

Research Article

EFFECT OF SUPPLIER EVALUATION ON PROCUREMENT PERFORMANCE OF PUBLIC UNIVERSITIES IN COAST REGION, KENYA

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Received 10th November 2021; Accepted 11th December 2021; Published online 21th January 2022

ABSTRACT

The main objective of this research study was to establish effect of supplier evaluation on performance of procurement Function at Public universities in Coast Region, Kenya. The specific objectives used included the supplier financial stability, quality, reliability and supplier service level on the effects on procurement performance of the public universities in the Coast Region, Kenya. Theoretically, the study was guided by Resource Dependency Theory, Kaizen Theory, Vroom's Expectancy Theory and Grey System Theory. The research methodology for the study was descriptive research design. The study target population were non-teaching staff selected randomly from Pwani University, Technical University of Mombasa and Taita Taveta University. The target population for this study was Procurement Department, Finance Department and Evaluation Committee tallied at 112. The sample size was 88. Structured questionnaires and the Likert Type Scale format ranging from 1 – 5 was used to collect primary data. Using Pearson Correlation, the findings showed that financial supplier stability, supplier quality, supplier reliability and supplier service level were all having an effect on procurement performance of the selected public universities at the Coast Region, Kenya. Moreover, the study recommended that supplier's financial stability, supplier's quality, supplier's reliability and supplier's service level must be made a major concern during bid evaluation process.

Keywords: Supplier Evaluation; financial stability; Supplier Quality; Supplier Reliability; Supplier Service Level.

BACKGROUND INFORMATION

The goal of every enterprise is to utilize its limited resources in the most efficient manner so as to realize its objectives with minimal costs. This necessitates the evaluation of suppliers so as to ensure that an institution gets the best contracts in terms of quality, costs, flexibility and reliability. According to Johnson (2019), supplier evaluation is referred to as the practice of approving and evaluating probable bidders using quantitative methods to make sure that the best group of suppliers are selected or made available to supply products and services to an organization. According to Wainoi and Noor (2016), evaluating vendors is the process of quantifying the effectiveness and efficiency of a supplier's action. Globally, the supplier selection and evaluation decisions are complicated because different methods should be considered during the decision-making process (Nair, Jayanth & Ajay, 2015). Quality, price and delivery are the most important criteria used when selecting suppliers although there are other criteria's that can be applied. A study by Kumar and Deepali, (2017) on supplier selection criteria of automobile industry in India conceded that, quality with their suppliers can be deemed as one of the significant criteria in the evaluation of organization's economic performance. Enhancing Indian organizations, competitiveness in product design, timely delivery and quality are fundamental to ensure efficiency with innovations in production, both beyond their operations and within (Akshay, Madhay & Amarsinh, 2016).

Statement of the Problem

Suppliers provide very critical services to any buying organization

which must be critically analyzed for the success of such organizations (Kiremu, 2020). Public procurement is the key to government service delivery, yet constraints affect its performance. Despite Government efforts to improve the procurement system, it is still marred by shoddy works, poor quality goods and services. Improper implementation of recommended performance standards results in unnecessarily high operation costs, uncoordinated business activities, inability to achieve domestic policy goals, and failure to attract and retain professionals. Suppliers complain about the capability of public sector buyers (Awoke & Singh, 2020). According to Mukarumongi, Mulyungi and Saleh, (2018) up to 30% of procurement inefficiencies in the public sector in Rwanda are attributed to supplier's performance issues. There is therefore concern as to what can be done to reduce supplier related procurement issues. According to Kiprotich and Okello, (2016) on supplier evaluation in Kericho noted that, suppliers are in most cases conventionally selected based on low price and less importance is given to the suppliers who give assurance of on timely delivery and long-term relationships. According to Kithaka, Mulwa, Muli and Goko, (2013) the local suppliers have capacity issues thus a huge reliance of imports which require longer lead (delivery times) leading in some case to huge stock holding costs to ensure continuous flow of materials for manufacturer thus negatively affecting their product development. Most of the companies have not utilized a fully structured supplier evaluation system or other guidelines to assess their suppliers. Buying firm realizes the cost of monitoring supplier tends to be high relative to inability to understand what the supplier is actually doing (Kithaka *et al.*, 2013). With the elevation of the current global sourcing trend, it is more difficult for the companies to conduct frequent on-site supplier evaluations. Therefore, these companies need to develop an effective process for the evaluation of suppliers as a part of their SCM processes.

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Specific Objectives

- To determine the effect of supplier financial stability on procurement performance of public universities in Coast region, Kenya.
- To determine the effect of supplier quality on procurement performance of public universities in Coast region, Kenya
- To determine the effect of supplier reliability on procurement performance of public universities in Coast region, Kenya.
- To determine the effect of supplier service level on procurement performance of public universities in Coast region, Kenya.

LITERATURE REVIEW

Theoretical Framework

The Resource Dependency Theory (RDT)

This theory was initially developed by Pfeffer and Salancik (1978). It was based on organizational success being based on its resources and that control and access over resources is a basis of power. Organizations need to carefully enhance their strategies to control resources in order to ensure and maintain open access to resources. As reiterated by Kim, Seung & Lee (2016), RDT confirms how firms rely on each other's resources for survival like raw materials, goods and services. Dress and Heugens (2015) vendors and buyers are integrated together in a network via useful resource dependency and that these linkages are characterized by means of change on current assets or introduction to new resources. By applying thorough and competitive techniques in supplier evaluation, public universities can get the best suppliers as far as financial stability is concerned hence relying on a powerful resource that can ensure success in procurement performance.

Kaizen Theory

Kaizen Theory Kaizen is a Japanese word, commonly translated to mean 'continuous improvement'. Kaizen is a core principle of quality management generally, and specifically within the methods of Total Quality Management and 'Lean Manufacturing'. Deming (1986) Originally developed and applied by Japanese industry and manufacturing in the 1950s and 60s, Kaizen continues to be a successful philosophical and practical aspect of some of the best-known Japanese corporations, and has for many years since been interpreted and adopted by 'western' International Journal of Economics, Commerce and Management, United Kingdom Licensed under Creative Common Page 601 organizations all over the world. Kaizen is a way of thinking, working and behaving, embedded in the philosophy and values of the organization. Kaizen should be 'lived' rather than imposed or tolerated at all levels (Deming, 2018). The Kaizen Theory will therefore form a strong basis in analysis how supplier quality influences supplier evaluation for successful procurement performance and ultimate public universities sustainable growth.

Vroom's Expectancy Theory

Expectancy theory is about the mental processes regarding choice or choosing. It explains the processes that an individual undergoes to make choices. Expectancy theory had been proposed by Vroom (1964). This theory is based on the hypothesis that individuals adjust their behavior in the organization based on anticipated satisfaction of valued goals set by them. The individuals modify their behavior in such a way which is most likely to lead them to attain these goals.

This theory underlies the concept of performance management as it is believed that performance is influenced by the expectations concerning future events (Lan'gat & Nyaoga, 2020). Vroom's expectancy theory will help in determining how supplier reliability influences supplier evaluation and the subsequent effect on procurement performance.

Grey System Theory (GST)

Developed by Deng, (1982) grey system theory implies to a system or process which part of information is known and part of information is unknown. With this definition, information quantity and quality form a continuum from a total lack of information to complete information from black through grey to whiteKarten (2015). Since uncertainty always exists, one is always somewhere in the middle, somewhere between the extremes, somewhere in the grey area. Grey analysis then comes to a clear set of statements about system solutions (Karten, 2015). According to Blackwell and Dixon (2016), Grey analysis does not attempt to find the best solution, but does provide techniques for determining a good solution, an appropriate solution for real world problems. According to Grey System Theory, in a practical business environment, in most instances, supplier selection takes place in an environment with less than perfect information. During the supplier evaluation process, the Grey System Theory can be applied by setting the agreeable level of service performance to help in getting the best supplier for the procurement of goods and services.

Conceptual Framework

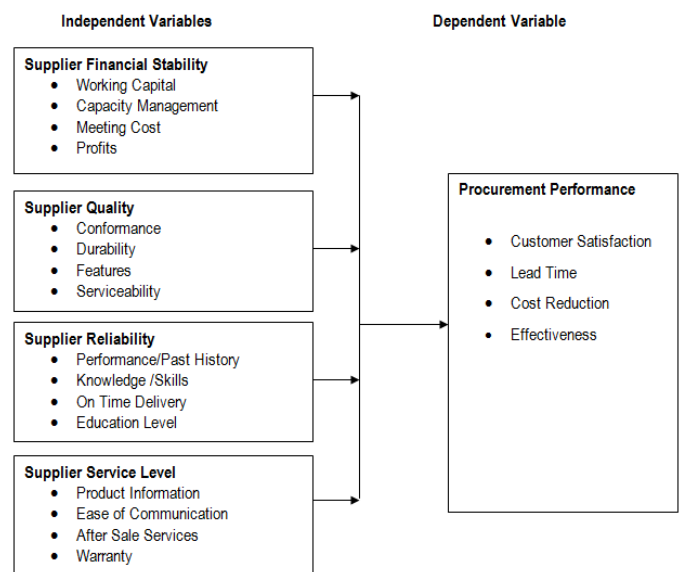


Figure 2.1 Conceptual Framework

Supplier Financial Stability

Suppliers' financial condition should be evaluated at the very early stage of supplier appraisal. Some customers consider the approaches like a pre-screening exercising that a provider need to pass before elaborate evaluation process begin (Mbithi, Muiruri & Kingi, 2015). According to CIPS (2015), factors like; assets owned, profitability, debts owed, cash flow management among other factors can be used to measure financial status and stability. Vendor financial stability can be outlined as a condition in which financial system like financial markets and financial institutions are not gullible by the economic shocks and can fulfill the basic functions of intermediate financial funds, risk management and arrangement of payment (Aspuro, 2015). The financial criterion has a major effect to the

purchaser mainly during selection of a supplier in respect to his poor financial conditions. Firstly, there are high chances that the supplier may go out of business and may not have enough resources for investing in equipment's, plants or innovation which are important for long term performance improvements. Lastly, weakness in the financial system is a key indication of future problems (Wanjiru, Kiarie & Marendi, 2018).

Supplier Quality

A study by Yashinta and Melinda (2020) on supplier and procurement analysis found out that adherence to the specified quality is a determinant factor for selecting suppliers. Adherence to the quality specified by the buying organization also helps in running the production smoothly and hence the firm is able to sustain a competitive role in the market. Seung-burn and Ador (2016) did a study in South Korea and observed that supplier quality evaluation has all of sudden gone high as most companies are trying to achieve competitive advantage in the global market. For an organization to achieve high quality levels, timely delivery and saving cost evaluation of supplier's quality should be one of the strategies an organization should implement. Some organizations like Mark and Spenser and General Motors have achieved competitive advantage due to good management in their procurement and supply chain activities (Barth, 2018). According to Kitheka *et al.*,(2013), supplier audits, development of supplier, integration of the supplier and measurement performance are the most often used for management of supplier quality. The study also established that management of supplier's quality will enable organization achieve benefits such as increased response to customers, reduced lead-times, increased profitability, increased customer loyalty, effective communication and reduced opportunity costs from loss of customers. The study concluded that it's very important for suppliers to store or preserve information so as to avoid poor traceability and visibility and also avoid future disputes with the buyers. An organization must enhance their quality system measures and encourage continuous inspections to avoid disappointments to customers through discontinuous supply of materials.

Supplier Reliability

Supplier reliability is defined as the ability of an organization to supply consistently products and services at the required time CIPS (2015). A study conducted by Awoke and Singh (2020) on the factors that determine public procurement on Kenyan Universities depicted that the major issue regarding procurement functions is to ensure one buys from distinctively reliable supplier. The organization should thus choose suppliers who have the capacity to supply. According to Awoke and Singh (2020) efficiency and effective evaluation of the suppliers can be used as a technique to influence the supplying firms' behavior. By merging the aim of procurement to those of the supplier, supplier's performance will be enhanced leading to an improvement in the performance of the procurement function.

Supplier Service Level

Is the performance of the supplier in providing services to the Manufacturer. Is the prime criterial to decide its suitability for a particular product. According to Rachid and Imad, (2019) argue that the good services given by the supplier may help in increase to customer base and therefore this criterion is important in global supplier selection. It is analyzed based on delivery, lead-time and ease of communication. Establishing a supplier service level agreement entails typically gathering information, negotiating and building consensus with the supplier (service provider) on the common level on which the below service delivered should not be

accepted (Davis, 2017). Davis (2017) further stated that a supplier service level can give better results if both parties mutually commit, so try to reach an agreement in good faith. The supplier service level should be specific, measurable, achievable, relevant (SMART) and time bound Gemmel and Vandaele (2015). According to Hartley (2015), the SLA ensures for the quantification of services leading to a clear performance standard for both the supplier and the customer and enabling an objective assessment of the service quality. A supplier service level agreement should, however, be valid only for a minimum period-of-time and adjusted regularly to adapt to the continuously changing environment (Vandaele, Rangarajan, Gemmel & Leivens, 2016). The increasing use of SLAs can likely be explained by the increasing attention for outsourcing, which has become a popular and often used management technique to ensure that service providers are properly evaluated before given a contract (Armai, Abdul & Naim, 2015).

Empirical Review

A study done by Zhang, Lettice, Chan and Thanh (2018), on the key determinants of supplier selection and evaluation in Vietnam in manufacturing firms found out that procurement performance is determined by supplier economic capability. The research recommended that a high correlation between the supplier economic capabilities and the potential of vendors to relinquish which in return enhances performance of procurement hence showing a need for strategic alliances among all stakeholders involved in the procurement process. A study done by Naibor and Moronge (2018), on factors that affect selection of suppliers concluded that prize, quality, profile of the firm, technical capability as the factors considered. Manyenga (2015) did a study on selection of suppliers on procurement performance in public institutions. The study concluded that there is a positive relationship between organizational performance and supplier efficiency. Organizations consider quantitative factors such as supplier's technical expertise, adherence to the specified quality and the ability to deliver on time when selecting suppliers than qualitative factors such as suppliers' willingness to share confidential information.

RESEARCH METHODOLOGY

Research Design

The study adopted descriptive research survey design. According to Cooper and Schindler (2013), a descriptive research survey design is used to exhibit correct profile of population in the study if the target population is moderately dispersed in a given geographical area. Thus, descriptive research survey was appropriate for this study since it enabled gathering of quantifiable information that used for statistical inference on data analysis.

Target Population

Gane,(2020) has postulated that a population is the target group of research elements, which have common features. The population targeted by the researcher comprised of permanent non- teaching staff in procurement, finance, and the evaluation committees in charge with contract award and management from the selected public universities in coast region. Table 3.1 illustrates the total population of non- teaching staff in the four divisions from the selected universities (Pwani University, Technical University of Mombasa and Taita-Taveta University). Further, these target populations were considered to be directly involved in supplier evaluation at their various Universities as constituted by the PPAD, (2015). The information on the target population from these selected Universities are summarized in Table 3.1.

Table 3.1: Target Population

Target Group	Technical University Mombasa	Pwani University	Taita Taveta University	Target Population
Procurement Department	12	15	8	35
Finance Department	16	18	13	47
Bid Evaluation Committee	8	11	11	30
Total	36	44	32	112

Source – HR Office (TUM, Pwani and Taita Taveta)

Sampling Size And Sampling Technique

Table 3.2 Sample Size

Sample Group	Total Population	Sample Size
Procurement Department	35	27
Finance Department	47	36
Evaluation Committee	30	25
Total	112	88

Research Findings And Presentations

Descriptive Statistics

Response of the Effect of Supplier Financial Stability on Procurement Performance

The first hypothesized objective was to determine the effect of supplier financial stability on procurement performance of the public Universities in Coast region, Kenya. The parameters for measuring supplier financial stability included capacity to supply, supplier's ability, suppliers profit margin, suppliers credit period and suppliers working capital. The findings are illustrated in Table 4.7

Table 4.7 Response on Supplier's Financial Stability

Responses	Frequency	Percent
Strongly Disagree	6	7.4
Disagree	11	13.6
Uncertain	8	9.9
Agree	46	56.8
Strongly Agree	10	12.3
Total	81	100.0

The results in Table 4.7 showed that a larger percent (56.8%) agree while 12.3% strongly agree that supplier financial stability positively affect procurement performance at the public Universities. Moreover, the study found out that 13.6% disagree while 7.4% strongly disagree on supplier financial stability. This finding therefore is a reflection financial stability of the suppliers is a vital aspect and key consideration in any supplier evaluation. During evaluation exercise, the financial stability is evident by the bank records and past contracts performed. In reference to literature review, Aspuro (2015) outline conditions such as financial markets and financial institutions as gullible for the economic shock in the supply market. Similarly, Prasanta, Arijit and Bhattacharya,(2016) found out that supplier financial stability should be determined at the evaluation stage since negligence to this fact may deter the supplier on contract performance once due to lack of enough financial ability. Moreover, research study by Pamela (2015) identified the supplier's financial stability to be measured by their working capital, capacity management, meeting costs and profit margin, which must be reflected on their financial statements during the bidding process for forward decision making by the buying organization. The findings of

this research therefore concur with previous findings of Pamela, (2015), Prasanta, Arijit & Bhattacharya,(2016).

Response on Effects of Supplier's Quality on Procurement Performance

The second hypothesized objective in this study was determining the effect that supplier quality has on procurement performance of public Universities in Coast region, Kenya. To effectively measure this, parameters used in the questionnaire were specifications, inputs of raw materials, work environment, policies by the government, machines and instruments used by the manufacturer. The results are presented in Table 4.8.

Response on Supplier's Quality

Responses	Frequency	Percent
Strongly Disagree	6	6.0
Disagree	11	15.0
Uncertain	9	11.1
Agree	46	50.8
Strongly Agree	9	17.1
Total	81	100.0

The illustrations in Table 4.8 indicates that 50.8% agree while 17.1% strongly agree that supplier quality affects procurement performance. On the other hand, 6.0% strongly disagree, 15.0% disagree while 11.1% were uncertain on the effect of supplier quality on procurement performance at the Coastal Universities in Kenya. An organization must enhance their quality system measures through supplier engagements and encourage continuous inspections so as to avoid disappointments to customers through discontinuous supply of materials. In the reference to research study by Kitheka *et al.*, (2013) the supplier audits, supplier development, supplier integration and setting KPI are mostly used in determine the supplier quality. Moreover, measuring the supplier's quality enhances the buying to achieve its procurement intended goals and help the organization to achieve benefits such as increased response to customers, reduced lead-times, increased profitability, increased customer loyalty, effective communication, and reduced opportunity costs from loss of customers. Further, it is vital for suppliers to store or preserve information so as to avoid poor traceability and visibility and also avoid future disputes with the buyers.

Response on Supplier's Reliability on Procurement Performance

The third objective in this research study was based on the reliability of suppliers on procurement performance. Since suppliers have immense contributions on the organizational achievements, reliability in this study was measured by open communications, durability of the products, product characteristicly features, follow-ups and response time by the suppliers. Table 4.9 summarizes the findings.

Response on Suppliers' Reliability

Responses	Frequency	Percent
Strongly Disagree	6	7.4
Disagree	11	13.6
Uncertain	9	11.1
Agree	46	56.8
Strongly Agree	9	11.1
Total	81	100.0

The results in Table 4.8 indicated that 56.8% agree, 11.1% strongly agree, 13.6% disagree, 7.4% strongly disagree while 11.1% were uncertain on the effect of supplier's reliability on procurement performance of public Universities in Coast region, Kenya. Since reliability of suppliers is the ability of suppliers to consistency respond and deliver the required at the right time Blackwell and Dixon (2016),

the results in this study reflects its importance. Additionally, this result indicates how the buying organization view suppliers in the aspect of being reliable to deliver. The Certified Institute of Purchasing and Suppliers defined supplier reliability as an ability by the supplying Organization to supply consistently and as when needed basis. A study conducted by Awoke and Singh (2020) on the factors that determine public procurement on Kenyan Universities depicted that the major issue regarding procurement functions is to ensure one buys from distinctively reliable sources. In this regard, the buying organization should choose suppliers who have the capacity to supply. The effectiveness of the evaluation process are a technique to determine the reliability of the suppliers before contractual engagements. Similarly, Onyimbo (2018), found that supplier's reliability has a positive influence on the procurement performance of the buying organization. Kiremu (2020) indicated that strategies to increasing supplier reliability includes improvements on buyer supplier relationship, efficient sourcing, adoption of short and medium-term contracts to increase competition and developing suppliers where necessary.

Response on Suppliers Service Level

The fourth objective in this study was to determine the service level of the supplier on procurement performance of the public Universities in Coast region, Kenya. The parameters for measuring supplier's service level in this study were outsourcing capacity, product knowledge, appropriate fleet management, after sale services and warranties. The results are illustrated in Table 4.10.

Response on Suppliers Service Level

Responses	Frequency	Percent
Strongly Disagree	6	2.0
Disagree	12	20.2
Uncertain	9	11.1
Agree	44	54.3
Strongly Agree	10	12.3
Total	81	100.0

The results in Table 4.10 showed that a larger number of the respondents at 54.3% agree, 12.3% strongly agree that suppliers' service level affect procurement performance of public Universities in Coast region, Kenya. On the other hand, 20.2% disagree, 2.0%strongly agree while 11.1% were uncertain on the effects that supplier's service level has on procurement performance of public Universities in coast region, Kenya. Since supplier's service level is determined by product information, shared communications, after sale services and warranties offered, Davis (2017) established that service level agreements are established by negotiation and building a consensus within the contracting parties. In the aspects of an established service levels, any deliverables below the set standards are not to be accepted as this will deviate from the previously approved standards. Gemmel and Vandaele, (2015)in their study found out that the set service level should be specific, measurable, achievable, relevant and time bound. Moreover, Williamson (2015), showed that supplier service level agreement is a form of contract definition, and the more the contract is defined, the more it makes it clear in evaluating suppliers for a pre-determine performance level. Service level enhances more importantly in indicating a standard of achievement before the actual work.

Response on Procurement Performance

The main purpose of this research study was determining the effects of supplier evaluation on procurement performance of public Universities in coast region, Kenya. The study was stimulated by the knowledge gap identified in the background. For a better

determination, specific measures to supplier evaluation were identified in the study. These measures included supplier's financial stability, supplier's quality, supplier's reliability and supplier's service level. Table 4.11 shows the results.

Response on Procurement Performance

Responses	Frequency	Percent
Strongly Disagree	7	8.6
Disagree	11	13.6
Uncertain	7	8.6
Agree	46	56.8
Strongly Agree	10	12.3
Total	81	100.0

The tabulated results in Table 4.11 indicated that 56.8% agree and 12.3% strongly agree that the selected variables are the effects of procurement performance of public Universities in coast region, Kenya. Further observations indicated that 13.6% disagree, 8.6% strongly disagree while 8.6% were uncertain on the effects of procurement performance. This result clearly indicates that the respondents were aware on the aspect of procurement performance in the selected Public Universities. CIPS (2018) have defined procurement performance as achieving the set functions of acquisition process. Procurement performance begins by properly evaluating suppliers based on evaluation criteria as per contract requirement. Additionally, this finding reflects the importance of understating the measures of procurement function in the Public Universities. In a study by Awoke & Singh (2020), on the key factors that affect performance in public procurement in Kenyan Universities, used cost, quality, experience and location and found a positive relationship. Onyimbo (2018) highlighted factors such as strategic supplier selection, timely procurement plan preparation and buyer strategic relationship among other factors affecting procurement performance. Manyenga, (2015) did a study on selection of suppliers on procurement performance in public institutions and found a positive relationship between service level, quality, supplier resources and standardization. Therefore, the study findings in this research incurs with other research done in different spheres of knowledge.

Reliability Test

The study conducted a reliability test to check on the reliability of the research instrument (questionnaire) items used whereby Cronbach Alpha was used. The results are summarized in Table 4.12.

Cronbach Alpha

Variable	Measure	Cronbach Alpha
Supplier Stability	i. Financial position	0.943
	ii. Workforce is	
	iii. Increased demand	
	v. Profit margin	
	v. Credit period	
	vi. Working capital	
Supplier Quality	i. Specifications	0.926
	ii. Raw materials	
	iii. Working environment	
	v. Policies	
	v. The machines and instruments used	
	vi. Educated and trained	
Supplier Reliability	i. Open to commutation	0.956
	ii. Conformance Specifications	
	iii. Product durability of the	
	v. Product features	
	v. Follow-ups	

Supplier Level	Service	vi.	Speed and response time	
		i.	Outsourcing Capacity	
		ii.	Ease of communication	0.937
		iii.	Research and development	
		v.	Fleet management	
		v.	Provision of after-sale services	
		vi.	Provision of manufacturer warranty	

R	R Squared	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df 1	df 2	Sig. F Change
0.760	.914	.704	758.321	0.491	3.355	3	2	0.03 ^b

The results in Table 4.12 shows that supplier reliability had Cronbach Alpha coefficient of 0.956 (highest score) followed by financial stability, at 0.943; services level at 0.937; and suppliers' quality at 0.926. Since the reliability results exceeds 0.7; a point recommended as the lower level of acceptability (Kothari, 2013); the internal consistency reliability measures used in this study were considered high and used for further analysis.

Correlation Analysis

To further ascertain the strength and the direction of the relationship between the scores of the same instrument, a correlation analysis was computed to indicate the similarity with one another and results are shown in Table 4.13. Moreover, the validity of research instruments was measured through the opinion of experts especially the research supervisor, who gave a made valid suggestions and further tested during the pilot study. All the measures were found to be valid as a confirmatory for further analysis as shown in Table 4.13.

Correlation Matrix

Variable	X ₁	X ₂	X ₃	X ₄	Y
X ₁ Pearson Correlation	1				
X ₂ Pearson Correlation	0.931**	1			
X ₃ Pearson Correlation	0.894*	0.969**	1		
X ₄ Pearson Correlation	0.850*	0.912*	0.941**	1	
Y Pearson Correlation	0.716**	0.702*	0.680**	0.727**	1
N	81	81	81	81	

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

The correlation analysis in Table 4.13 revealed that all the variables were significant at 0.01 (two tailed) as the collinearity between the variables were within the accepted limits. The correlations between supplier's financial stability, supplier's quality, supplier's reliability and suppliers service level were found to be all positive and therefore deemed to have met the assumption of multi-collinearity as depicted by Kothari, (2013). Further, based on the study findings and in relation to a correlation scale; r≥0.5 showing a strong correlation and r≤0.5 showing a weak correlation, the correlation analysis depicted a strong relationship between supplier financial stability, supplier quality, supplier reliability and the supplier's service level on procurement performance of public universities in Coast region, Kenya.

Regression Analysis

A regression analysis was performed to determine the model fit of the variables and the relative contribution of each of the predictors to the variance results. A summary of the performed regression model fit with change statistics is illustrated in Table 4.14.

Table 4.14 Regression Model Summary

- a. Dependent Variable: Procurement Performance
- b. Predictors: (Constant), supplier's financial stability, supplier's quality, supplier's reliability and the service level.

Table 4.14 shows the R and R² values. The R-value represents a correlation of the variables at 0.760 (coefficient of determinants level) showing a high degree of the correlation of the variables since it is closer to one. The R² value indicates how much of the total variation in the dependent variable (procurement performance) can be measured by the selected independent variables. In this case, a combined measure in the adjusted R² reflects that a 70.4% of the procurement performance depends on supplier's financial stability, supplier's quality, supplier's reliability and supplier's service level. Moreover, this finding concurs with the findings of Seung-bur and Ador (2016) who found out that procurement performance is influenced by the attributes of the supplier evaluation. Additionally, observations from Table 4.14, depicts that for every unit change in the independent variable, there is an equivalent unit change in the dependent variable. According to Ketchen and Hurt (2016), the adjusted R-square is a modifier of R-square to show several predictor variables. The adjusted R² increases when one unit increases the composing variable and normally positive. On the other hand, Mohammed (2015) has indicated that R² measures the proportion of the variance for the dependent variable and is explained in the regression outcome. The R² explains the extent to which the variance of one variable explains the variance of the second variable. Thus the R² has been used in this research study to show the variance of the selected independent variable of supplier evaluation on procurement performance; a concept contended by Ketchen and Hurt, (2016). In this study, the incremental R² is a reflection of the unique criterion variance accounted for by the predictors after other predictors are partially included. In a hierarchical order of regression, the predictors were inserted into the model by use of stepwise criterion for increasing the R² and by use of incremental R², table 4.14 provided insights into the unique contributions for explaining the variance in the predictor variable.

ANOVA Analysis of Procurement Performance

The analysis of the variance was done using ANOVA (1-tiled) to test for the significance between the variables of the study. The results are illustrated in Table 4.15.

Table 4.15 ANOVA of Procurement Performance

Model	Sum of Squares	Mean Square	F	Sig.
Regression	60.362	10.060	6.809	0.002 ^b
Residual	221.612	1.477		
Total	281.975			

- a. Dependent Variable: Employee Performance
- b. Predictors: (Constant), Supplier's Financial Stability, Supplier's Quality, Supplier's Reliability and Supplier's Service Level

The Analysis of Variance in Table 4.15 indicated that F-value is a positive (6.809) statistics with a significant change of 0.002%. These

results implied that the selected variables on the effects of procurement performance are statistically significant. The analysis of variance is used to determine whether the regression model is a good fit for the data. It also gives the F-test statistics; the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables. The coefficients or beta weights for each variable allows the study to compare the relative importance of each independent variable as illustrated in the hypothesis testing.

Table 4.16 Coefficients of the Regression Analysis

Variables	Unstandardized Coefficients		Standardized Coefficients	T	SS ig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	2.333	1.210		1.586	0.117	-.085	.750		
X ₁	.899	.057	.872	15.848	0.000	.786	1.012	1.000	1.000
X ₂	.506	.230	.486	2.204	0.030	.049	.963	.014	72.546
X ₃	.507	.228	.487	2.225	0.029	.053	.961	.014	72.547
X ₄	.312	.216	.303	1.443	0.153	-.119	.742	.015	66.543

Dependent Variable: Procurement Performance

- Key X₁ - Supplier's Financial Stability
- X₂ - Supplier's Quality
- X₃ - Supplier's Reliability
- X₄ - Supplier's Service Level

Table 4.16 shows a regression coefficient of the selected variables representing the mean change in the response in the predictor variable (procurement performance). In every unit change of dependent variable, there was a 0.075 change in the dependent variable (procurement performance). The collinearity of the variables depicts a linear relationship. This phenomenon (collinearity) of the predictor variable can be predicted by a substantial effect on the other variables. Since there is no predictive power of the predictor variable as a whole, Table 4.16 indicates how at least within the sample data reflects a change in the procurement performance. Moreover, there is an assumption of no multicollinearity in the data. The results therefore all positive and statistically significant. Moreover, the results supported the hypothesis that supplier evaluation has a significant positive effect on procurement performance. Regression results are in consistent with the findings of the previous researchers such as Kuncoro & Suruani (2018) and Korir *et al.*,(2016). Based on the findings from Table 4.16 (coefficient of regression), the test of hypothesis of the study is summarized in Table 4.17.

Hypothesis Testing

Hypothesis	P-value	Decision
H1	0.000	It is less than 0.05; reject the null hypothesis
H2	0.030	It is less than 0.05; reject the null hypothesis
H3	0.029	It is less than 0.05; reject the null hypothesis
H4	0.153	It is greater than 0.05; do not reject the null hypothesis

$$Y = 2.333 + 0.899x_1 + 0.506x_2 + 0.507x_3$$

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of the Findings

Since the main objective of the study was to determine the effect of supplier evaluation on procurement performance, the study was done among the Universities in Coast Region, Kenya. Moreover, the study was supported by specific objectives such as supplier's financial stability, supplier's quality, supplier's reliability, and supplier's service level on procurement performance. Based on a relevant theoretical and empirical review, a conceptual framework was developed for the study. This study was different from the previous studies by looking at key aspects of supplier evaluation such as Supplier's Financial Stability, Supplier's Quality, Supplier's Reliability and Supplier's Service Level to link with procurement performance of the selected Public Universities at the coast region. Hypotheses were developed concerning the relationships between these variables with specific of the case study (Public Universities at the coast Region, Kenya). Moreover, a data collection tool; questionnaire in the Likert Type Scale format was developed to measure the variables. Carefulness were given to the construction of the questionnaires. Careful considerations were more given to the intuition of the respondent so that their response could not be bias. Long questions as well as non-relevant questions were all avoided. All the necessary documentations and ethical considerations were all observed especially during the data collection. The study found out that all the determining variables used (financial stability, supplier's quality, supplier's reliability and supplier's service level) had a significant effect on procurement performance of the Universities in the Coast Region Kenya. At the 95% confidence level, the P-value were found to be 0.002% while the value of supplier's financial stability was 0.899, supplier's quality was 0.506, and supplier's reliability was 0.507 while supplier's service level was 0.312. Further, the study established that supplier's financial stability and supplier's reliability has a major effect to procurement performance of Universities in the Coast Region Kenya. At the confidence level of 95%, the supplier's quality and suppliers service level had a 5% significant effect on procurement performance of the Coast Universities.

CONCLUSIONS

Based on the measures in this study, the R-value represented a correlation of the variables at 0.760 (coefficient of determinants level) that showed a high degree of variance among the variables in the study. The R² value indicates how much of the total variation in the dependent variable (procurement performance) can be measured by the selected independent variables. In this case, a combined measures in the adjusted R² reflects that a 70.4% of the procurement performance depends on supplier's financial stability, supplier's quality, supplier's reliability and supplier's service level. Moreover, the study was conducted to determine the effects of supplier evaluation on procurement performance of the public universities in the Coast Region, Kenya. The study was further supported by specific areas of the supplier evaluation such as supplier's financial stability, supplier's quality, supplier's reliability and suppliers service level. The study was done descriptively using a sample size of 88 from different respondents who were either procurement staff, finance staff or evaluation committee. The population in the study was taken from different departments from the universities in the Coast Region such as Technical University of Mombasa, Pwani University and Taita Taveta University forming a sample size of 88 employees. Using structured questionnaires, the valid response rate was 72% and data was analyzed using inferential statistics. The first objective was to determine the effects of supplier's financial stability on procurement performance of public universities in Coast region, Kenya. The findings showed that a larger percentage (56.8%) agree while 12.3% strongly agree that supplier's financial stability positively affects

procurement performance of public universities in the coast region, Kenya. Consecutively, 13.6% disagree while 7.4% strongly disagree on the effect. As depicted by Aspuro (2015), a financially unstable supplier cannot meet the supply objectives more so when the contract requires a lot of financial requirements and capital. Kiprotich & Okello (2016) also found out that a buying organization can achieve a competitive advantage and improve on the performance of an organization. This research therefore concluded that supplier's financial position should be considered very vital during bid evaluation. The second objective was to determine the effects of supplier's quality on procurement performance of public universities in Coast region, Kenya. The results showed that 50.8% agree while 17.1% strongly agree that supplier's quality affects procurement performance. On the other hand, 6.0% strongly disagree while 15.0% disagree as 11.1% were uncertain on the effects that supplier quality has on procurement performance of public universities at the Coast Region, Kenya. A study done in South Korea by Seung-burn & Ador (2016) concluded that evaluating suppliers based on quality is very vital as quality is determined mostly by the buying organizations. Similarly, Makokha & Theuri, (2016) concluded that quality assurance and quality control are systems that buying organization must ascertain during evaluation process before engaging the supplier. The findings in this research concur with the findings from the literature review and concluded that supplier's quality positively affect procurement performance at the public Universities in the Coast Region, Kenya. The third objective in this study was to be determine the effect of supplier reliability on procurement performance. The results indicated that 56.8% agree, 11.1% strongly agree, 13.6% disagree, 7.4% strongly disagree while 11.1% were uncertain on the effect. Chirchir (2015) concluded that the buying Organization can increase their confidentiality when supplier attests their reliability based on communications, knowledge, on time delivery and response. These findings concur with CIPS (2015) where a report was made on monitoring performance of suppliers and pointed out that strategic monitoring on supplier reliability is critical in management of buyer- supplier relationship and performance. It's very important for procurement and supplies function to recruit skilled workforce in supplier relationship competence so as to increase the performance of both the supplier and the buyer or the procuring entity. A report by CIPS (2015), reported that all the stakeholders involved in the procurement function should create an awareness of the performance management criteria so as to enhance its reliability. Consequently, the findings on this research were relevant to the findings in the past study which shows a positive effect of supplier's reliability and procurement performance. The last objective in this research study sought was based on the determination of the effects of supplier's service level on procurement performance of public universities in Coast region, Kenya. The results indicated that a larger number of the respondents at 54.3% agree, 12.3% strongly agree that supplier's service level affect procurement performance. On the other hand, 20.2% disagree, 2.0% while 11.1% were uncertain of the effect that supplier's service level has on procurement performance. In reference to literature review, Beaumont, (2016) listed the potentialities of setting service level agreement to includes reduction of monitoring costs, improved service quality and risk avoidance since there is a clear acceptable standard of supplier performance. Accordingly, Vandaele, Rangarajan, Gemmel & Leivens (2016) found a positive relationship between service level and procurement performance. Vandaele *et al.*, (2016) further listed factors for setting service level to includes making service providers more aware of customer needs, for provision to the expectations, and helps to optimize the allocation of scarce resources. Williamson, (2015) on other findings spiced that supplier service helps in the definition of the scope of the contract thus clear for evaluation process. The findings in this research therefore concurs with the previous research and

concludes that since service level has an effect on procurement performance, the buying organization should have a clear structure in setting the service level with are SMART.

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