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INFLUENCE OF ELECTRONIC TENDERING PRACTICE ON SUPPLY CHAIN PERFORMANCE OF SUGAR PROCESSING FIRMS IN KENYA

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Abstract

Purpose: *The study aimed to establish the influence of electronic procurement practices on supply chain performance of sugar processing firms in Kenya.*

Objective: *The study considered one specific objective; to establish the influence of electronic tendering practice on supply chain performance.*

Materials and methods*: The study applied a mixed research design and the target population of 7,584 drawn from the 12 sugar processing firms in Kenya. Stratified random sampling was applied to come up with a sample of 367. Data was gathered by questionnaires and interviews. Pearson's correlation coefficient determined the relationship between electronic tendering practice and Supply chain performance. Regression analysis was used to test the hypothesis.*

Results: *Results reveal that there is significant relationship between electronic tendering practice and supply chain performance. It is recommended that Sugar firms in Kenya need to unutilized all the electronic tendering modules to enable them improve supply chain performance function.*

Keywords: *E-procurement, Sugar Firms, Supply Chain Performance, Tendering*

I. INTRODUCTION

Electronic procurement is an ever-growing means of conducting business in many industries, around the world and is projected to reach $ 3trillion in transaction this year, up from $75 billion in 2002 (Venkatesh, 2010). The benefits of e-procurement optimization are, increased efficiency, improved transparency, enhanced risk management, higher levels of integrity, greater and better access to government procurement for small and medium size enterprises, corruption avoidance and cost reductions as compared to traditional manual procurement. While there are various forms of e-Procurement that

concentrate on one or many stages of the procurement process such as e-Tendering, e-Marketplace, e-Auction/Reverse Auction, and e-Catalogue/Purchasing, e-Procurement can be viewed more broadly as an end-to-end solution that integrates and streamlines many procurement processes throughout the organization. Although the term end-to-end e-Procurement is popular, industry and academic analysts indicate that this ideal model is rarely achieved and e-Procurement implementations generally involve a mixture of different models (Xu Z et al., 2015).

E-procurement systems have been in use for over two decades. Despite the maturity of the technology landscape, we estimate that companies use only about 25% of the available functionality of their solutions, in part due to lack of training or funds, but also because the solution may not be well aligned to procurement's evolving requirements. Notwithstanding these challenges, e-procurement offers clear benefits that can be used to build a business case for funding, increased utilization or investing in newer options. For example, a company with $1 billion in indirect spend can save over $3 million annually by using e-procurement to reduce non-compliant buying and order cycle times (Patrick Connaughton *et al.*, 2014).

Public hospitals in Kenya are among the worst performing State institutions when it comes to technology access and use. New data indicates that in comparison to other government bodies, public hospitals have the lowest levels of internet access and are less likely to offer e-government services or have a website. 36.7 per cent of public hospitals do not have internet access while only 13.1 per cent of the surveyed institutions have a website. According to the study, 11.2 per cent of public hospitals have a mobile payment account, making it less convenient for Kenyans to settle their bills electronically when they receive treatment. The lack of tech savviness extends to procurement where only 20.3 per cent of the hospitals are using e-procurement platforms, the lowest rate among public institutions. The medical institutions are also more vulnerable to cyber crime with statistics showing that 48.6 per cent of public hospitals have lost data due to virus attacks (KNBS & CA, 2017).

Statement of the problem

The average cost of producing one ton of cane in Kenya is USD 22.5 while that of the regions is as low as USD 13 per ton. The average cost of producing a ton of sugar in Kenya is USD 870 (or USD 700 exclusive of finance charges) compared to USD 350 in Malawi and USD 400 in Zambia, Swaziland and Egypt and in USD 450 in Sudan (Kenya National Assembly, 2015). The high cost of production per ton of sugar and the reduction in sugar output can be associated to the application of manual procurement systems by sugar processing firms in Kenya. The application of manual procurement processes to procure goods, services or works is a challenge in acquiring such goods, services or works at the right time, price, place, quantity and quality for the use of all the departments in an organization. Because of luck of efficiency and effectiveness of procurement process, the government of Kenya continues to lose millions of shillings through fraud in procurement activities in the government mainstream. Parastatals operations have become inefficient and non-profitable, partly due to multiplicity of objectives, stifled private sector initiatives and failing of joint ventures requiring the government to shoulder major procurement burdens (Bilali & Bwisa, 2015).

Many studies have related electronic procurement with other variables like operational and overall organizational performance. Muhia and Afande (2015) studied the role of adoption of e-procurement strategy on procurement performance of state corporations in Kenya by focusing on Kenya Revenue

Authority. Fozia, Namusonge and Shaelle (2016) studied the effect of electronic supplier management practices on the implementation of preference regulations on state corporations in Kenya. A few studies have related e-procurement with Supply chain performance while none had studied such relationship in the sugar manufacturing sector. The aim of this study is therefore to fill this knowledge gap by finding out the influence of electronic tendering, with an aim to recommend how electronic tendering can improve procurement of goods and services in the manufacturing sector.

General objective

The general objective of the study was to establish the influence of E-procurement practices on supply chain performance of sugar processing firms in Kenya

Specific objectives

To determine the influence of electronic tendering practice on supply chain performance of sugar processing firms in Kenya.

Research Question

What is the significance of electronic tendering practice on supply chain performance of sugar processing firms in Kenya?

Research hypothesiss

Ho_1: Electronic tendering practice has no significant influence on supply chain performance of sugar firms in Kenya.

II. LITERATURE REVIEW

Review of Variable

Electronic Tendering Practice

Procurement departments are under pressure to reduce costs while maintaining timeliness and quality. Inconsistent procurement policies can result in the cancellation of projects, cost overruns and delays, staff dissatisfaction and litigation. Procurement policies must reflect the needs of the organization in question. After policies have been established, selecting the right electronic tendering tools and techniques through careful analysis can help you meet your procurement challenges. In recent years, public and private sector organizations have come under intense scrutiny to improve their procurement practices. Inconsistent procurement policies have resulted in the cancellation of projects, cost

Over runs and delays, staff dissatisfaction and litigation. Increasingly, stakeholders, shareholders and the general public are demanding that organizations take greater accountability for their actions.

Supply Chain Performance

Procurement performance is the backbone of an organization success since it contributes to competitive purchase and acquisition of quality goods that puts the organization products or services in the competitive edge in the market. However, on several occasions, poor procurement performance has caused private and public sectors financial loss due to delivery of poor quality work materials, loss of value for money and inflated prices. Poor procurement performance also contributed to decrease of profitability of private sector (Juma, 2010). According to (Migai, 2010), poor procurement performance

is a major hindrance to private sector organizations growth since it causes the delay of delivery, increase of defects, delivery of low quality goods or non delivery at all. Poor procurement performance in the private sector has been a problem due to incompetent staff, traditional procurement procedures, and inability to embrace e-procurement, poor coordination of procurement activities, lack of quality assurance policies and lack of proper regulations (Juma, 2010).

Beamon (1999), mentions some features present in effective performance measurement systems and these include the following: inclusiveness (measurement of all pertinent aspects), universality (allows for comparison under various operating conditions), measurability (data required are measurable), and consistency (measures consistent with organization goals). Also, the strategic goals include key elements such as the measurement of resources (generally cost), output (generally customer responsiveness) and flexibility. Stevens (1990) states that to build up an integrated supply chain requires the management of material flow from three perspectives: strategic, tactical, and operational. From these perspectives, the use of systems, facilities, and people must be seen as a whole and work in a coordinated manner. He also mentions that a company can measure the supply chain performance by inventory level, service level, throughput efficiency, supplier performance and cost. Lear-Olimpi (1999) also stated that logistics play an important role in pursuing supply chain excellence which will lead to improved business performance (Lear-Olimpi, 1999). Another critical sub-factor of successful supply chain management is the analysis of the supplier market (Purchasing, 2007). An important point according to Canbolat, Gupta, Matera and Chelst (2008) is outsourcing, which is significant in the supply chain management for the opportunities and risks that it offers. Then, this factor comprises four sub-factors logistics, supplier markets, supplier performance, and materials sourcing.

Empirical Review

Nafula and Namusonge (2017), effect of e-procurement practices on efficiency frontier of kakamega county government, major findings were that, the availability of websites to facilitate e-procurement within the County Government of Kakamega was low and this might affect their efficiency in procurement. In addition, placing orders for supplies online within the County Government of Kakamega was done to a low extent. There was also less availability and reduced application of e-procurement platform and practices in e-ordering within the County Government of Kakamega and this ultimately affects their efficiency in performance of the procurement function. The study recommends that procurement departments in county governments should adopt a user-friendly information system that all suppliers can use with ease be they tech savvy or the old suppliers. This will reduce the bias on the use of electronic procurement and all will embrace it on procurement staff competencies.

Nyile and Shale (2016) in their study, role of sustainable procurement practices on supply chain performance of manufacturing sector in Kenya: a case study of east african portland cement company, found out that the use of e-procurement systems has enabled prompt payment of suppliers, majority 34.7% to a large extent agreed as 26.5% to a very large extent agreed that the use of e-procurement has enabled prompt payment. This implies that there is a good rapport between suppliers and EAPCC since one of the elements that cause difference between an organization and suppliers is eliminated. The use of e-procurement systems also is termed to reduce ordering costs. 20.4% of the respondents to a very large extent agreed to the fact as 32.7% and 34.7% to a large extent and moderate extent respectively agreed on the same. This is because use of electronic systems in procurement reduces the costs of stationery and all other secretarial expenses like phone calls and supplier visits costs.

Kioko and Mwangangi (2017) carried out a study on the influence of e-procurement on performance of parastatals in Kenya. The main objective of this study was to analyze the influence of e-procurement on performance of parastatals. The specific objectives were to find out whether e-sourcing, e-informing, e-payments and e-tendering have a positive relationship with performance in parastatals. Results also showed that 3% of respondents indicated to very great extent, great extent was at 12 %, moderate extent was 37 %, while little extent was at 27% and not at all was at 21%. Results indicated that majority of the respondents 100 % agreed on the statement that e-bidding greatly influences market share. Further results indicated that 69 % of the respondents were in agreement that e-evaluation greatly influences market share. A 47% of the respondents agreed that availing tender documents online greatly influences market share. 100% of the respondents expressed agreement on the statement that e-bidding greatly influences profitability. Results indicated that majority of the respondents 96 % agreed on the statement that e-evaluation greatly influences profitability. Results indicated that majority of the respondents 92 % agreed on the statement that availing tender documents online greatly influences profitability. 90% of the respondents expressed agreement on the statement that e-bidding greatly influences delivery time. Results indicated that majority of the respondents 88% agreed on the statement that e-evaluation greatly influences delivery time. Results indicated that majority of the respondents 87% agreed on the statement that availing tender documents online greatly influences delivery time. The average mean of all the statements was 2.5 indicating that majority of the respondents agreed on insourcing influence on performance of parastatals in Kenya. Based on the study findings, the study concludes that performance of parastatals can be improved by e-sourcing, e-informing, e-payment and e-tendering. Finally, the study recommended that public institutions should embrace e-procurement practices so as to improve their performance and further researches should to be carried out in other public institutions to find out if the same results can be obtained.

Research gap

Most studies reviewed have concentrated on the effects of E-procurement with other variables like operational, compliance policy manuals and overall organizational performance. Studies carried out in Kenya focused on other areas of procurement and logistics. Muhia & Afande (2015) studied the role of adoption of e-procurement strategy on procurement performance of state corporations in Kenya by focusing on Kenya Revenue Authority. Kioko and Mwangangi (2017) studied the influence of e-procurement on performance of parastatals in kenya. Fozia, Namusonge and Shaelle (2016) studied the effect of electronic supplier anagement practices on the implementation of preference regulations on state corporations in Kenya. Nafula and Namusonge (2017) studied the effect of e-procurement practices on efficiency frontier of Kakamega County Government. Barasa, Namusonge and Okwaro (2017) studied the effects of E-procurement on the organizational Performance of County Governments in Kenya. A few studies have related e-procurement with Supply chain performance while none had studied such relationship in the sugar manufacturing sector the gap which this study intends to fill.

III. RESEARCH METHODOLOGY

This study employed mixed research design as by gathering both qualitative and quantitative data through a questionnaire, interviews and observations. The target population for this survey included all the 12 sugar companies in Kenya, both Public and private owned with over 7,584 prospective respondents. In this study the sampling frame is the same as the population which comprises of all the 12 sugar Companies both public and private owned. Yamane (1967:886) formula to calculate sample sizes has

been used to establish the sample size, n=N/ [(1+N (e) ^{2}], Where n is the sample size, N is the population size, and e is the level of precision. When this formula is applied to the population of 7584, we get Equation, n= 7584/ [1+7584(0.05)^2] = 379. The sample 379 will be identified randomly from each of the 12 factories. Questionnaires were given to 367 respondents while interview method was applied to 12 purchasing managers, one from the 12 factories. Both quantitative and qualitative data collection methods were applied. A pilot study to test the validity and reliability of the questionnaire was undertaken. Quantitative data was analyzed using descriptive statistical method; the statistical tools such as mean, mode and standard deviation were used. Inferential statistic such as Pearson correlation coefficients and multiple regression models were used. Multiple regression analysis was employed to test the hypotheses. Multiple regression analysis was applied to analyze the relationship between dependent variable and independent variable. The results were fitted into the regression model below for prediction.

$$\mathbf{Y = \beta_0+\beta_1 x_1 +\varepsilon,}$$

Where: Y = Supply chain performance (value of dependent variable),

β_0, β_1, are regression coefficient to be estimated

X_1= E-Tendering practice

IV. RESEARCH FINDINGS AND DISCUSSION

Supply chain performance

Respondents were asked their opinion whether E-procurement practices enhances supply chain performance, majority 98.1% were of the view that E-procurement practices enhances supply chain performance while 1.9% had a contrary view as shown in Table 4.1 below. The findings support the fact that E-Procurement solutions are seen as a way to address efficient procurement requirements hence the reason why many firms are now responding to the need procurement reforms to enhance service delivery. The findings concur with Boudijilda and Pannetto (2013) who found that most state corporations' are fast adopting e – procurement to enhance their procurement performance in their study on the economic justification for e-procurement in developing countries.

Table 4. 1 Supply chain performance

Response	Frequency	Percent
1. No	5	1.9
2. Yes	261	98.1
Total	266	100.0

Results of supply chain performance

From the findings in table 4.2, the respondents agreed to a large extent that the application of E-procurement practices reduces purchasing costs as indicated by a mean score of 4.43. Further, it was their view that E-procurement practices improved efficiency and time taken to complete procurement process with a mean of 4.52. It had enhanced standardized purchasing processes across the organization with a mean score of 4.31. It had resulted to reduced administrative cost with better effectiveness (mean 4.22).

Respondents agreed that E-procurement had improved effectiveness of SC processes (mean 4.24). It had resulted to reduced discretion and thus increased transparency (mean 4.27). It has enhanced SC mangers decision making (mean 4.18) and the E-procurement practices had made possible reduced errors of order transmission (mean 4.20). However, respondents also indicated that E-procurement practices had slightly reduced procurement corruption and inventory levels as indicated by the mean score of 3.85 and 3.94 respectively. This concurs with the research, Role of E-Procurement Strategy in Enhancing Procurement Performance in State Corporations in Kenya, that as a higher percentage of enterprise spend and more spend categories flow through e-procurement systems, greater cost savings and other benefits are realized. E-procurement technology and other advanced technologies essentially are freeing procurement professionals to become true supply managers at these enterprises, and the role of procurement is shifting from reducing costs to creating supply value for the company, (Shalle, Guyo and Amuhaya, 2013). Findings also concur with the study of Nyagah and Mwanga (2015). Influence of e-procurement implementation on supply chain performance in dairy industry in Kenya: a case of New KCC limited, that there is a positive correlation between dependent variable; supply chain performance and independent variables; ERP, E-order Processing, information sharing and E- supplier appraisal and the study concludes that ERP, E-order Processing, information sharing and E- supplier appraisal influences supply chain performance to a great extent.

Table 4. 2 Supply chain performance

Statement	N	Mean	Std. Dev
1. Reduces purchasing costs	266	4.43	0.74
3. Improves efficiency and time taken to complete procurement process	266	4.52	0.62
4. Standardizes purchasing process across the organization	266	4.31	0.69
5. Reduces administrative cost with better effectiveness	266	4.22	0.80
6. Improves effectiveness of SC processes (std process)	266	4.24	0.76
7. Reduces discretion & increases transparency	266	4.27	0.83
8. Improves SC mangers decision making	266	4.18	0.78
9. Reduction in errors of order transmission	266	4.20	0.77
10. Reduces procurement corruption	266	3.85	1.00
11. Reduction in inventory	266	3.94	1.01

Electronic tender processing practice

Respondents were asked their opinion whether E-tender processing practice enhances supply chain performance to which a majority 95.1% were of the view that E-tendering practice enhances supply chain performance while 4.9% had a contrary view as shown in Table 4.3.

Table 4. 3 whether Electronic tender processing enhances SC performance

Response	Frequency	Percent
1. No	13	4.9
2. Yes	253	95.1
Total	266	100.0

Results of electronic tendering practice

Respondents were asked their opinion on how E- tendering practice affects supply chain performance and they indicated that E-tendering practice reduced tender processing time (mean 4.38). They further indicated that E-tendering practice eliminates postal, printing & storage costs (mean 4.37). They indicated that suppliers were moderately able to access tenders/quotation/requests any time anywhere in the world (mean 3.95). Respondents agreed that to a large extent alteration of tender documents was impossible or easy to detect (mean 4.16). They indicated that e-tendering dad an audit trail as neither party can deny sending or receiving documents (mean 4.02). However, they noted that ability to eliminate non-compliant bids automatically was possible to a moderate extent (mean 3.74). It is noted that it provided fairness to all regardless of geographic location of a supplier (mean 4.18). Respondents agreed that E-tendering practice improved audit trails to a large extent (4.10). Respondents indicated that E-tendering practice slightly reduced corruption (mean 3.94). They indicated that e-tendering practice had been affected by Computer/network malfunctions in bid submission (3.91) as shown by table 4.6. This concurs with in the study by Geoffrey, Muma and Kioko and Mwangangi (2017) on the influence of e-procurement on performance with reference to parastatals in Kenya, found out that Quality of goods purchased recorded positive growth, timely purchases and stock out reduction further recorded positive growth, cost reductions due to minimal or no reworks also recorded positive growth. From inferential statistics, a positive correlation is seen between each determinant variable and performance of parastatals.

Aruguru, (2015), relationship Between E-Tendering and Procurement Performance among County Governments in Kenya where the findings were that e-tendering has remarkably improved the tendering process through its merits such as efficiency, transparency and cost effectiveness. The findings also concur with the study by Wanyonyi and Moturi (2015) that established that information technology helped in reducing ordering time and follow up. Online communication, online tender advertising and computerized tendering process has an influence on performance of the procurement function as it offers smoother and faster process flow and efficient distribution of information. This enables an institution to know when to make an order. Barasa, Namusonge, Okwaro (2017) in the study, effects of E-procurement on the organizational Performance of County Governments in Kenya: A Case study of Bungoma County Government, concluded that e-tendering plays a vital role to enhance organizational performance of the county government.

Table 4.4 Electronic Tendering practice

Statements	N	Mean	Std. Dev
1. Reduces tender processing time.	266	4.38	0.70
2. Eliminates postal, printing & storage costs.	266	4.37	0.67
3. Suppliers are able to access tenders/quotation/requests any time anywhere in the world	266	4.42	0.72
4. Tender documents cannot be accessed by unauthorized person	266	3.95	0.94
5. Alteration of tender documents is impossible or easy to detect.	266	4.16	0.82
6. Neither party can deny sending or receiving documents	266	4.02	1.03
7. Ability to eliminate non-compliant bids automatically	266	3.74	1.09
8. Provides fairness to all regardless of geographic location of a supplier	266	4.18	0.85
9. Improves audit trails	266	4.10	0.94
10. Reduces corruption	266	3.94	1.06
11. Computer/network malfunctions can affect bid submission	266	3.91	1.00

Qualitative Analysis

Electronic tender processing practice

On e-tender processing practice, procurement managers were asked whether in their view E-tender processing practice enhance supply chain performance and the benefits of E-tender processing practice. On the first question on one theme emerged. All the procurement managers interviewed were in agreement the E-tender processing practice enhances supply chain performance. This concurs with findings of Rotich, Muma and Waruguru (2015) in the study, Relationship Between E-Tendering and Procurement Performance Among County Governments in Kenya, results revealed that e-tendering is positively related with performance of supply chain function of County Governments in Kenya. On the second question, the themes that emerged include, that E-tender processing reduced human error of the supply chain. They agreed that E-tender processing practice enables buyers to monitor tender processing effectively. They also indicated that E-tender processing enabled many suppliers to put in their bids because the advertisement of tenders is seen by many prospect suppliers. E- Tender processing guides tender tendering through a very structured process and where one must complete one part before you can progress to the next. E-tendering goes some way to leveling the playing field, everyone is answering the same questions and often within a set word limit so it should be much easier for the evaluator to reach an objective decision with an e-tender than a conventional tender. An e-tender usually has some fool proofing to it. So you cannot submit an e-tender unless you have completed mandatory sections or at the very least it will warn you that you have not attached the documents. This means it is almost impossible to submit a non compliant bid.

Pearson product correlation coefficient

The Pearson product-moment correlation coefficient was used measure of the strength of a linear association between the two variables (Independent and Dependent). The Pearson correlation coefficient, *r*, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association; that is, as the value of one variable increases, so does the value of the other variable. A value less than 0 indicates a negative association; that is, as the value of one variable increases, the value of the other variable decreases.

Correlation analysis for electronic tendering practice

A Pearson product-moment correlation was run to determine the relationship between supply chain performance (dependent variable) and E-tendering practice (independent variable). It is clear from Table 4.4 that, there was a strong, positive correlation between supply chain performance and E-tendering practice, which was statistically significant (r = .713, n = 266, p = .000). These findings indicate that there is a positive linear relationship between supply chain performance and E-tendering practice, meaning that as e-tendering practice is improved, supply chain performance also improves.

The first Hypothesis postulated that,

Ho₁: E-tendering practice has no significant influence on supply chain performance of sugar firms in Kenya.

The results of multiple regressions, as presented in table 4.17 revealed that E-tendering has a beta value of r = .713 and p = .000. Since the p- value is less than < 0.05, the null hypothesis was rejected. It was then concluded that there is significant relationship between E-tendering practice and supply chain performance. The results concur with Kipngetich Ngeno and Justus Kinoti (2017) in the study, Effect of e-procurement on effective supply chain management process in energy sector in Kenya, concludes that electronic tendering has positive and significant influences on effective supply chain management process in energy sector in Kenya.

Table 4.5 Correlation for electronic tendering practice

variable	correlation	Supply chain performance	E-tendering practice
Supply chain performance	Pearson correlation	1	.713*
	Sig. (2-tailed)		.000
	N	266	266
E-tendering practice	Pearson correlation	.713*	1
	Sig. (2-tailed)	.000	
	N	266	266

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

Model summary electronic tendering practice

The model for the construct customer service was tested. The findings as indicated in the Table 4.6 shows the coefficient of determination and R=.0.713 R Square= 0.508 at 0.05 at significance level. The coefficient of determination indicated that 50.8% of the variation on supply chain performance is explained by e-tendering practice. This shows that there existed a strong positive correlation coefficient between E-tendering and supply chain performance.

Table 4.6 Model summary E-tendering

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.713	0.508	0.506	0.395

a. Predictors: (Constant), E-tendering

ANOVA for electronic tendering practice

Findings in table 4.7 shows that the probability value of 0.000 indicates that the regression relationship is highly significant in predicting how E-tendering affects supply chain performance of manufacturing organizations. The F calculated at 5% level of significance was 272.93 and since F calculated is greater than the F critical (value = 5.1922), this shows that the overall model is significant.

Table 4.7 ANOVA for E-tendering

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.688	1	42.688	272.930	0.000
	Residual	41.291	264	.156		
	Total	83.979	265			

a. Predictors: (Constant), E-tendering
b. Dependent Variable: SCP

Regression for electronic tendering practice

Table 4:7 provides the information needed for supply chain performance from influence of E-tendering. As indicated by the p-value (p=0.000), both the constant and independent variable (E-tendering) contribute significantly to the model. The regression model is presented as follows; Supply chain Performance = 1.473 +0.662 (E-tendering). The regression model has established that supply chain performance will equal to 1.473 when e-tendering equal to zero. The finding presented in table 4.29 also show that supply chain performance is predicted to improve by 0.662 when E-tendering goes up by one unit. At 5% level of significance and 95% level of confidence, E-tendering practice had p-value of 0.000 level of significance indicating that E-tendering is statistically significant ($p< 0.05$). The predictor (E-

tendering) has a low p-value hence it is likely to be a meaningful addition to the model because changes in the predictor's value are related to changes in the response variable.

Table 4.8 Regression for E-tendering practice

Model 1	Unstandardized Coefficients	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	1.473	0.166		8.853	.000
E-tendering	0.662	0.040	0.713	16.521	.000

Dependent Variable: SCP

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Electronic tendering practice

To answer the first research question, how does E-tendering practice influence supply chain performance of the sugar firms in Kenya? The study established that E-tendering processing practice enhances supply chain performance, majority 95.1% were of the view that E-tendering practice enhances supply chain performance while 4.9% had a contrary view. All modules from Company staff placing purchasing Requisition electronically, Quotation/tenders being done electronically, call for proposals done through company website, purchasing order entry done electronically, purchasing order approvals done electronically, Purchasing order Transmitted to supplier electronically, Contract monitoring done in the system, Goods receipt note (GRN) generated electronically, matching of Invoice to GRN done by the system, payment voucher entry done electronically to Payment voucher approvals done in the system are applied by respondents to a smaller extent as indicated by mean scores of 0.7, 0.92, 0.92, 0.91, 0.74, 0.91, 0.75, 0.90, 0.85, 0.87, 0.71 and 0.95 respectively. It was also established that E-tendering practice reduces tender processing time, eliminates postal, printing & storage costs, suppliers are able to access tenders/quotation/requests any time anywhere in the world, alteration of tender documents is impossible or easy to detect, neither party can deny sending or receiving documents, provides fairness to all regardless of geographic location of a supplier and it improves audit trails to a large extent as shown by mean scores of 4.38, 4.37, 4.42, 4.16, 4.02, 4.18 and 4.10 respectively. While other respondents indicated that tender documents cannot be accessed by unauthorized person, ability to eliminate non-compliant bids automatically reduces corruption and Computer/network malfunctions can affect bid submission to a moderate extent as indicated by the means scores of 3.95, 3.74, 3.94 and 3.91 respectively.

Conclusion

Electronic tender processing practice

The study concluded that there is significant relationship between E-tendering practices and supply chain performance with r= 0.713, p = 0.000. Since p value, 0.000 is < 0.05, the null hypothesis was rejected. Hence E-tendering processing practice enhances supply chain performance and E-tendering practice reduces tender processing time, eliminates postal, printing & storage costs, suppliers are able to access

tenders/quotation/requests any time anywhere in the world, alteration of tender documents is impossible or easy to detect, neither party can deny sending or receiving documents, provides fairness to all regardless of geographic location of a supplier and it improves audit trails to a large extent.

Recommendations

The study established that E-tendering processing practice enhances supply chain performance positive. It is recommended that management should ensure that all modules from purchasing Requisition, Quotation/tenders, request for proposals, purchasing order approvals and Transmission, contract monitoring, Goods receipt note. This will reduce tender processing time, eliminate postal, printing & storage costs, wide supplier base will be achieved and audit trails will be maintained thus reduction of corruption.

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