

Original Research Article

The Effect of Supplier Selection Methods on Value for Money

Abstract

The study investigated the relationship between supplier selection methods in relation to their effects on value for money. The study adopted an explanatory, case study approach with a cross-sectional survey research design that used primary data collection instrument of questionnaire. Data was collected from a sample of 117 employees in the institution drawn from departments of Finance, Procurement, Stores and Pharmacy with a random sampling technique. The study further established that Supplier Quality Commitment exerts an insignificant effect on Value for Money but exerts significant effect on Supplier Management Ability and Supplier Financial Capacity. The researchers recommended that the Tamale Teaching Hospital should assess the suppliers on the basis of their quality commitments, the financial capacities and the management abilities and ensure that they select these suppliers who can collectively be brought by the Tamale Teaching Hospital to bear on enhancing a significant effect on value for money.

Key Words: Supplier Selection Methods, Value for Money, Procurement, Ghana Health Service.

GEL Codes: H57, H41, I12, H83

1. Introduction

The main objective is to examine the effect of supplier selection methods on value for money Ghana Health Service with a scope that focused on the Tamale Teaching Hospital (TTH). Specifically, the study sought to investigate the relationship between supplier selection methods and value for money, examine the relationship between supplier quality commitment and value for money, to assess the relationship between supplier financial capacity and value for money in TTH, and to examine the relationship between supplier management ability and value for money in TTH. The health delivery system undertakes many projects for a specific aim to be achieved. Fundamentally these aims can be achieved in an organization if value for money is attainable. Selection of a supplier for the delivery of goods and services are complicated activity and relies mainly on the suitability of the tender specifications. Research works on supplier' selection can be traced back to the early years of the 1960s and hitherto several selection methods have been prescribed to be used for the selection of the most capable supplier, ranging from linear programming to nonlinear programming. Thus, the increasing numbers of supplier selection standards signify how significantly the procurements of goods and services have contributed to the economic growth of any country.

Suppliers provide goods and services to institutions to aid operations. They play critical role and are key partners in ensuring the smooth operations of the organisation/institutions. Health institutions by their nature of operations rely so much on supplies to properly function, from consumables through equipment to physical infrastructure. It is obvious that without reliable sources of supply the operations of such institutions will be disrupted thereby putting human lives in danger. Health institutions require basic medical equipment for their daily operations such as essential drugs, surgical kits, detergents, diagnostics equipment, and protective equipment, among others. Various forms of suppliers are needed to provide these tools and supplies to support the effective operations of the institutions. Reliable sources of supply come in handy to ensure that high- quality of goods and services are supplied at good prices to the institutions. In addition, reliable suppliers would ensure that there is continuous supply to the institutions even at difficult times. These foster smooth operations of the health institutions. Organizations have an essential role to play in the overall performance of a project. Zolghadri (2011) stated that selecting the most appropriate supplier and their assessments are relevant procurement processes for a project's prosperity, which adds to the effective management of the supply chain. However, the selection of a supplier requires considerable effort in any entity Entity-supplier integration rests on appropriate systems and coordinated mechanisms to succeed whereby the higher the level of integration, the more significant the role of suppliers in project decision-making, and different levels of integration will have distinct impacts on the project's success. The interests in the relationships between entities and suppliers have increased in many sectors; however, there is still a dearth of holistic conceptual frameworks. There is a demand for activities that require a detailed and systemic comprehension of how suppliers/contractors are integrated into project-based supply chains. As in many other sectors, health institutions are confronted with supplier selection issues. Many institutions have established institutional policies on supplier selection (Phochanikorn and Tan, 2019).

This study is significant in contributing to the discussions on best practices regarding supplier selection and how they impact on value for money so as to reduce wastage and leakages of public funds especially in developing countries. The knowledge gap to be filled is how to promote value for money in procurement processes so as to promote socio-economic development of Ghana. The study will reveal to government agencies and the academic community whether tackling the supplier selection methods differently from current practices will promote the judicious use of public funds. The study will also form basis for future researches to dig deeper into the best supplier selection practices to adopt by governmental units to promote economic growth and development. Furthermore, findings and recommendations from this research will provide a guide to policy makers in the enactment and review of laws and policies of the various Ministries, Departments and Agencies. Finally, the findings from the research will guide procurement professionals in practice through their consultancies and capacity building activities. Finally, the researcher also sought to improve his knowledge and understanding of the procurement and supplier selection processes.

Against the foregoing background, the study sought to examine the effect of supplier selection methods on value for money in the Ghana Health Service.

1.1 Problem Statement

Amonoo (2014) investigated the importance that institutions attached to supplier selection criteria in public procurement practices in Ghana but concentrated only on some specific criteria of delivery, quality, price, and warranty claims. Stephen et al (2016) investigated in a study to develop a decision support model to evaluate suppliers in the health care service delivery in Nigeria but they as well focused on product quality supplied as the most important criterion in the selection of suppliers in the delivery of health care service. Obinda and Gichure (2017) analyzed the effect of supplier selection on supply chain management in Kenya.

In a descriptive study, their study focused on the relationship between communication of procurement personnel and supplier selection. Nyaberi et al (2018) investigated the role of supplier selections on performance of manufacturing firms but they contextually focused their study on Small Scale Enterprises (SMEs) in Kenya and established that quality standards of products, financial position of the supplier, efficiency in service delivery, flexibility of supplier and market reputation have significant relationship with procurement performance in the SMEs.

In the light of the foregoing, it is evident that there is a research gap owing to the fact much of the research conducted, on the relation between supplier selection and the value for money, either appeared to have focused on the specific attributes of the products supplied in terms of quality, delivery and safety or was geographically confined to specific settings in the world or that much of the focus of the supplier selection and evaluations was centered on the lowest bidder whereby these methods exhibited some inherent problems.

This research therefore sought to focus on investigating the relationship between attributes used in the supplier selection and value for money within the health sector of the Ghanaian setting.

2. Literature Review

2.1 Conceptual Review

2.1.1 Supplier Quality Commitment (SQC)

According to Yeung and Chin (2019), supplier quality commitment is a management and proactive approach that has been established by management to ensure that there is a continuous delivery of quality improvement, in a collaborative fashion between from suppliers to buyers. Teli et al (2017) have noted that supplier quality management enables the manufacturer to put in place systems that can help the organization to employ supplier quality scores and use them as the basis for the categorization of suppliers for effective selection on the basis of quality. In this regard, Yeung and Chin (2019) have equally that it is essential, as part of supplier quality commitment process, for the buyers to understand the circumstances of their suppliers and thus look for improved ways of reducing quality deficiencies in the supply chain process. This also becomes feasible by revamping operational matters in quality issues so that automated systems can enable companies to proactively track and resolve quality problems.

Fletcher (1992) have defined supplier quality commitment as including the approaches by management used to define specific quality parameters to suppliers and accompanied with other quality indicators used to monitor supplier quality profiles. According to Yeung and Chin (2019), supplier quality commitment envelopes all that are essential for the organization in continuously improving quality by self-assessing whether or not it has put in place mechanisms that can manage its supplier quality deliveries. As part of the organizations drive in this process, Fletcher (1992) have further observed that supplier quality commitment includes methods used by management to ensure that the entity's quality requirements are met by suppliers and these may include audits and reviews of processes, inspection of product samples, certification and testing of supplier quality standards and processes as required in the supply chain.

2.1.2 Supplier Management Ability (SMA)

Nayak et al (2011) have defined supplier management ability as the effort by the entity to improve its performance in relation to value for money by assessing the management efficiency of its suppliers. According to Njeru et al (2014) supplier management is a business process in which in which an entity's management assesses the extent to which vendors familiarize themselves to activities in the supply chain so as to deliver the best procurement value. The ultimate goal for a firm is for management to be able to assess the managerial ability of its suppliers to be able to reduce product lead times, better improved goods and services, faster product development and delivery of goods and services on time (Nayak et al, 2011).

Lajara and Lillo (2005, as cited in Mandiyambira, 2011) highlighted that supplier management ability are buyer-supplier relationships that are focused on selection the best suppliers by examining them closely as part of long term working relationships and based on mutual needs. In this regard, Njeru et al (2014) have also conceded that, even though supplier quality and delivery are still very essential selection attributes supplier management strategies have long term implications to be considered in the supply chain. Choi and Hartley (1996, as cited in Nayak et al, 2011) have further defined that once suppliers become part of well managed supply chain within the value networks of the organization, it may lead to an ever-lasting effect of competitiveness within the supply chain because the entity could be able to identify the best suppliers on the basis of their ability to deliver according to expectations of the entire supply chain. Thus, in this regard, supplier management ability is the capacity of the suppliers to

identify the needs and expectations of the buying entity and deliver in accordance with their expectations in the supply chain.

2.1.3 Supplier Financial Capacity (SFC)

According to Pamela (2013, as cited in Kariuki, 2018), supplier financial capacity is a key factor which determines the financial ability of the supplier to deliver on the procurement function. Mbeche and Gichanga (2021) stated that supplier financial competency includes the qualities that enable the supplier to meet the requisite finances that would enable them to deliver and meet the expectations of the buyer. The Australian department of finance has provided that any financial viability assessment of suppliers should consider the nature of goods and services supplied, the level of complexity and the nature of technology required for the procurement. (Kariuki, 2018) Pamela (2013) emphasized supplier financial viability or capacity as being very essential determinant in the procurement function. Kiage (2019, as cited in Mbeche and Gichanga, 2021) has as well noted that the best indication for financial capacity as part of procurement performance is the ability of the supplier to provide best value for money on the purchased products.

2.1.4 Value for Money (VFM)

Prowle et al (2016) have defined VFM as being been an essentially key aspect of public services management and that a traditional impression about VFM in public services has been the 3 Es – Economy, Efficiency and Effectiveness. According to the Bato Pele (2007, as cited in Nsiah-Asare et al, 2016) VFM is basically achieved when resources are used economically and efficiently in public services. VFM essentially involves any consideration made in implementing government policies whilst achieving the best return from the use of public resources so as to achieve the right benefits for users of state resources (Bauld & McGuinness, 2006 as cited in Nsiah-Asare et al, 2016). According to Dimitri (2013), public services, in their recent attempts to improve on VFM, have gradually changed to procuring resources on the basis of not only price, quality and quantity but more on best VFM where the focus is on both the monetary and non-monetary aspect of the services provided.

Nsiah-Asare et al (2016) have similarly provided that VFM is all about the optimum combination of whole life cost and quality so as to achieve the needs of end users of the product and is usually enshrined in the price of the item and how much it can economically cost the buyer.

2.2 Theoretical Review

2.2.1 The Stakeholder Theory

Abrams (1951, as cited in Yusoff and Alhaji, 2012) posited the stakeholder theory revolves around the fact the corporate entity seeks to strike a balance between the interests of diverse parties who are affected by the activities of the entity. In this context, the theory views that the interests of the various stakeholders in the supply management of TTH should be properly identified and harnessed to ensure that all stakeholders like the suppliers, the government, the quality inspectors, the procurement and other units of the TTH, are all widely involved in the supply chain process so as to enhance value for money. Ntim et al (2017) stated that whilst the stakeholder perspective places greater emphasis on identifying and managing key stakeholders of the entity, the theory of legitimacy provides socially led requirement for motivation in the organization, which suggests that key stakeholders in the TTH ought to be properly motivated to play their roles in relation to procurement performance and the creation of value for the hospital.

The pluralistic model, as identified with the stakeholder theory, provides that the corporation should ensure that it serves and accepts the diverse interests of all stakeholders so as to help make the corporation more effective and legitimate. They also argued that the social entity model within the stakeholder theory views the corporation as not a private entity but as a public property established by legal and political processes for pursuing collective goal within the community. Freeman (1984, as cited in Mahrani and Soewarno, 2018) has postulated that the real purpose of the company is to ensure that the needs of all stakeholders are met by the entity, especially those that are affected by the organization and also affect the entity in various ways as can be evidenced in the relationships between them. In this context, the theory views that the TTH ought to have a defined purpose of making sure that the various departments of the hospital, the government, the supplier and all other stakeholders are well assessed in relation to their needs to the extent that these could be brought to bear on using the procurement function to enhance value for money. Scott (2001, as cited in Rodriguez, 2016) has stated that all social participants tend to seek legitimacy in the organization, which gives rise to legitimate category of stakeholders who hold the views that they have valid claims to realize from the organization.

2.2.2 The Agency Theory

Daily, Dalton and Canella (2003, as cited in Yusoff and Alhaji, 2012), stated that the corporation is reduced to two participants whose interests are divergent from each other because humans are too concerned to shove off their interests to achieve the interests of others in the organization. Agents are the managers and the principals are the investors and the board of directors acts as monitoring mechanisms (Mallin, 2004 as cited in Yusoff and Alhaji, 2012). Thus, the theory is of the view that management of TTH might be tempted to divert institutional rewards and benefits in their own favor at the expense of government who is their employer, which requires the board of directors of TTH to trigger the monitoring mechanisms on management as appropriate. Jensen and Meckling (1996, as cited in Orozco et al 2018) stated that small boards have more managerial control which can help improve the performance of the managers and thus reduce the agency problem. In this context, the theory views that the board of TTH could deal better with the agency problems and enhance the accountability of management if board membership is maintained with lower numbers. According to Kurniaty et al (2019), the agency problem can prevent the organization from achieving its goals owing to the separation between ownership and control. The separation can be dealt with by aligning the interests of the government as a principal with the expectations of management to bridge the agency gap.

Cornel and Alan (as cited in Kurniaty et al, 2019) have also observed that there are three sources of the agency problem: the manager has the tendency to demand luxurious facilities and rights in decision making; the manager might also make risky investment decisions and that the manager could also shy away from taking investment risks, which could affect the fortunes of the organization. In this context therefore, the theory views that if the agency problems between the principals and the agents are not properly managed by the board of TTH, there could be adverse effects on the procurement function because the management of the TTH might be overly selfish in making decisions to protect their exposure to risks and not that of the hospital. Salehi et al (2018) noted that the agency theory considers the creation of a strong committee like the audit committee in the board so as to reduce the agency costs; this is because it could improve internal controls and enhance monitoring of management in the entity to be able to deliver on organizational mission. In this context therefore, the theory views that the creation of value for money from supplies of goods and services to TTH has an essential link with effective monitoring of internal controls by the board, which could lead to the reduction or elimination of

the agency cost by aligning the interests of management to government and ensure that they work to procure the best value for the hospital.. In this perspective, the theory views that the TTH board, representing the government as principals, keeps an important monitoring eye on management to effectively solicit the required goods and services for the hospital, with a view to creating and maximizing value for money for the hospital.

3.2 Empirical Review

3.2.1 Supplier Quality Commitment and Value for Money

Otieno (2017) investigated the impact of supplier quality management on procurement performance. He deployed an explanatory research approach with a descriptive research design in a primary study of 160 employees of Sony Sugar Ltd. With a deployment of questionnaire to sampled respondents, it was empirically found that the supplier commitment on quality improved efficiency and effectiveness of the procurement function. Samson et al (2013) investigated the influence of supplier quality management on organizational performance; they employed a descriptive research design in an analysis of primary data and established that there is a positive effect between supplier quality management, customer loyalty, reduced opportunity costs and lead times. Krop and Iravo (2016) investigated the impact of supplier selection process on performance of procurement function in public sector; they used the regression model in a descriptive study of twenty-five procurement personnel within West Pokot County government. They established from their findings that, quality of goods from suppliers who were able to disseminate quality commitment, significantly reduced wastages, in enhancing efficiency, and enhanced value for money which is related to procurement performance. Amonoo (2014) conducted a thesis on the significance institutions attach to supplier selection on public procurement in Ghana; the study deployed a descriptive research design with primary research instrumentation on a sample of 60 respondents and empirically established that focus on supplier quality and delivery capabilities are important for the supplier selection process relative the Value for Money (VFM). Oriri and Bichanga (2015) investigated the influence of quality management processes on procurement performance. They adopted a case study research design with a descriptive research approach in a sample of 50 employees drawn from upper management and procurement personnel. With correlation analysis, they established that supplier quality management has a significant relationship with cost savings (economy) and inventory flow (efficiency). Kariuki et al (2018) researched into the influence of supplier selection of procurement performance of technical institutes of Trans Nzoia County. In an explanatory study of 210 employees, data was analyzed with the use of regression and correlation techniques with a view to establishing the relation between the study variables. They found that supplier quality commitment has significant effect on value for money as part of procurement performance.

3.2.2 Supplier Management Ability and Value for Money

Oromo and Mwangangi (2017) investigated supplier development and procurement performance in Kenya. With a descriptive approach of design in a primary research on 160 employees of KENGEN, the study deployed correlation and regression analysis and supported by ANOVA; they found empirically that development of suppliers through training and education reduced their declining profits and that there exists a positive relationship between supplier management and value for money through procurement performance. Manyega and Okibo (2015) examined the effects of supplier management capability on procurement performance of public institutions in Kenya; the research adopted a descriptive research design in a study of a sample of 90

respondents. They deployed multiple regression and content analysis of secondary data and empirically found that pre-qualification has a significant impact on procurement cost savings and efficiency. Nyaberi et al (2018) investigated the role of supplier selection based on supplier development on procurement performance of manufacturing firms; they adopted the exploratory and descriptive research design in a study of one hundred and fifty-one SMEs. With correlation and regression analyses, they established that quality standards of products, financial position of the supplier, efficiency in service delivery, flexibility of supplier and market reputation have significant relationship with procurement performance in the SMEs. Obinda and Gichure (2017) researched into the effects of supplier selection in relation to communication between supply personnel on supply chain performance in a descriptive research on Nairobi City County. With a regression model used on primary responses from 237 employees, they established that public procurement policies have positive and significant effects on value of money and that effective communication management among procurement staff of suppliers significantly affected efficiency. Njeru et al (2014) conducted a research into supplier management on the implementation of effective procurement practices in tertiary public institutions in Kenya. In a descriptive study of 160 staff members drawn from the institutions, they empirically established that supplier management practices have significant effect on overall procurement performance.

3.2.3 Supplier Financial Capacity and Value for Money

Khaemba and Otinga (2019) did an empirical study of the influence of supplier financial capability on procurement performance of Bungoma County. In a descriptive study that involved a sample size of 88 employees, they processed their data with correlation and regression effects that provided that supplier financial capability significantly influenced procurement performance in that suppliers who had the financial power would adequately deliver goods and services without failure. Nyaberi et al (2018) conducted research into the role of supplier selection methods, including financial capacity, on procurement performance of manufacturing firms; they adopted the exploratory and descriptive research design in a study of one hundred and fifty-one SMEs. With correlation and regression analyses, they found that financial position of the supplier has significant relationship with procurement performance in the SMEs.

Korir et al (2016) have investigated the effects of supplier efficiency on procurement performance in Kenya, and with a sample of 154 employees, data was collected and analyzed on the supplier quality, financial position and flexibility in relation to their impact on procurement performance. The study found empirically that selection of suppliers on the basis of financial position has significant impact on enhancing supplier efficiency and performance. Mildred and Paul (2018) as well investigated into the role of supplier evaluation criteria on the supply chain performance in Kenya. With a sample size of 53 respondents, they analyzed their data with regression effects that found that financial capacity of the supplier has significant effect on supplier chain performance in increased efficiency and reduced risk of supplier failure. Mbeche and Gichanga (2021) did an investigation into supplier selection on procurement performance. By employing a sample size of 148 staff members of the tea buying community in Mombasa, they employed Pearson correlation and regression in their analysis; they established that supplier control, which includes financial control, has a significant effect on procurement performance with enhanced efficiency in relation to value for money.

4.2 Conceptual Framework on Supplier Selection Methods and Value for Money



Figure A: Researcher's construct based on literature review (February, 2021)

3. Methodology

This chapter provided an insight into the research plan and strategy adopted to achieve the purpose of the study; it provided an insight into the research methods used in conducting the study and based on which the outcome of the study was evaluated. It discussed research designs and sampling techniques which provided details on primary and secondary sources of data. Analytical tools and techniques used in the study were discussed in this chapter, which provided an insight into the use of both descriptive and inferential statistics in the analysis of research data. The study used a descriptive and explanatory research design in a case study of the Ghana Health Service with Tamale Teaching Hospital as a case study. The study adopted the inductive approach whereby primary data was tested and results thereof were used as empirical evidence in answering the research questions. The pictorial case study according to Oppong (2013) is to gather vital information about the current valid profile of the people, occurrences or situations. Primary data was sourced for the analysis of the relation between supplier selection methods and value for money in the procurement of goods and services in the TTH.

The research population consisted of all institutions and establishments of the Ghana Health Service (GHS). However, due to research limitation in context and geography, the study used a targeted population of employees of the TTH stratified into the departments of Procurement, Finance, Stores and Pharmacy, which constituted the sampling frame.

Table 1: Population Frame

| Department | Population |
|-------------|------------|
| Procurement | 4 |
| Finance | 85 |
| Stores | 24 |
| Pharmacy | 53 |
| Total | 166 |

Source: Annual report of TTH, (2020)

In view of the fact that the procurement process carries across many departments in the Tamale Teaching Hospital (TTH), the study adopted a stratified random sampling technique. This sampling method was employed for the study owing to the fact that the procurement function permeates across many processes in Ghana Health Service. This method of sampling of also allowed the researcher to obtain information from identified strata of respondents in the organization. The sample size (n) was statistically derived by using the Yamani formula from the sampling frame (N) and the margin of error (α) allowed for the study was 5%, based on which the model was derived as follows:

$$\text{Sample size } n = \frac{N}{1+N(\alpha)^2}$$

Substituting the N (320) in the formula above, the statistical sample was derived as follows:

$$\begin{aligned} \text{Samplesize } n &= \frac{166}{1 + 166(0.05)^2} \\ &= 117 \end{aligned}$$

Thus, the sample for the study was selected, proportionately from the sampling frame, as noted in Table 1 and allocated to the various departments, as outlined in Table 2 below:

Table 2: Sample Size

| Department | Sample |
|-------------|--------|
| Procurement | 3 |
| Finance | 60 |
| Stores | 17 |
| Pharmacy | 37 |
| Total | 117 |

Source: Author's Field Survey, 2021

Data was gathered from both primary and secondary sources. The primary source of data comprised of questionnaires that were distributed to employees of the TTH, which comprised of departmental heads and personnel in the organization. The secondary source of data comprised of publications, literature materials, and medical guidelines and presentations of the TTH. The primary data was collected by administration of questionnaires which were distributed to employees in the various departments. The reviewed literature helped in designing the questionnaires that was used in the collection of data with regards to the variables of supplier selection methods and procurement performance in relation to value for money. Likert scale was adopted in this study and data was analyzed by using descriptive statistics and inferential statistics with the aid Statistical Package for Social Science (SPSS). The questionnaires were coded, entered and processed on SPSS, which produced the descriptive and inferential results as processed in the analyses of data.

3.1 Econometric Model Specification

The study adopted the following econometric model in deriving the model used to establish the regression effect of the independent variable on the dependent variable, whereby the independent variables used in the study are Supplier Quality Commitment, Supplier Financial Capacity and Supplier Management Ability. The dependent variable is Value for Money (VFM). The econometric model used is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where Y is the dependent variable, α is the constant, β is the coefficient of regression, X is the independent variable and ε is the error term. The model is then restated as:

$$Y = \alpha + \beta_1 SQC_1 + \beta_2 SFC_2 + \beta_3 SMA_3 + \varepsilon$$

3.2 Reliability and Validity

The questionnaires were delivered for content assessment to an expert who vouched that they were properly fit for soliciting the appropriate answers for the research questions. Further, the measure of Cronbach Alpha was equal to 0.910, based on four variables of the study, being above the 0.7 minimum level, which evidenced consistency in items of the questionnaire.

4. Analysis of Results

Table 3: Correlation Analysis

| Correlation Analysis | | Supplier Quality Commitment | Supplier Financial Capacity | Supplier Management Ability | Value For Money |
|-----------------------------|---------------------|-----------------------------|-----------------------------|-----------------------------|-----------------|
| Supplier Quality Commitment | Pearson Correlation | 1 | .686** | .608** | .622** |
| | Sig. (2-tailed) | | .000 | .000 | .000 |
| | N | 117 | 117 | 117 | 117 |
| Supplier Financial Capacity | Pearson Correlation | .686** | 1 | .736** | .802** |
| | Sig. (2-tailed) | .000 | | .000 | .000 |
| | N | 117 | 117 | 117 | 117 |
| Supplier Management Ability | Pearson Correlation | .608** | .736** | 1 | .877** |
| | Sig. (2-tailed) | .000 | .000 | | .000 |
| | N | 117 | 117 | 117 | 117 |
| Value For Money | Pearson Correlation | .622** | .802** | .877** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 117 | 117 | 117 | 117 |

Source: Author's Field Survey, 2021

Correlation is at 5% significance level

In the table above, it was noted that there was a strong and significant correlation SQC and VFM ($r=0.622$, $p=000$). Furthermore, the correlation was evidenced to have been strong and significant between SFC and VFM ($r=0.802$, $p=000$) and the correlation between SMA and VFM was similarly witnessed to be significant and strong ($r=0.877$, $p=000$). It was also noted that multi-collinearity was relatively lower between the independent variables as it was 0.686, and 0.608 between SQC and SFC and SQM and SMA respectively, which were below the 0.7 threshold, except that it was a bit high in the relationship between SFC and SMA with a measure of 0.736 as appropriate.

4.1 Inferential Statistics

Table 4: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|--------|
| | | | | | R Square Change | F Change | df1 | Sig |
| 1 | .907 ^a | .823 | .818 | .426 | .823 | 174.960 | 3 | 0.000* |

Source: Author's Field Survey, 2021

*The F statistic is at 5% significance level

In the table above, it was evident that the degree of impact of the independent variables on the dependent variable was suggestive, as provided by the Adjusted R Square, that about 82% of the variation effects in the dependent variable were explained by variations in the independent variable. The F statistic was 174.960 being higher than the critical value at 5% significance level ($174.960 > 2.447$), which suggested that the model is statistically significant.

Table 5: Co-efficients of Regression

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|-----------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .353 | .128 | | 2.759 | .007 |
| | Supplier Quality Commitment | .014 | .053 | .014 | .258 | .797 |
| | Supplier Financial Capacity | .285 | .055 | .335 | 5.140 | .000 |
| | Supplier Management Ability | .598 | .058 | .621 | 10.389 | .000 |

Source: Author's Field Survey, 2021

Regression is at 5% significance level.

Dependent Variable: Value for Money

In the table above, it was inferred that the value for money changes with a constant value of 35% even if there is no change in any of the independent variables. With a unit change in Supplier Quality Commitment, the dependent variable changes insignificantly by 1.4%. With a unit change in Supplier Financial Capacity, the dependent variable changes significantly by 28.5%. With a unit change in Supplier Management Ability, the dependent variable changes significantly by 59.8%.

4.2 Descriptive Statistics

This part of the study analyzed measures of central location and dispersion. The measures of location that were analyzed were the means, the medians whereas the only measure of dispersion used was the standard deviations of the variables used in the study respectively.

Table 6: Descriptive Statistics

| Variable | Mean | Median | Standard Deviation |
|-------------------------------|------|--------|--------------------|
| Gender | 1.55 | 2 | 0.500 |
| Age | 2.72 | 2 | 0.829 |
| Education | 3.9 | 3 | 0.836 |
| Job Description | 3.91 | 4 | 1.222 |
| Work Experience | 2.76 | 3 | 0.953 |
| Entity Strategic Supply | 2.85 | 3 | 1.343 |
| Impact of Act 663 2003 | 1.05 | 1 | 0.222 |
| Supplier Selection Attributes | 2.28 | 2 | 1.586 |
| Procurement Methods | 2.26 | 2 | 1.037 |
| Supplier Quality Commitment | 3.03 | 3 | 1.058 |
| Supplier Financial Capacity | 2.45 | 3 | 1.178 |
| Supplier Management Ability | 2.63 | 3 | 1.039 |
| Value For Money | 2.67 | 3 | 1.000 |
| Procurement Drawbacks | 2.38 | 2 | 1.065 |
| Robust Supply Recommendation | 1.04 | 1 | 0.203 |

Source: Author's Field Survey, 2021

In the table above, it was noted, except with SQC, job description and education, that entity strategic supply, impact of Act 663 of 2003, supplier selection attributes, procurement methods, SFC, SMA, procurement drawbacks and VFM were all responded to, on average, with agreed decisions by the participants in the survey. The standard deviations were low, which suggested that there was a low dispersion or spread between the individual responses in the sample data and the means of the sample. In other words, the sample data appeared to have clustered about the means of the responses, which implied for reliable consistency in the survey data.

5. Discussion of Findings

5.1 Correlation between Supplier Selection Methods and Value for Money in TTH

It was empirically found that there was a strong and significant correlation Supplier Quality Commitment (SQC) and VFM ($r=0.622$, $p=000$). This finding concurred with Stephen et al (2016) who also found that there was a strong relationship between quality of suppliers and the procurement performance. Furthermore, the correlation was evidenced to have been strong and significant between Supplier Financial Capacity (SFC) and VFM ($r=0.802$, $p=000$). This finding agreed with Mukarumongi et al (2018) who established that there is a positive and strong relationship between financial ability and the value for money in Kenya. Similarly, correlation between Supplier Management Ability (SMA) and VFM was witnessed to be significant and strong ($r=0.877$, $p=000$). This finding agreed with Nyaberi et al (2018) who empirically found that there is a positive relationship between supplier management flexibility and value for money (VFM). It also concurred with Manyega and Okibo (2015) who established empirically that there is a positive relationship between prequalification of suppliers and VFM.

In effect, the general finding is therefore that the independent variables, SQC, SFC and SMA and the dependent variable, VFM, have a positive and direct relation, which suggest that any changes in the independent variables would empirically trigger changes in the dependent variable in the same direction.

5.2 Effects of Supplier Selection Methods on Value for Money in TTH

It was empirically found that with every unit change in Supplier Quality Commitment (SQC), value for money (VFM) changes insignificantly by 1.4%, which suggested SQC has an insignificant effect on VFM. This finding disagreed with Amonoo (2014) who established in her study that quality has a significant effect in the selection process of suppliers in relation to VFM. This finding however agreed with Odhiambo (2018) who found empirically that quality and organizational profile of the suppliers exert an insignificant impact on value for money.

Moreover, it was established that with a unit change in Supplier Financial Capacity (SFC), Value for Money (VFM) changes significantly by 28.5%, which suggested SFC has a significant effect on VFM. This finding agreed with Mukarumongi et al (2018) who revealed that the financial ability of the supplier has a significant impact on procurement performance in relation to Value for Money (VFM). It also agreed with Nyaberi et al (2018) who held that the financial position of the supplier has a significant effect on procurement performance in relation to efficiency.

Similarly, it established from the study that with a unit change in Supplier Management Ability (SMA), Value for Money (VFM) changes significantly by 59.8%, which suggested that SMA has a significant effect on Value for Money (VFM). This finding agreed with Nyaberi et al (2018) and who empirically found that supplier management flexibility has a significant effect on value for money (VFM). Additionally, the finding agreed with the results of a study by Odhiambo (2018) who found empirically that quality and organizational profile exert significant impact on procurement performance.

6. Recommendation

To begin with, the study recommended the TTH and other health policy makers, based on the empirical outcomes of the study, should ensure that they assess properly the quality commitment profiles of their suppliers in the health sector and ensure that they select suppliers with the requisite quality profiles who can deliver goods and services to the institution that meet the requisite specifications as spelt in ISO international quality standards and the promulgations given by the PPA Act 663 of 2003. This is to ensure that delivered goods and services provide value for money for the organization as empirically established by the results of the study even though insignificant.

Furthermore, it is suggested in a recommendation that, based on the empirical findings of the study, the TTH and other health policy makers should examine the financial capacity of suppliers and select suppliers who have the requisite financial capacity and performance and can supply goods and services to the institution without any financial let or hindrance in the supply chain so as to avoid supply bottlenecks. This is to ensure that the goods are delivered regularly and much more economically to bear on significantly providing value for money in the procurement of goods and services for the TTH.

In addition, it is recommended, based on the empirical outcomes of the study, that the TTH and other health policy makers should ensure that they properly examine the management ability of suppliers and select suppliers who have strong organizational profiles in management and can supply goods and services with effective management of the purchasing mix that includes delivery, quantity, quality and price. This is to ensure that products that are delivered to the TTH are able to significantly affect value for money in TTH as empirically established.

Lastly, it is recommended, based on the empirical outcomes of the study, that the TTH and other health policy makers, should give more operational attention to the examination of essentially key supplier attributes of experience, skills mode of delivery, track record and financial viability so that value for money can be enhanced from the acquisition of goods and services from suppliers who technically meet the attributes as empirically evidenced in the study.

7. Conclusion

The study investigated the relationship between supplier selection methods in relation to the independent variables of Supplier Quality Commitment (SQC), Supplier Financial Capacity (SFC), Supplier Management Ability (SMA) and the dependent variable of Value for Money (VFM). The study adopted an explanatory, case study approach of the Tamale Teaching Hospital with a cross-sectional survey research design that used a primary instrument of questionnaire in data collection. The study employed the stratified random sampling technique in determining the composition of the sample and a statistical tool in determining the size of the sample. The study empirically found that there is a strong and significant relationship between SQC and VFM; that there is a strong and significant relationship between SFC and VFM; and that there is a strong and significant relationship between SMA and VFM. The study further established that SQC exerts an insignificant effect on VFM; that SFC influences a significant effect on VFM; and that SMA exerts a significant effect on VFM.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

References

- Amonoo (2014) Thesis on an Evaluation of the Importance Suppliers attach to Supplier Selection Criteria in Public Procurement Practices in Ghana, College of Architecture and Planning.
- Dimitri (2013) Best Value For Money in Procurement, *Journal of Public Procurement*, Volume 13: Issue 2, pp 149-145
- Fauziah, W. Y. W., & Alhaji, I. A. (2012). Insight of Corporate Governance Theories. *Journal of Business & Management*, 1(1), 52–63.
- Fletcher (1992) Thesis on Identification of Best Practices in Supplier Selection and Supplier Quality Management, *Massachusetts Institute of Technology*, 1992.
- Freeman et al (2010) Stakeholder Theory: The State of Art. Cambridge, UK. *Cambridge University Press*, 2010
- Gichure, J.M; Obinda, R.A (2017) Effects of Supply Management on Supply Chain Performance, *International Journal of Social Sciences and Information Technology*, Volume 3: Issue 10, pp 2593-2606
- Kariuki, J. G., Makokha, E. N., & Namusonge, P. G. S. (2018). *Influence of Supplier Selection on Procurement Performance in Technical Institutions in Trans-Nzoia County in Kenya*. 5(4), 11–22.
- Khaemba, Alsuwehri, Y. (2011). *Supplier Evaluation and Selection by Using The Analytic Hierarchy Process Approach*. 1–37.
- Korir, T; Iravo, M. Berut, Z (2016) Effects Of Supplier Efficiency On Procurement Performance In Kenya Seed Company, Kitale,. (2016) *International Journal of Recent Research in Commerce, Economics and Management*, 3(4), 192–214.
- Krop, E. & Iravo M.A (2016). Effects of Supplier Selection on Performance of Procurement Function in Public Sector: a Case of West Pokot County Government. *International Academic Journal of Procurement and Supply Chain Management* |, 2(2), 51–73.
https://www.iajournals.org/articles/iajpscm_v2_i2_51_73.pdf%0Awww.iajournals.org

- Kurniaty, K., Suhadak, S., Handayani, S. R., & Rahayu, S. M. (2019). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research*, 4(1), 18–34. <https://doi.org/10.1108/ajar-07-2018-0021>
- Mahrani, M., & Soewarno, N. (2018). The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable. *Asian Journal of Accounting Research*, 3(1), 41–60. <https://doi.org/10.1108/ajar-06-2018-0008>
- Mandiyambira, R. (2012). *Managing supplier relationships to improve public procurement performance*. 6(1), 306–312. <https://doi.org/10.5897/AJBM11.2197>
- Manyega, V. B., & Okibo, W. (2015). Effects of Supplier Selection on Procurement Performance of Public Institutions a Case Study of Kisii County, Kenya. *International Journal of Economics, Commerce and Management United Kingdom*, III(9), 595–610. <http://ijecm.co.uk/>
- Mbeche, T. M. (2021). *Influence Of Supplier Selection On Procurement Performance Among Tea Buyers In Mombasa*. 6(10).
- Mildred, A., Nyang, S., & Paul, A. U. (2018). Role Of Supplier Evaluation Criteria On Supply Chain Performance In Kenya : A Case Of Auditor-General ' s Office. *International Journal Mulyungi, P. (2018). Effect of Supplier Evaluation on Procurement Performance in Government Ministries in Rwanda : Case of Ministry of Health*. 08(05), 138–151.
- Mulyungi, P. (2018). *Effect of Supplier Evaluation on Procurement Performance in Government Ministries in Rwanda : Case of Ministry of Health*. *International Journal of Research in Management, Economics and Commerce*, 08(05), 138–151.
- Nayak, J. (2011) Impact of supplier management and firm performance, *Academia* 2011, Volume 38 No.1
- Nsiah-Asare, Evelyn and Prempeh-Boateng, K. (2016). *Munich Personal RePEc Archive Measures of Ensuring Value for Money in Public Procurement : A Case of Selected Polytechnics in Ghana*. 70051, 1–20. <https://mpra.ub.uni-muenchen.de/70051/>
- Njeru, S. E., & Ngugi, P. (2014). *Influence of supplier management on the implementation of effective procurement practices in tertiary public training institutions in Kenya*. 2(May), 80–86.
- Ntim, C. G., Soobaroyen, T., & Broad, M. J. (2017). Governance structures, voluntary disclosures and public accountability: The case of UK higher education institutions. *Accounting, Auditing and Accountability Journal*, 30(1), 65–118. <https://doi.org/10.1108/AAAJ-10-2014-1842>

- Nyaberi, D. N., Iravo, M. A., & Sakwa, M. (2018). Role of Supplier Selections on Performance of Manufacturing Firms. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 14–32. <https://doi.org/10.6007/ijarbss/v8-i9/4539>
- Odhiambo, V. (2018). *Supplier Selection Practices and Procurement Performance in Nairobi City County*.
<https://pdfs.semanticscholar.org/e89b/515aaeff536c2af91a40857a7364ce1b9b6a.pdf>
- Oriri, T., Hospital, N., Fund, I., & Branch, K. (2015). *International Journal of Social Sciences and Information Technology INFLUENCE OF SUPPLIER QUALITY MANAGEMENT PRACTICES ON. 1(Iv)*, 1–19.
- Oromo, F. A. O., & Mwangangi, P. (2017). Effect Of Supplier Development On Procurement Performance In Public Sector In Kenya : A Case Of Kenya Electricity Generating Company Limited Effect Of Supplier Development On Procurement Performance In Public Sector In Kenya : A Case Of Kenya Electricity Generating Company Limited. *International Journal of Supply Management*, 2(3), 42–59.
- Orozco, L. A., Vargas, J., & Galindo-Dorado, R. (2018). Trends on the relationship between board size and financial and reputational corporate performance: The Colombian case. *European Journal of Management and Business Economics*, 27(2), 183–197. <https://doi.org/10.1108/EJMBE-02-2018-0029>
- Otieno, A.N (2017) Thesis on the Effects of Supplier Quality Management on Procurement Performance, Kisii University, Kenya
- Phochanikorn, P., & Tan, C. (2019). An integrated multi-criteria decision-making model based on prospect theory for green supplier selection under uncertain environment: A case study of the Thailand palm oil products industry. *Sustainability (Switzerland)*, 11(7). <https://doi.org/10.3390/su11071872>
- Prowle, M., Kalar, M., & Barrow, L. (2016). *Value for money (VFM) in public services : The importance of organisational culture Value for money (VFM) in public services : The importance of organisational culture. September 2016.*
- Rodriguez-Fernandez, M. (2016). Social responsibility and financial performance: The role of good corporate governance. *BRQ Business Research Quarterly*, 19(2), 137–151. <https://doi.org/10.1016/j.brq.2015.08.001>
- Salehi, M., Tahervafaei, M., & T arighi, H. (2018).The effect of characteristics of audit committee and board on corporate profitability in Iran.*Journal of Economic and Administrative Sciences*, 34(1), 71–88. <https://doi.org/10.1108/jeas-04-2017-0017>
- Samson, K., & Jonathan, M. (2013). *The Effect of Supplier Quality Management on Organizational Performance : A Survey of Supermarkets in Kakamega Town*. 3(1), 71–82.

The World Bank. (2013). Value-for-Money Analysis—Practices: How Governments Choose When to Use PPP. Washington DC: The World Bank Institute.

Teli, S. N., Majali, V., Bhushi, U., Institutions, S. E., & Deshpande, A. (2012). *Knowledge based Supplier Quality Management System for Automobile Industry*. January.

Yeung, I.K; Chin, K.S (2018) Critical Success Factors of Supplier Quality Management, *Asian Journal on Quality*, Volume 5 No. 1 pp 85-109

Zolghadri, M; Eckert, C; Zougghar, S; Girard, P (2011) Power-based Selection in Product Development Projects, Elsevier, Volume 62; Issue 5, pp 487-500
<https://doi.org/10.1016/j.compind.2010.12.001>

UNDER PEER REVIEW

UNDER PEER REVIEW