EFFECT OF SUPPLIER SELECTION CRITERIA ON PERFORMANCE OF THE PROCUREMENT FUNCTION OF COUNTY GOVERNMENTS IN KENYA: THE CASE OF NYAMIRA COUNTY

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Abstract

The purpose of this study was to establish the influence of price structure on performance of the procurement function. The study was based on three theories, the Just in time theory, gap model and the theory of constraints. The study employed case study research design and targeted procurements officers at the County offices in Nyamira and selected staff of firms supplying good and services to the county. It also targeted the Chief procurement officer at the County. Simple random sampling was used to select employees of the county and contractor firms while purposive sampling was used on chief procurement officer. Questionnaires were administered on both employees and document checklist were the data collection instruments. Data was analyzed using descriptive analysis; Pearson's correlations and regression analysis to test hypotheses were also used. The data was then presented in tables with the aid of SPSS. The findings of the study showsupplier selection (β=.383, t=4.968, p<0.000) had a significant influence on performance of the procurement function in Nyamira County. The study therefore recommends: The county government should continue to strategically examine price structures of suppliers in conformity to the Procurement and Disposal Act 2015. The suppliers themselves should ensure they offer competitive prices to stand a significant chance of being selected.

Keywords: Price Structure, Supplier Selection, Procurement

INTRODUCTION

Supplier selection has become one of the fastest growing areas of management especially in the last few years. To survive in the intensely competitive global economy, it is often critically important to not only develop existing suppliers but also to discover new suppliers. Although study in this area started in 1960s, it is in the 90s that scholars gained much interest in the area of supplier selection (Bai and Sarkis, 2009). With heightened global competition that has reduced the profit margins of most companies, cost cutting has become the option and is being focused in logistics which has become the single largest and most important activity of most firms, both in the public and private sectors. As such, quite a significant portion of organizations' budgets is spent in these activities. Supplier selection in particular is crucial in management of a supply chain. The decision is one of the most fundamental and important decisions made by buyers and organizations. This is because supplier selection and management can be applied to a variety of suppliers throughout a products' life cycle from initial raw materials acquisition to end-of-life service providers (Bai and Sarkis, 2009).

In Kenya, about 60% of government revenue is spent on procurement. The Kenyan government is a major buyer of goods and services in the country. This it does through various public institutions spread out all over the country. In view of this the government has put in place various procedures and processes to follow when conducting public procurement. The Kenyan constitution, (2010) has many specific provisions relating to public procurement as a process as cited in article 227. The public procurement and disposal Act 2005, was enacted to streamline and speed up the operation of public institutions by making the public procurement process more transparent, ensure accountability and reduce wastage of public resources. As public institutions play a significant role in value addition, creation of employment, demand for goods and services and contribution to the national wealth. The procurement process must conform to the laid down regulations.

Before a supplier is selected by public institutions in Kenya prior performance is one of the key issues considered. Supplier selection is in accordance with the Public Procurement and Disposal Act, 2005 and the Public Procurement and Disposal Regulations of 2006. Regulation 51 (1) (i) states that, "Contracts shall be awarded to the lowest evaluated bidder…" Other criteria include "compliance with specifications, technical acceptability, compliance with delivery schedules, and local servicing and availability of spare parts." Quality and reliability are also supplier selection determinant for most Kenyan public institutions (ibid).

Typical criteria for supplier selection could be price structure, delivery which entails timeliness and cost, product and services quality. It is the ongoing process of searching and evaluating process to find a supplier of essential goods and services required in an organization for normal operations.

According to Benyoucef *et al.,* (2013), supplier selection process is continuous in order to upgrade the existing variety and typology of their product range. It is necessitated by the fact that

most products generally have short lifecycle of 3 to 4 years. However, how far the influence of price structure criterion on the procurement process has been investigated in County Governments remain significantly unknown hence the need for this study.

Statement of the Problem

The effect of supplier selection on the procurement function by public institutions like counties have been quite a mystery among local suppliers. Few know the criteria the institutions look out for in suppliers and consequently fail to bid for contracts from government. All through, the procurement process, price structure criterion is perceived to be riddled with secrecy and favoritism, (Bonhestaut, 2008). Certainly, this not only complicates the realization of the government's stated objective of seeing increased participation of local suppliers and vendors in doing business with it hence spurring growth and employment opportunities across the country, but also raises concern over the social justice in the spending of taxpayers' funds given the massive amounts of money involved, (Bonhestaut, 2008). But most importantly, there has been complaints about some suppliers getting undue advantage and getting contracts when they clearly did not meet the requirements of the supplier selection standards. What these criteria are and how they then influence the procurement function thus becomes necessary to investigate.

Previous studies have been done on the factors affecting supplier selection and impact on performance of organizations and businesses in the private sector. Nadir H. et al (2012) did a study and elicited the main determinants of supplier selection as quality, financial stability, technical expertise and supplier profile. Although there are studies on supplier selection determinants in procurement, most of these focus on Private Sector Agencies. There are hardly any studies focusing on price structure criterion determinants in Public Sector Organizations and particularly, the county governments, hence the need for this study. It was on this premise therefore that this study focused on the effect of supplier selection on performance of the procurement function of county governments in Kenya.

Hypotheses

H_{01}: Price structure does not have a significant influence on performance of the procurement function in Nyamira County

H_{02}: Lead-Time does not have a significant influence on performance of the procurement function in Nyamira County

H_{03}: Service quality does not have a significant influence on performance of the procurement function in Nyamira County

H_{04}: Supplier business profile does not have a significant influence on performance of the procurement function in Nyamira County

Literature Review

Theoretical Framework

The study was based on two theories, the Just in time theory and the theory of constraints.

Just in Time Theory

Just in time (JIT) is a production strategy that strives to improve a business' return on investment by reducing in-process inventory and associated carrying costs.(Goran Svensson, 2001) Just in time is a type of operations management approach which originated in Japan in the 1950s. It was adopted by Toyota and other Japanese manufacturing firms, with excellent results: Toyota and other companies that adopted the approach ended up raising productivity (through the elimination of waste) significantly. To meet JIT objectives, the process relies on signals or (Kanban Kanban) between different points, which are involved in the process, which tell production when to make the next part. Kanban are usually 'tickets' but can be simple visual signals, such as the presence or absence of a part on a shelf. Implemented correctly, JIT focuses on continuous improvement and can improve a manufacturing organization's return on investment, quality, and efficiency. To achieve continuous improvement key areas of focus could be flow, employee involvement and quality (Dalton, 2013).

Theory of constraints

Theory is an overall management philosophy introduced by Eliyahu M. Goldratt in his 1984 book titled The Goal,that is geared to help organizations continually achieve their goals. Goldratt adapted the concept to project management with his book Critical Chain, published 1997. An earlier propagator of the concept was Wolfgang Mewes in Germany. The underlying premise of theory of constraints is that organizations can be measured and controlled by variations on three measures: throughput, operational expense, and inventory. Inventory is all the money that the system has invested in purchasing things which it intends to sell or use. Operational expense is all the money the system spends in order to turn inventory into throughput.

Empirical Review

Price and Cost criterion

The aim of this criterion is to identify vital element of cost associated with purchase. The most common cost related with a product is purchase price, transportation cost and taxes (Stanley and Gregory, 2001). Operational costs are also being considered during the supplier selection. The operational cost includes transaction processing; cost of rejects etc. but it requires more effort to estimate. Thus, cost is very important criterion for selection of right suppliers. The cost factor has been measured based on the importance of the following cost/price dimensions in supplier selection in telecommunication industry: raw material cost, cost due to delay, cost of inspection, after sales service, rework cost, engineering cost and labor cost. Profit maximization cannot be

achieved without the cost minimization. The Factors (attributes) affecting this criterion include; The firm always requires the minimum price of the product to increase the profitability. The firm therefore must find a low-cost supply base where it can minimize manufacturing cost related to the production of the Product. Basically, price containment leads to supplier attractively. This contains the lengthy distribution channel cost, transport expenses, inventory cost, handling and packaging Cost, damages during transportation and insurance costs. Since every business enterprise is out to procure at least cost possible, cost management brings a lot of business to suppliers who offer least cost, holding other factors constant.

Timely Delivery criterion

The ability of the supplier to follow the predefined delivery schedule is always the prime criteria for selection in this fast moving world. This means that suppliers who keep their promises are easier and profitable to work with.

This is the time between order and placement of material and the actual delivery. The shorter the lead time, the better the supplier. Every purchasing firm will be comfortable when the lead time is shortest possible. Long lead time has the impression that the specific supplier is less efficient or he just has more customers than he can serve thus delaying deliveries (Beamon, 2010).

Lead time reduction has long been considered a fundamental objective for overall business improvement (Forrester 1961) and a cornerstone for lean thinking (Ohno 1988a, Shingo 1988). Lead time can be understood as an anticipated time to complete a process. Lead time is sometimes confused with cycle time. Cycle time is the time it actually takes for a job to go from the start to the end of the process. It is the "real" time it takes for a job to go through a process; thus, it may vary from job to job. In construction for instance, there are two main types of lead time, (1) customer and (2) construction lead time. Customer lead time is the time between order placement and fulfillment. Construction lead time is the longest "allowable" cycle time (Hopp and Spearman 2010).

Supplier's Profile criterion

The performance and past history of the suppliers help in taking decisions for its selection. The components of a suppliers profile are summarized below:

The financial status of the supplier can be analyzed by getting the information about the annual turnover of the Supplier and their financial structure based on the past history. The economic status of the supplier's country may affect the currency exchange rate, local price control and so Forth. This can result in higher hidden costs for international sourcing and into during the supplier selection. A good supplier should have a good financial base so that incase of delayed payments, supply is not hindered (Awino, 2012).

The response of the customers towards the supplier is one of the important factors to decide the performance of the supplier. Suppliers with good customer base should be preferred than the others. Customer numbers cannot lie, where the customers are, the deal is good. The performance history of the supplier should be analyzed carefully keeping in mind the

competitive nature of the supplier, its past production schedule, response to market, and its ability to make commercial relations and business references. It is easy to get a profile of ageing supplier easier than new suppliers. Research shows that, old suppliers are more experienced and more stable in business (Kibe, 2013).

Methodology

The study applied a case study research design; as such it was an intensive descriptive and holistic analysis of Nyamira County. It was an investigation of single entity in order to gain insight into the larger cases. The population of the study consisted of the 206 employees working for the 6 main departments at the Nyamira county office. It also targeted the senior procurement officer of the county bringing the total number of targeted population to 207. Stratified Sampling was used to select the departments of human resource, finance, administration, health, procurement and education. Simple random sampling was then used to select 106 staff members and management. The sample size for the study was calculated according to the formula recommended by Yamane, (1967), which is as below;

$$n = \frac{N}{1+Ne^2}$$

Where,   n is size of sample

N is population of sample

e^2 is probability of error

Therefore the sample size for this study was:

$$n = \frac{206}{1+206(0.05)^2}$$

$$n = 106 \text{ Staff and management}$$

A structured Likert scale type questionnaire was used. According to Kothari (2014) likert scale questionnaire is best for measuring attitudes. A structured questionnaire is preferred for collecting data. The questionnaire was administered to Nyamira County procurement officers and supplying employees. The researcher used document checklist to carry out a critical analysis of recorded information relating to public procurement and Disposal Act. According to Oso et al (2005), documents checklist was used to obtain unobtrusive information at the pleasure of the researcher and without undue interruptions. The researcher analysed data using descriptive analysis. The data collected was systematically organized to facilitate analysis. The response in the questionnaire was assigned numerical value to aid in processing. Numbers were then assigned to the close ended questionnaires.

Data was then converted to numerical codes representing attributes of variables. Code categories are exhaustive and mutually exclusive. Data was then described quantitatively using descriptive statistics which included frequencies, means, and percentages through tables,. This was done with the aid of a computer programme-Statistical Package for Social Sciences (SPSS) version 22 for windows. Regression analysis were used to test the hypothesis.

Regression Model- $Y_0 = \beta_0 + \beta_1 (X_1) + \beta_2 (X_2) + \beta_3 (X_3) + \beta_4 (X_4) + e$

Where the variables are defined as:

Y_0- Performance of Procurement function

X_1- Price Structure

X_2- Timely Delivery

X_3- Service quality

X_4- Supplier Profile

e- Error term

Results and Discussion

Correlation Analysis

As part of the analysis, Pearson's Correlation Analysis was done on the Independent Variables and the dependent variables. Summative scales were used to run both regression and correlation. The results is as seen on Table 1.

Table 1 Correlation Analysis

		Procurement function	Quality service	Price structure	Supplier Profile	Lead Time
Procurement function	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	106				
Quality service	Pearson Correlation	.655**	1			
	Sig. (2-tailed)	.000				
	N	106	106			
Price structure	Pearson Correlation	.525**	523**	1		
	Sig. (2-tailed)	.000	.000			
	N	106	106	106		
Supplier Profile	Pearson Correlation	.688	.423**	.417**	1	
	Sig. (2-tailed)	.000	.000	.002		
	N	106	106	106	106	
Lead Time	Pearson Correlation	.711**	.235**	.178	.557**	1
	Sig. (2-tailed)	.000	.005	.000	.000	
	N	106	106	106	106	106

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

Pearson correlation analysis was conducted to examine the relationship between the variables. The measures were constructed using summated scales from both the independent and dependent variables. As cited in Wong and Hiew (2005) the correlation coefficient value *(r)* range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. However, according to Field (2005), correlation coefficient should not go beyond 0.8, to avoid multicollinearity. Since the highest correlation coefficient is 0.711 which is less than 0.8, there is no multicollinearity problem in this research (Table 4.9).

All the independent variables had a positive correlation with the dependent variable with lead time having the highest correlation of (r=0.711, p< 0.01) followed by supplier profile with a correlation of (r=0.688 p< 0.01) and then quality service with a correlation of (r=0.655 p< 0.01), price structure had the least correlation of(r= 0.525 p< 0.01). This indicates that all the variables are statistically significant at the 99% confidence interval level 2-tailed. This shows that all the variables under consideration have a positive relationship with the dependent variable.

Regression Analysis

Since the measures that are used to assess the primary constructs in the model are quantitative scales, regression analysis can be used to achieve this end. Regression analyses are a set of techniques that can enable us to assess the ability of an independent variable(s) to predict the

dependent variable(s). As part of the analysis, Regression Analysis was done. The results is as seen on Table 2,3 and 4

Table 2 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862[a]	.737	.631	.106

a. Predictors: (Constant), price structure, lead time, quality service, and supplier profile

b. Dependent Variable: performance of procurement function

From table 2 it is clear that the R value was .862 showing a positive direction of R is the correlation between the observed and predicted values of the dependent variable. The values of R range from -1 to 1 (Wong and Hiew, 2005). The sign of R indicates the direction of the relationship (positive or negative). The absolute value of R indicates the strength, with larger absolute values indicating stronger relationships. Thus, the R value at .862 shows a stronger relationship between observed and predicted values in a positive direction. The coefficient of determination R^2 value was 0.631. This shows that 63.1 per cent of the variance in dependent variable (performance of procurement function) was explained and predicted by independent variables (price structure, lead time, quality service, and supplier profile)

Table 3 ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	202.700	4	47.046	98.391	.000[a]
Residual	12.788	228	.663		
Total	215.488	232			

a. Predictors: (Constant), price structure, lead time, quality service, and supplier profile

b. Dependent Variable: performance of procurement function

The F-statistics produced (F = 98.391.) was significant at 5 per cent level (Sig. F< 0.05), thus confirming the fitness of the model and therefore, there is statistically significant relationship between price structure, lead time, quality service, and supplier profile, and performance of procurement function.

Table 4 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.667	.361	.287	5.668	.000
Price structure	.375	.078	.383	4.968	.000
Lead time	.198	.065	.293	3.593	.004
Service quality	.274	.065	.334	5.383	.000
Supplier Profile	.309	.064	.362	4.129	.000

a. Dependent Variable: performance of procurement function

The t-value of constant produced (t = 5.668) was significant at .000 per cent level (Sig. F< 0.05), thus confirming the fitness of the model. Therefore, there is statistically significant relationship between price structure, lead time, quality service, and supplier profile, and performance of procurement function. Thus, the four hypotheses:

Table 5 Hypotheses Testing

Hypothesis	Test	Results	Remarks
H_{01}: Price structure does not have a significant influence on performance of the procurement function in Nyamira County	Regression .000	Significant	Rejected
H_{02}:Lead-Time does not have a significant influence on performance of the procurement function in Nyamira County	Regression .004	Significant	Rejected

H$_{03}$: Service quality does not have a significant influence on performance of the procurement function in Nyamira County	Regression .000	Significant	Rejected
H$_{04}$: Supplier business profile does not have a significant influence on performance of the procurement function in Nyamira County	Regression .000	Significant	Rejected

Conclusions and Recommendations

Conclusion of the study

It can therefore be concluded that consideration of the supplier price structure had improved procurement function in Nyamira County. Also, it can therefore also be concluded that long lead time at County Government of Nyamira had a negative effect on the procurement function. It can also be concluded that lack of effective service quality had a significantly negative influence on supplier selection for enhanced procurement function in Nyamira County. Finally, therefore, supplier profile had a significant positive influence on the procurement function in Nyamira County.

Based on the objectives and conclusions, this study recommends; the county government should continue to strategically examine price structures of suppliers in conformity to the Procurement and Disposal Act 2015. The suppliers themselves should ensure they offer competitive prices to stand a significant chance of being selected. The County Government of Nyamira management should reduce procurement lead time to conform to the PPDA 2015. The management should do this by computerizing the process to speed up the procurement process and ensure that suppliers are keen on lead time to enable them get selected as suppliers. Supplier management should introduce an effective quality service quality strategy that will improve the services offered. This strategy should involve the aspects of reliability, empathy, assurance and responsiveness and this can be done through seminars and talks. Supplier management should enhance their profile by engaging in more service and product provision and ensure they keep away from negative dealings and corruption which will then improve their reputation for supplier selection and effective procurement function.

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