 37.5% ($Beta=0.375$, $p=0.000$).

Table 2: The Effect of Procurement Method on Value for Money among Selected Districts in Southern Province, Rwanda

Variable	Unstandardized (B)	beta	Std. Error (SE B)	Standardized beta (β)	t	p
(Constant)	1.679		0.241		6.955	0.000
Procurement Method	0.646		0.084	0.578	7.719	0.000
R²	0.334					
Adjusted R²	0.328					
F	59.580					
Observations	121					

The results presented in table 2 revealed that procurement method significantly affect value for money by a variance of 33.4% ($R^2=0.334$, $p=0.000$). This rejects the null hypothesis that there is no significant effect of procurement method on value for money and upholds the alternative hypothesis. Furthermore, the study found that the regression model was the best fit for predicting the effect of procurement method on value for money ($F=59.580$, $p=0.000$). Similarly, the study revealed that every unit change in procurement method will significantly affect the variance in value for money by 57.8% ($Beta=0.578$, $p=0.000$).

Table 3: The Effect of Procurement Scheduling on Value for Money among Selected Districts in Southern Province, Rwanda

Variable	Unstandardized (B)	beta	Std. Error (SE B)	Standardized beta (β)	t	p
(Constant)	2.647		0.214		12.377	0.000
Procurement Scheduling	0.328		0.079	0.357	4.168	0.000
R²	0.127					
Adjusted R²	0.120					
F	17.376					
Observations	121					

The results presented in table 3 revealed that procurement scheduling significantly affect value for money by a variance of 12.7% ($R^2=0.127$, $p=0.000$). This rejects the null hypothesis that there is no significant effect of procurement scheduling on the value for money and upholds the alternative hypothesis. Furthermore, the study found that the regression model was the best fit for predicting the effect of procurement scheduling on value for money ($F=17.376$, $p=0.000$). Similarly, the study revealed that every unit change in procurement packaging will significantly affect the variance in value for money by 35.7% ($Beta=0.357$, $p=0.000$).

Table 4: The Effect of Procurement Planning on Value for Money among Selected Districts in Southern Province, Rwanda

Variable	Unstandardized (B)	beta	Std. Error (SE B)	Standardized beta (β)	t	p
(Constant)	0.965		0.311		3.107	0.002
Procurement Planning	0.872		0.105	0.605	8.285	0.000
R²	0.366					
Adjusted R²	0.361					
F	68.647					
Observations	121					

The results presented in table 4 revealed that procurement planning significantly affect the variance in value for money by 36.6% ($R^2=0.366$, $p<0.01$). This implies that using the proper procurement packaging, procurement method, and procurement scheduling affect value for money in a great way. Furthermore, the study revealed that a single unit change procurement planning will significantly affect value for money by a variance of 60.5% (Beta=0.605, $p<0.01$).

V. CONCLUSIONS AND RECOMMENDATIONS

The study found that procurement packaging significantly affect value for money. This is because procurement packaging aims at presenting two types of bids to the bidders. This type of procurement planning ensures that different categories of procurement activities are presented to the bidders so that they can select which one they have capacity to perform. The procurement packing is presented in single and multiple categories. In order words the contractor can apply for one or multiple contracts depending on his/her competence in providing quality service/goods at the best rate possible. Procurement method was found to significantly affect value for money. This type of procurement planning provides the procurement unit with multiple methods of procuring services/goods. They only employ the most suitable method depending on the circumstance and the nature of project that is to be delivered. Hence if the procurement unit has the competence to select the most appropriate method at the most affordable price and which can be able to give the best quality output with minimum input, then value for money can be realized. Procurement scheduling was found to significantly affect value for money. This implies that this type of procurement planning strives on the fact that proper project scheduling would guarantee a realization for value for money. For instance when the procurement unit provides a complete statement of the projects needs and services or plan the schedule of work so that it is achievable with the available resources, value for money can be registered. All in all, the study concludes that procurement planning significantly affects value for money. This therefore implies that the procurement officers of the districts in the Southern Province of Rwanda should practice proper procurement planning if they must realize value for money in their projects.

The study made the following recommendations:

The study found a significant effect of procurement packaging on value for money. It was recommended that procurement officers use good procurement packaging where they allow bidders to submit bids for one or multiple lots. When bidders submit bids for multiple lots, each contractor will be able to perform a given project activity hence reducing unnecessary mistakes that a single contractor encounter because of work overload.

The study similarly found that procurement methods significantly affect value for money. It was recommended that the district procurement unit should ensure that they employ the most effective procurement method that are cost friendly for value for money to be realized.

The study also found that procurement scheduling significantly affect value for money. It was recommended that the district procurement unit should ensure that they present the schedule of works to stakeholders, so as to correct any inconsistencies or unacceptable variations. This can be done by the involvement of stakeholders, superiors and contractors in project scheduling so as to streamline any inconsistencies.

Several studies have been done in the subject of project planning and value for money but with mixed results (Ogubala & Kiarie 2014; Maktubu, 2013; Mchopa et al. 2014; Nsiah-Asare & Prempeh 2016). However, this study found that all the measures of procurement planning, that is, procurement packaging, procurement method and procurement scheduling affect value for money significantly. The new knowledge added by this study is that in District setting as was seen in the eight districts in the Southern Province of Rwanda, value for money needs proper observance through best use of proper procurement packaging, procurement method, and procurement scheduling.

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