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E-PROCUREMENT PROCESSES AND PERFORMANCE OF AGRICULTURE AND FOOD AUTHORITY IN KENYA

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ABSTRACT

E-procurement simplifies the sourcing and purchasing process in an organization. However there is still some resistance to change and therefore the importance of identifying whether e-procurement creates value to a procurement process, how and what are the benefits of changing from traditional procurement process to electronic procurement. This study focused on examining the influence of e-procurement process on performance Food and Agriculture Authority in Kenya. Specifically, the study focused on establishing the relationship between e-sourcing and performance of Food and Agriculture Authority in Kenya and determining the relationship between e-tendering and performance of Food and Agriculture Authority in Kenya. This study employed a cross sectional descriptive census research design. The unit of analysis for the study was the Agriculture and Food Authority while the unit of observation was managerial employees working in these departments. In every department, 20 management employees were selected. These included; 4 top managers, 6 middle level managers and 10 lower level managers. This implies that the total target population was 160 employees. Census method was used. This study relied on both primary and secondary data. Primary data was collected through use of semi structured questionnaires. The study also conducted pilot test to test the validity and the reliability of the data collection instrument. The data collection instrument generated both qualitative and quantitative data. The study used both descriptive and inferential statistics for data analysis with the aid of Statistical Package for Social Sciences (SPSS version 25). Descriptive statistics such as mean, standard deviation, frequency and percentages were used in this study. In relation to inferential statistics, the study used correlation analysis to establish the relationship between the independent and the dependent variables. Data was then presented in a tables, bar charts and pie charts. The study concludes that e-sourcing has a significant effect on performance of Food and Agriculture Authority in Kenya. In addition, the study concludes that e-tendering has a significant effect on performance of Food and Agriculture Authority in Kenya.

Key Words: e-procurement process, Food and Agriculture Authority, e-sourcing and e-tendering

Background of the study

Over the last few years, the internet has evolved from being a scientific network only, to a platform that is enabling a new generation of business (Miros & Cao, 2002). The internet is changing the way business is done in every industry. The World Wide Web has become a source for information, goods and services (Issa & Caglasin, 2018). E-procurement has emerged as one of the most discussed topic in material procurement. Without doubt, it will dramatically change the way purchasing is done in the near future as it has already taken center stage on how procurement processes are done (Miros &Cao, 2017).

The global perspective of e-procurement adopted from the Transparency International (2011) shows that it has helped Brazil in sharing of information between the procuring entities and supplying firms. The business processes of a company, such as distribution, research and development, operations and logistics, are heavily influenced by global competition, high-speed information availability, continuously changing business relationships, shorter innovation cycles and an increasing complexity of products. Batenburg (2013) identified differences in e-procurement adoption in various European countries. Firms from countries with a low uncertainty avoidance such as Germany and the UK are the early adopters of e-procurement, while countries that are less reluctant to change such as Spain and France have lower adoption rates.

In most African countries, the ultimate e- procurement system is still in the development stage and will evolve over time (Bardi, Coyle, and Langlay 2013). The benefits of supply chain management have not yet been realized due to general limited understanding of how supply chain management concept works within government environment. Problems such as poor information sharing between purchasers and suppliers, non-automated supplier appraisal systems, adversarial relationship and non-responsive supply chain integration exist in this electronic age.

In Kenya, e-procurement is at the early adoption stage (Oke et al, 2006). This has been attributed to the astronomical costs that are involved in the setting up of the infrastructure as well the skill gap that exists in the labor market. ICT is considered as a key pillar in the success of vision 2030 by the government of Kenya which aims at transforming the country into an industrialized nation by the year 2030. ICT board has been set up by the government to spearhead the ICT revolution in the country which is a positive signal for eprocurement (Oke et al, 2006).

According to e-government strategy paper 2004, e-procurement was one of the medium term objectives which were to be implemented by June 2007, but the process has been very slow (Maina, 2015). According to Mbogo (2011), most AFA lack the capabilities to execute e-processes as automation requires special skills and infrastructure and most often some crucial processes are not adhered to and mostly in the e-sourcing tools, tendering portals and software systems for e-ordering and web based systems. The manual processes are costly, slow, inefficient and data storage and retrieval poor. This project study seeks to determine the e-procurement practices in private businesses in Nairobi, Kenya and whether there is a relationship between e-procurement practices and performance of the businesses.

Statement of the Problem

E-procurement simplifies the sourcing and purchasing process in an organization. However there is still some resistance to change and therefore the importance of identifying whether e-procurement creates value to a procurement process, how and what are the benefits of changing from traditional procurement process to electronic procurement (Snider & Rendon, 2015). Traditional procurement systems have long suffered from inefficient processes, lack of prompt information, and excessive complexity resulting in wasted time and money. E-procurement can possibly solve these problems by streamlining processes, providing timely information, and

improving coordination and collaboration, thus leading to cost savings and reduced procurement cycle times (Issa & Caglasin, 2013). With regards to AFA, they have less competitive advantages and are generally more vulnerable due to their restrictions in sizes, resources and other conventional characteristics (O'Gorman, 2011). Past statistics indicate that three out of five small medium businesses fail within the first few months of operation (Kenya National Bureau of Statistics, 2013). Afande, O. (2017) found out that only 31% of small medium enterprises in Nairobi rely on old records in selecting their suppliers while 69% search through internet catalogue in selecting suppliers. Therefore it can said that very few AFA have implemented some form of e-procurement in their procurement activities.

Studies have been conducted in both the developed and developing countries to show the various tenets of e-procurement and how they have been utilized by AFA (Batenburg, 2013; Ashlstrom, 2010; Chang, 2011; Adebiyi, 2015, Sijaona, 2010). Many studies exist in Kenya with regards to e-procurement (Gaitho, 2016; Mbogo, 2011; Kasomi 2017). The studies established most AFA lack the capabilities to execute e-processes as automation requires special skills and infrastructure and most often some crucial processes are not adhered to and mostly in the e-sourcing tools, tendering portals and software systems for e-ordering and web based systems. These studies have focused on other concepts in e-procurement amongst small and medium enterprises in the manufacturing sector. These studies have failed to show the relationship between e-procurement and organization performance. Furthermore, it is clear that little has been done on relationship between e-procurement and performance in AFA in Nairobi County thus creating a research gap. It is on the basis of this existing gap that this study sought to examine the relationship between e-procurement process and performance of small and medium enterprises in the manufacturing sector in Kenya Nairobi County.

General Objective

The general objective of this study is to examine the influence of e-procurement process on performance Food and Agriculture Authority in Kenya

Specific Objectives

i. To establish the relationship between e-sourcing and performance of Food and Agriculture Authority in Kenya
ii. To determine the relationship between e-tendering and performance of Food and Agriculture Authority in Kenya

Theoretical Framework

Resource Based View theory

The Resource Based View theory was developed by Penrose in 1959 while working on her project, titled 'The Theory of the Growth of the Firm' (Peteraf & Barney, 2012). The RBV theory is largely based centralized on the resources of the firm. The resource-based view (RBV) emphasizes on the firm's resources as the fundamental determinants of competitive advantage and performance. It adopts two assumptions in analyzing sources of competitive advantage (Kaufmann & Carter 2018). First, this theory assumes that firms within an industry (or within a strategic group) may be heterogeneous with respect to the bundle of resources that they control. Second, it assumes that resource heterogeneity may persist over time because the resources used to implement firms' strategies are not perfectly mobile across firms (some of the resources cannot be traded in factor markets and are difficult to accumulate and imitate). Resource heterogeneity (or uniqueness) is considered a necessary condition for a resource bundle to contribute to a competitive advantage. In Chicago School tradition, the RBV is an efficiency-based explanation of performance differences (Munezero, 2019).

RBV theory identifies the internal operational processes as vital components of the organizations resources such as integrating electronic platforms in executing operations such as tender invitation. It will be convenient for the organization to adopt industry benchmark standards while seeking suppliers and this can be effectively be implemented by adopting sophisticated procurement process that is executed electronically (Munubi, Kinanga, & Ondiba, 2017). The organization will be able to evaluate the influence of the platform of the performance of the procurement function for the individual organization. RBV concept ensures that the organization manages its procurement function with high sensitivity once they understand that their competitive advantage depends on the efficiency of the process.

Transactional Cost Theory

The Transaction Cost Theory (TCT) was propounded by Williamson (1989). The theory argues that organization come across the opportunism challenge when in a situation of bargaining with few other organizations. This theory is anchored on the premise that connection between environmental and human factors is the cause of increasing costs of transaction in the system of the economy (Hart, 2016). Factors that contribute to costs of transaction interdependence may lead to their rise or reduction. Thus, the effort of lowering the costs of transaction ought not to target reducing a single factor effect but the interdependence effects between factors (Ghoshal, 2018).

Therefore, in the procurement of goods and services for businesses, transactional cost can be reduced by automating procurement processes. During tender evaluation and award stages in an open tendering in businesses, financial evaluation is normally carried out to make a decision on the winning bidder. As such, the analysis of the amount quoted by various bidders in terms of cost and overheads is normally conducted in order to determine the actual price chargeable that can be negotiated. As one of the major e-procurement adoption objectives is to enhance cost reduction by eliminating transaction cost, transaction cost theory is suitable for this study.

Conceptual Framework

Mugenda and Mugenda (2018) asserted that a conceptual framework is a hypothesized model that shows relationships between the dependent variable and independent variables. The Figure 2.1 shows the relationship between the dependent and independent variables.

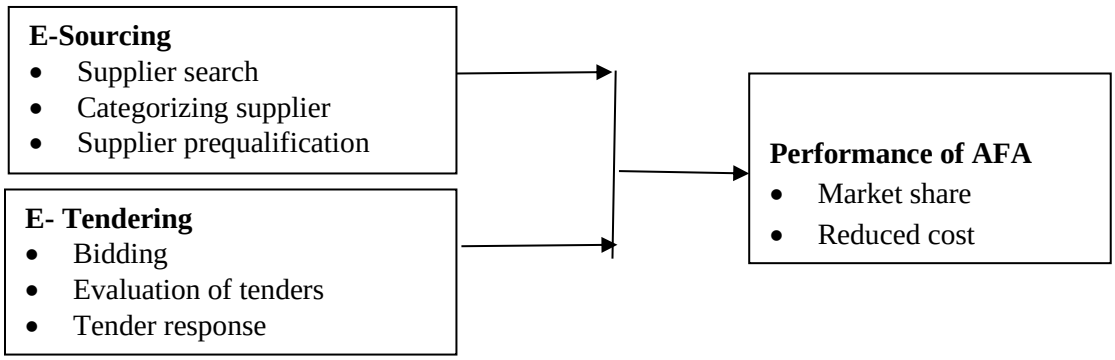

Figure 2. 1: Conceptual Framework

E-sourcing

It involves the process of obtaining bids from different suppliers via a single online portal. It refers to internet-enabled applications and decision support tools that facilitate interactions between buyers and suppliers through the use of online negotiations, online auctions, reverse auctions and similar tools. The benefits of e-sourcing include streamlining the sourcing process, reducing prices by maximizing supplier competition, and creating a repository for sourcing information (Chan and Chin, 2018). Traditional geographical limitations are no longer present in e-sourcing since sending and receiving e-mail and other information from the World Wide Web is fast and efficient. With e- sourcing, organizations are able to increase the sources of their potential suppliers at no cost as they do not only depend on those vendors and suppliers they can physically visit their premises since they interact on-line and they are able to get whatever information that they need with the pressing of a button of their computers. They can source for their inputs from any part of the world in the comfort of their offices. They interact via the internet and partner with suppliers and buyers online and this enhances their operations (Dinda, 2016).

E-tendering

It is a procedure in e-procurement applied in supplier selection in order to find a competent supplier using internet based ICT infrastructures or on the basis of electronic transaction through the internet. It is expected to reduce face to face transaction as well as collusion. E-tendering is considered a suitable mechanism to select a proper contractor fairly, efficiently and productively (Oyediran & Akintola 2016). Although e-tendering adds the values of transparency, efficiency and accountability, the implementation of e-procurement still faces constraints, such as lack of human resource / ICT expertise, limited internet connectivity and contractor unpreparedness in the face of digital change (Asnudin 2016).

Furthermore, the human and technology factors, the two most critical success factors in e-tendering are expensive to acquire. Human factor is influenced by a host of variables including human behavior and expertise, support management, business case, user uptake and training, project management and supplier adoption aspects. Technology category, which is dependent on activities and deployment technologies, is related to reliability, availability, efficiency, and interoperability aspects. Additionally, understanding of legal rules and principles becomes another important factor necessary to make security compliance for e-tendering and to minimize fraud and collusion inside and outside of the process (Eadie, Perera and Heaney 2016)

Empirical Review

E-sourcing and Performance of AFA

Kaufmann and Carter (2018) conducted a study on the role of e –sourcing and performance of many large companies the US and Europe. The study adopted descriptive survey design and both correlation and multiple regressions were employed to determine relationship between the variables. Findings established that many firms use reverse e-sourcing and that supply managers expect continued expansion in the future. In reverse e-sourcing, suppliers compete dynamically, in real time and buyers typically bid down the price of an item to be purchased. Using the internet, suppliers submit multiple electronic bids during a fixed time period, often 30 minutes or less. This study was carried out in big companies but the current study will be carried out in AFA in the manufacturing sector in a developing country.

Ochari and Kwasira (2016) study aimed at assessing the role of electronic procurement on performance of procurement function in the County Government of Nakuru. Descriptive research design was used. The study target population comprised of all the 168 staff of procurement

function. Simple random sampling technique was used to sample 118 staff. The study used questionnaires in the collection of primary data. The established that the concept of e-sourcing has been adopted in the procurement function of the County Government of Nakuru although it has not been fully implemented thus the full benefits of e-sourcing have not been realized. This study did not however establish the relationship between e-sourcing and performance of procurement practices. This current study aims at filling this gap.

E-tendering and Performance of AFA

Greenfield, Callen & Westbrook (2017) study examined the effect of introduction of electronic tendering in hospitals in Sydney, Australia. The target population was 100 staff of a referral hospital. Qualitative data was obtained through interviews, observation of participants and telephone conversation. The study established that e-tendering enhanced effective channel of communication between the hospital staff and suppliers. The study was carried out in public hospital in a developed country but the current study will be carried out in small business in the manufacturing sector in a developing country.

Olukayode, Oyediran, Adeyemi & Akintola (2016) conducted a study to assess the state of the art of e-tendering in the Nigerian construction industry. A cross- sectional survey research design was used. The target populace was109 quantity surveyors, architects, engineers and contractors in the construction industry Primary data was collected using questionnaires. Findings established that only a few industry professionals have used electronic methods to distribute contract documents, receive contract documents, receive tender notification, disseminate tender notification, compare bids, interact with other professionals and least of all making and receiving payment for construction related activities. The study was conducted in construction industry but the current study will be carried out in AFA in the manufacturing sector in Nairobi County and descriptive research design will be used.

Gathima (2018) carried out a study on the effect of e-tendering on the performance of County Government of Nairobi. The study utilized the descriptive research design and explanatory research design. The target population comprised 750 respondents drawn from the finance, payment and information technology department. Stratified random sampling technique was used to sample 75 respondents. The data was collected through the administration of the questionnaires to the selected sample. Descriptive and inferential statistics were used for analysis. Findings established that e-tendering practices had positive and significant relationship with the performance in Nairobi City County Government. The researcher aims at carrying out a similar study in in the manufacturing sector in Nairobi County.

RESEARCH METHODOLOGY

Research Design

This study employed a cross sectional descriptive census research design. The design was selected for this study because it can provide numeric description of the population and describe events as they are, at point in time (Ngechu, 2016).

Target Population

In the study, the target population was Agriculture and Food Authority (AFA). This state corporation (Agriculture and Food Authority) has 8 departments which include; Sugar Directorate; Coffee Directorate; Fibre Crops Directorate; Horticultural Crops Directorate; Food Directorate; Nuts and Oil Crops Directorate; Miraa, Pyrethrum and other Industrial Crops Directorate and Corporate Services Directorate. The unit of analysis for the study was the Agriculture and Food Authority while the unit of observation was managerial employees working in these departments.

In every department, 20 management employees were selected. These included; 4 top managers, 6 middle level managers and 10 lower level managers. This implies that the total target population was 160 employees. The use of management employees as the unit of observation is justifiable because they both possess relevant performance knowledge of the organization due to their nature of work.

Table 3. 1: Target Population

Category	Target Population
Top Managers	32
Middle level Mangers	48
Lower level Managers	80
Total	160

Sampling Frame

A sample frame is a list of all the elements in the population of interest (Kothari, 2008). The sample frame defines the target population from which the sample is obtained and which the sample data is generalized (Oso & Onen, 2012).The sample frame for this study was the entire management employees. This implies that all the 160 respondents participated in the study

Data Collection Instruments

The main data collection instrument that was used in the study is questionnaire. Orodho (2017) defines a questionnaire as an instrument used to gather primary data, which allows a measurement for or against a particular viewpoint. The advantages of a questionnaire over other instruments include: information can be collected from large samples, no opportunity for bias since it is presented in paper form and confidentiality is upheld (Kasomo, 2016).

Pilot Test

Prior to using a questionnaire to collect data it should be pilot tested. The purpose of the pilot test is to refine the questionnaire so that respondents have no problems in answering the questions and there is no problems in recording the data (Isaac & Michael, 2016). In addition, it enables one to obtain some assessment of the question's validity and the likely reliability of the data that was collected (Kasomo, 2016). In this study, the questionnaires were randomly administered to 5% of the sample size who were not included in the main study. According to Dunn (2016), 5 to 10% of the population sample is adequate for pilot study. The results of the pilot study informed changes which were made on the questionnaire so as to enhance its validity and reliability (Neuman, 2013).

Data Processing and Analysis

Descriptive statistics were utilized in this study. Descriptive statistics is the term given to the analysis of data that helps describe, show or summarize data in a meaningful way such that, for example, patterns might emerge from the data. Descriptive statistics do not make conclusions beyond the data being analyzed or reach conclusions regarding any hypotheses made. They are simply a way to describe data. Descriptive statistics entail measures of central tendencies such as frequencies, means, standard deviation, median and mode of data. Data collected was first coded as per the variables, then data entry done for every research tool filled after which descriptive statistics were carried out and presented in tabulations, charts and graphs in form of frequencies, percentages and co-efficients. A multiple regression analysis was conducted to determine the influence of the independent variables; E-Sourcing, E-Tendering, E-Auctioning and E-Ordering on performance of AFA.

DATA ANALYSIS AND FINDINGS

Descriptive statistics

E-Sourcing and Performance of Food and Agriculture Authority in Kenya

The first specific objective of the study was to establish the relationship between e-sourcing and performance of Food and Agriculture Authority in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to e-sourcing and performance of food and agriculture Authority in Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 1.

From the results, the respondents agreed that the Food and Agriculture Authority has effectively implemented e-sourcing practices to enhance procurement processes. This is supported by a mean of 3.944 (std. dv = 0.989). In addition, as shown by a mean of 3.917 (std. dv = 0.805), the respondents agreed that the e-sourcing platforms provided by the Food and Agriculture Authority have improved transparency and fairness in procurement procedures. The respondents also agreed that e-sourcing has streamlined the procurement activities of the Food and Agriculture, resulting in cost savings and efficiency gains. This is shown by a mean of 3.855 (std. dv = 0.981).

From the results, the respondents agreed with a mean of 3.849 (std. dv = 0.923) that the Food and Agriculture Authority has effectively utilized e-sourcing platforms to engage a wider pool of suppliers and promote competition. Further, as shown by a mean of 3.803 (std. dv = 0.874), the respondents agreed that e-sourcing has increased the accountability and traceability of procurement activities carried out by the Food and Agriculture Authority. The respondents also agreed that the Food and Agriculture Authority has successfully integrated e-sourcing technologies into their procurement workflow. This is shown by a mean of 3.787 (std. dv = 0.901). The respondents also agreed that e-sourcing has reduced the administrative burden associated with procurement processes for the Food and Agriculture Authority. This is shown by a mean of 3.715 (std. dv = 0.873).

Table 1: E-Sourcing and Performance of Food and Agriculture Authority in Kenya

	Mean	Std. Dev.
The Food and Agriculture Authority has effectively implemented e-sourcing practices to enhance procurement processes.	3.944	0.989
The e-sourcing platforms provided by the Food and Agriculture Authority have improved transparency and fairness in procurement procedures.	3.917	0.805
E-sourcing has streamlined the procurement activities of the Food and Agriculture, resulting in cost savings and efficiency gains.	3.855	0.981
The Food and Agriculture Authority has effectively utilized e-sourcing platforms to engage a wider pool of suppliers and promote competition.	3.849	0.923
E-sourcing has increased the accountability and traceability of procurement activities carried out by the Food and Agriculture Authority.	3.803	0.874
The Food and Agriculture Authority has successfully integrated e-sourcing technologies into their procurement workflow.	3.787	0.901
E-sourcing has reduced the administrative burden associated with procurement processes for the Food and Agriculture Authority.	3.715	0.873
Aggregate	**3.865**	**0.922**

E-Tendering and Performance of Food and Agriculture Authority in Kenya

The second specific objective of the study was to determine the relationship between e-tendering and performance of Food and Agriculture Authority in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to e-tendering and performance of Food and Agriculture Authority in Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 2.

From the results, the respondents agreed that their organization has effectively implemented e-tendering practices to enhance transparency and fairness in procurement processes. This is supported by a mean of 3.967 (std. dv = 0.897). In addition, as shown by a mean of 3.920 (std. dv = 0.815), the respondents agreed that e-tendering has streamlined the tendering activities of the Food and Agriculture Authority, resulting in improved efficiency and reduced processing time. Further, the respondents agreed that the e-tendering platforms provided by the Food and Agriculture Authority have facilitated broader participation and increased competition among potential suppliers. This is shown by a mean of 3.888 (std. dv = 0.901). The respondents also agreed that e-tendering has improved the accessibility of tender information, making it easier for suppliers to participate in the procurement process. This is shown by a mean of 3.835 (std. dv = 0.793).

From the results, the respondents agreed with a mean of 3.813 (std. dv = 0.884) that their organization has effectively utilized e-tendering platforms to ensure equal opportunities for both large and small-scale suppliers. Further, as shown by a mean of 3.798 (std. dv = 0.786), the respondents agreed that e-tendering has reduced paperwork and administrative burdens associated with traditional tendering processes for the Food and Agriculture Authority. The respondents also agreed that their organization has established clear guidelines and procedures for e-tendering, ensuring consistency and standardization in the procurement process. This is shown by a mean of 3.788 (std. dv = 0.892).

Table 2: E-Tendering and Performance of Food and Agriculture Authority in Kenya

	Mean	Std. Dev
Our organization has effectively implemented e-tendering practices to enhance transparency and fairness in procurement processes.	3.967	0.897
E-tendering has streamlined the tendering activities of the Food and Agriculture Authority, resulting in improved efficiency and reduced processing time.	3.920	0.815
The e-tendering platforms provided by the Food and Agriculture Authority have facilitated broader participation and increased competition among potential suppliers.	3.888	0.901
E-tendering has improved the accessibility of tender information, making it easier for suppliers to participate in the procurement process.	3.835	0.793
Our organization has effectively utilized e-tendering platforms to ensure equal opportunities for both large and small-scale suppliers.	3.813	0.884
E-tendering has reduced paperwork and administrative burdens associated with traditional tendering processes for the Food and Agriculture Authority	3.798	0.786
Our organization has established clear guidelines and procedures for e-tendering, ensuring consistency and standardization in the procurement process.	3.788	0.892
Aggregate	**3.828**	**0.897**

Inferential Statistics

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (e-sourcing and e-tendering,) and the dependent variable (performance of Food and Agriculture Authority in Kenya). Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients.

Table 3: Correlation Coefficients

		Organization Performance	E-Sourcing	E-Tendering
Organization Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	151		
E-Sourcing	Pearson Correlation	.872**	1	
	Sig. (2-tailed)	.000		
	N	151	151	
E-Tendering	Pearson Correlation	.805**	.284	1
	Sig. (2-tailed)	.003	.063	
	N	151	151	151

From the results, there was a very strong relationship between e-sourcing and performance of Food and Agriculture Authority in Kenya (r = 0.872, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the findings of Kaufmann and Carter (2018) who indicated that there is a very strong relationship between e-sourcing and organization performance.

Moreover, the results revealed that there is a very strong relationship between e-tendering and performance of Food and Agriculture Authority in Kenya (r = 0.805, p value =0.003). The relationship was significant since the p value 0.003 was less than 0.05 (significant level). The findings conform to the findings of Greenfield, Callen and Westbrook (2017) that there is a very strong relationship between e-tendering and organization performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (e-sourcing and e-tendering) and the dependent variable (performance of Food and Agriculture Authority in Kenya)

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911	.830	.831	.10125

a. Predictors: (Constant), e-sourcing, e-tendering,

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.830. This implied that 83% of the variation in the dependent variable (performance of Food and Agriculture Authority in Kenya) could be explained by independent variables (e-sourcing and e-tendering).

Table 5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141.081	2	35.270	70.54	.000[b]
	Residual	7.254	148	.050		
	Total	148.335	150			

a. Dependent Variable: performance of Food and Agriculture Authority in Kenya
b. Predictors: (Constant), e-sourcing and e-tendering,

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 70.54 while the F critical was 2.434. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of e-sourcing, e-tendering, e-payment and e-ordering on performance of Food and Agriculture Authority in Kenya.

Table 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.241	0.062		3.887	0.000
	e-sourcing	0.330	0.083	0.331	3.976	0.003
	e-tendering	0.348	0.090	0.349	3.867	0.001

a Dependent Variable: performance of Food and Agriculture Authority

The regression model was as follows:

$Y = 0.241 + 0.330X_1 + 0.348X_2 + \varepsilon$

According to the results, e-sourcing has a significant effect on performance of Food and Agriculture Authority in Kenya, β_1=0.330, p value= 0.003). The relationship was considered significant since the p value 0.003 was less than the significant level of 0.05. The findings are in line with the findings of Kaufmann and Carter (2018) who indicated that there is a very strong relationship between e-sourcing and organization performance.

The results also revealed that e-tendering has significant effect on performance of Food and Agriculture Authority in Kenya, β1=0.348, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings conform to the findings of Greenfield, Callen and Westbrook (2017) that there is a very strong relationship between e-tendering and organization performance.

Conclusions

The study concludes that e-sourcing has a significant effect on performance of Food and Agriculture Authority in Kenya. The study findings revealed that supplier search, categorizing supplier and supplier prequalification influence performance of Food and Agriculture Authority in Kenya

In addition, the study concludes that e-tendering has a significant effect on performance of Food and Agriculture Authority in Kenya. The study findings revealed that bidding, evaluation of tenders and tender response influence performance of Food and Agriculture Authority in Kenya.

Recommendations

This study recommends that the management should establish a system for continuous monitoring and evaluation of e-sourcing processes. The management should regularly assess the effectiveness and efficiency of supplier search, categorization, and prequalification to identify areas for improvement

In addition, the management should provide comprehensive training to staff involved in the e-tendering process, including procurement officers, evaluators, and suppliers. The management should ensure they are proficient in using the e-tendering system and understand its importance for organizational performance.

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