Int Journal of Social Sciences Management and Entrepreneurship 8(2): 402-413 2024

ISSN 2411-7323

www.sagepublishers.com

E-PROCUREMENT PRACTICES AND OPERATIONAL PERFORMANCE OF THE KENYA DEFENCE FORCES

[1] Kamene Stephen Mwendwa, [2] Dr. Wachiuri Elizabeth

[1]Masters Student, Jomo Kenyatta University of Agriculture and Technology
[2]Lecturer, Jomo Kenyatta University of Agriculture and Technology

ABSTRACT

Access to good and quality weapons is desirable in the military due to the fact that it allows the military personnel to focus on core business which is protection of the territorial integrity of the country. This study sought to establish the influence of e-procurement practices on operational performance of the Kenya Defence Forces (KDF). Specifically, the study sought to determine the influence of e-supplier selection on operational performance of KDF and to establish the influence of e-sourcing on operational performance of the Kenya defence forces. This study used a descriptive research design. The study was conducted in the headquarters of Kenya defense forces at Moi Air Base in Eastleigh, Nairobi. The study targeted staff in the management level. There is a total of 103 management employees comprising of 32 top level officers, 45 middle level officers and 26 senior officers. This study adopted census by focusing on all respondents. 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. This was used 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-supplier selection has a positive and significant effect on operational performance of Kenya defence forces. The study also concludes that e-sourcing has a positive and significant effect on operational performance of Kenya defence forces. From the results, this study recommends that the ministry of defence should further refine and enhance e-supplier selection methodologies to ensure they align closely with the operational needs and strategic objectives of the Kenya Defence Forces (KDF). In addition, the study recommends that the ministry of defence should foster active engagement and participation from potential bidders by providing clear and comprehensive tender specifications, guidelines, and communication channels.

Key Words; E-Procurement Practices, Operational Performance, E-Supplier Selection and E-Sourcing

Background of the Study

Armed Forces across the globe evolved rapidly over the years in term of size, strength, equipment, weapons systems, infrastructure and others due to current demands and challenges that the their nations has to face. Besides their specific roles and tasks, the armed forces are also required to perform additional innovative tasks in support of national objectives (Odhiambo, 2015). According to Howard, Donofrio and Boles (2018) armed forces play a critical role in maintaining national security, protecting borders, and ensuring stability. Different countries have their own armed forces, which can vary in size, capabilities, and organizational structure. These armed forces are responsible for defense against external threats, participation in peacekeeping missions, and supporting domestic security when necessary. Additionally, armed forces often contribute to humanitarian assistance and disaster relief efforts. Odhiambo, (2015) argues that the KDF consists of the Kenya Army, Kenya Air Force, and Kenya Navy. Their primary roles include protecting Kenya's sovereignty, maintaining territorial integrity, and supporting the government in maintaining law and order. The KDF has been involved in peacekeeping missions under the United Nations, such as in Somalia as part of AMISOM (African Union Mission in Somalia). In Kenya, the armed forces also have a role in supporting civil authorities during times of crisis, such as natural disasters or civil unrest. They provide assistance in disaster response, search and rescue operations, and maintaining public order when required.

E-procurement, also known as electronic procurement or online procurement, is the use of electronic systems and technology to streamline and automate the procurement processes within organizations. It involves the electronic exchange of information, communication, and transactions related to the purchasing of goods, services, and works (Akintoye, McIntosh, & Fitzgerald, 2018). E-procurement systems typically encompass a range of functionalities and features that support various stages of the procurement process, including requisitioning, sourcing, bidding, vendor selection, purchase order creation, invoicing, and contract management (Bardhan, Krishnan, & Lin, 2017). E-procurement entails; e-supplier selection, e-tendering, e-payment and e-sourcing. E- Procurement is gaining popularity in business practice and a variety of benefits have encouraged its adoption, such as reducing costs and increasing efficiency (Adzroe, & Ingirige, 2019). E-procurement systems also contribute to minimization of transaction costs through automation of processes, exchanging of information technology with human labor. Also, e-Procurement enhances breakdown of the functional silos towards the horizontal processes which lead to an increase in integration (Moreton & Proverbs, 2019).

Interest in e-procurement practices on performance has also been observed among European countries. Several scholars have pointed towards information technology as a crucial element in successful procurement and by extension, in organizational performance (Setia & Patel, 2017; Jin et al., 2018). Han, Wang and Naim (2017) in acknowledging the role of information technology posit that flexibility of information technology though equally important, is often ignored. Consequently, they conducted a study in Cardiff focusing on how IT flexibility could be conceptualized for purposes of supply chain management. Information management has also been identified as potential supply chain determinant of organizational performance.

In Sub-Saharan Africa, several studies have illuminated several key e-sourcing, e-supplier selection, e-payment and others as being responsible for driving operational performance in organizations (REO, 2017). The realization of the central role that IT plays in procurement for instance, has seen initiation of several large–scale infrastructure projects in the East African region. Ibrahim and Hamid (2016) conducted a study among manufacturing firms in Sudan ostensibly to examine how e-procurement practices affected the performance of organizations. The authors sought to build on the understanding that effectiveness in supply chain performance has potential to impact suppliers and manufacturers both directly and indirectly (Ling & Tan, 2016). The study revealed that e-procurement practices significantly influence organization performance.

The Kenya Army, Kenya Air force and the Kenya Navy comprise the Kenya Defence Forces. The current Kenya Defence Forces was established, and its composition laid out, in Article 241 of the 2010 Constitution of Kenya. The President is the commander-in-chief of all the armed forces. The military enjoys, in general, a good reputation. It is regularly deployed in peace-keeping missions around the world and generally commended for its professionalism (www.mod.go.ke/kenyadefenceforces)

Statement of the Problem

The mission of the Kenya Defence Forces is to defend and protect the sovereignty and territorial integrity of the Republic, assist and cooperate with other authorities in situations of emergency or disaster and restore peace in any part of Kenya affected by unrest or instability as assigned. The Kenya Defence Forces comprises of the Kenya Army, Kenya Air Force and Kenya Navy. The current Kenya Defence Forces were established, and its composition laid out, in Article 241 of the 2010 Constitution of Kenya; the KDF is governed by the Kenya Defence Forces Act of 2012.The President of Kenya is the commander-in-chief of all the armed forces. According to Owuor (2018) access to good and quality weapons is desirable in the military due to the fact that it allows the military personnel to focus on core business: Protection of the territorial integrity of the country (Yim-Yu et al. 2000)). However, at the Kenya Defence Forces, not all procurement operations are automated (Defence Staff College Logistics Basic Book 2018). This has resulted in many inefficiencies, high costs and distraction from the core business of protecting the integrity of the borders of Kenya and maintaining international peace (Odhiambo, 2015). Research has shown that e-procurement practices influences organization performance.

Various studies have been conducted on e-procurement practices and organization performance. For instance; Kitunzi (2016) conducted a study on influence of e-procurement on organizational performance: the case of Kenya association of manufacturers firms in Nairobi County, Kenya. Barasa, Namusonge and Okwaro (2017) conducted a study on the effects of e-procurement on the organizational performance of county Governments in Kenya: A Case study of Bungoma County Government. Kipkemoi (2017) conducted a study on the effects of procurement practices on organizational performance within the public sector: a case of East African Portland Cement Company limited. Maina (2017) conducted a study on the effect of e-procurement on performance of the public sector in Kenya. Nevertheless, none of these studies focused on operational performance of the Kenya defence forces. To fill the highlighted gaps, this study sought to establish the influence of e-procurement practices on operational performance of the Kenya defence forces.

General Objective

The main focus of this study is to establish the influence of e-procurement practices on operational performance of the Kenya defence forces

Specific Objectives

i. To determine the influence of e-supplier selection on operational performance of Kenya defence forces
ii. To establish the influence of e-sourcing on operational performance of the Kenya defence forces

Theoretical Framework

Transaction cost Theory

Transaction cost theory was developed by Williamson (1979). The theory posits that the optimum organizational structure is one that achieves economic efficiency by minimizing the costs of exchange. The theory suggests that each type of transaction produces coordination costs of monitoring, controlling, and managing transactions. Williamson has defined transaction costs broadly as the costs of running the economic system of firms. He has argued

that such costs are to be distinguished from production costs and that a decision-maker can make a choice to use a firm structure or source from the market by comparing transaction costs with internal production costs. Thus, cost is the primary determinant of such a decision (Pamela, 2018).

This theory holds that the choice between market transactions and internal organization (hierarchical governance) is influenced by transaction costs, which are the costs associated with conducting economic exchanges. These costs include; Search and Information Costs which refer to the time, effort, and resources expended in searching for and gathering information about potential suppliers, products, or services in the marketplace. Bargaining and Negotiation Costs arise during the process of reaching agreements between parties, such as negotiating contract terms, resolving disputes, or aligning incentives. Bargaining and negotiation costs can include the costs of information exchange, communication, and legal or consulting fees (Wangui, 2018).

In the context of e-supplier selection, TCE theory argues that organizations seek to minimize transaction costs when selecting suppliers. Transaction costs include both explicit costs (e.g., price, fees) and implicit costs (e.g., search costs, negotiation costs, relationship management costs) (Naibor & Moronge, 2018). E-supplier selection can help reduce these transaction costs through several mechanisms. By leveraging e-supplier selection, organizations can minimize transaction costs associated with sourcing and supplier selection. The theory of Transaction Cost Economics supports the idea that e-supplier selection platforms enable organizations to achieve efficient supplier selection, enhance market transparency, and optimize supplier relationships by reducing various transaction costs (Mwikali & Kavale (2018). This theory will be used in this study to assess the influence of e-supplier selection on operational performance of Kenya defense forces

Stakeholders Theory

In 1984, R. Edward Freeman originally detailed the Stakeholder Theory of organizational management and business ethics that addresses morals and values in managing an organization. Stakeholder theory originated by Freeman (2014) is defined as any group or individual who can affect or is affected by the achievement of the organization‘s objectives. Stakeholder theorists suggest that managers in organizations have a network of relationships to serve that include the suppliers, employees’ and business partners. According to Freeman and Phillips (2018) each stake holder is given an important say in making important decisions. The stakeholder theory argues about the importance of paying special attention to each of the each stake holder who may directly or indirectly affect the operations of the organization.

Zineldin, (2017) states that organizations have substantial partners such as suppliers, customers and internal clients; who endeavor to accomplish various incompatible objectives. Co and Barro (2019) noted that actors usually embrace cooperative strategies under trustworthy circumstances however; they have authority to adopt hostile approaches due to valid and imperative stakes which require organizations attention. The role of the firm is to manage all these groups, balancing their interests, while ensuring stakeholder welfares can be maximized over time through supply chain collaborations. The theory asserts that managing inter-organizational interactions is an imperative asset which facilitates access to partner’s resources, earning the required provisions, addressing client challenges and creating value (Soita, 2015). However, different practices and decisions require different participants. Stakeholders are likely to cooperate with other players who demonstrate similar interest thus fostering collaboration. This theory assists the researcher to demystify the role of collaboration with various stakeholders as a factor that influences performance of manufacturing firms in Kenya. It will guide the study in explaining the influence of e-sourcing on operational performance of the Kenya defense forces.

Conceptual Framework

A conceptual framework is a research tool that is used to communicate as well as developing a clear understanding of the topic under study (Maaka, 2016). It shows the expected relationship between the dependent and the independent variables. In this study, the independent variables are e-supplier selection, and e-sourcing while the dependent variable is operational performance of the Kenya defense forces

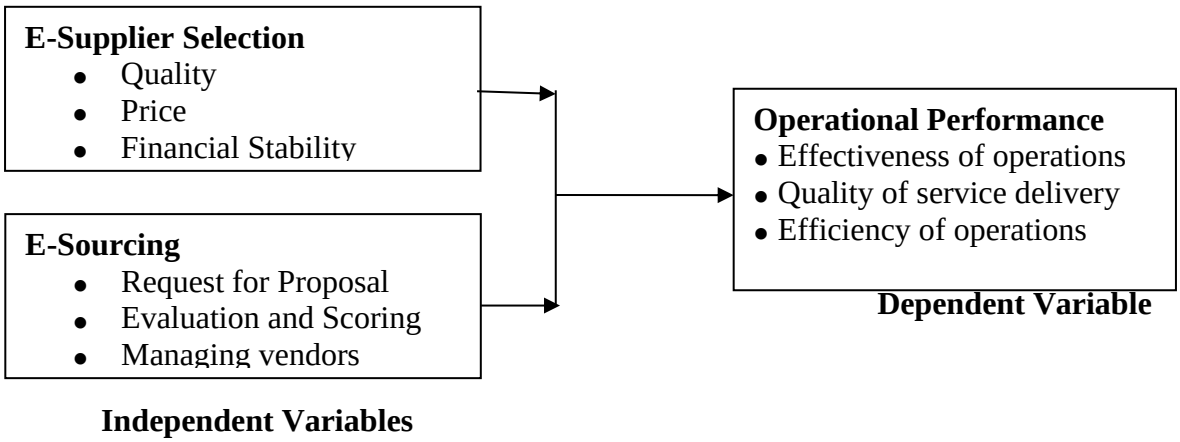

Figure 2. 1: Conceptual Framework

E-Supplier Selection

E-supplier selection, also known as electronic supplier selection, refers to the process of evaluating and choosing suppliers using electronic means and technology (Pamela, 2018). It involves utilizing online platforms, digital tools, and data analysis to identify and assess potential suppliers based on various criteria and factors. E-supplier selection often begins with building and maintaining a comprehensive supplier database. This database includes relevant information about suppliers such as their capabilities, certifications, past performance, financial stability, and compliance with regulations. Suppliers can be prequalified based on specific criteria to ensure they meet the minimum requirements and qualifications set by the organization (Wangui, 2018).

E-supplier selection leverages online resources, search engines, supplier directories, and industry-specific platforms to research and identify potential suppliers. These digital tools enable organizations to explore a wider range of suppliers, access their websites, review product/service offerings, compare prices, and gather relevant information. Social media platforms and online communities may also provide insights into supplier reputation and customer feedback. E-supplier selection incorporates scoring mechanisms and evaluation criteria to objectively assess supplier responses. This may involve assigning weights to different criteria such as price, quality, delivery time, customer support, sustainability, and compliance. Automated scoring systems within e-procurement platforms can calculate overall scores based on predefined weightings, facilitating the comparison and ranking of suppliers (Mwikali & Kavale, 2018).

E-Sourcing

E-sourcing, also known as electronic sourcing or online sourcing, refers to the use of digital platforms and tools to manage and streamline the sourcing and procurement processes within organizations (Maghanga, & Kalio, 2017). It encompasses activities such as identifying suppliers, requesting and receiving quotes, negotiating terms, and finalizing contracts, all conducted through electronic means. E-sourcing platforms provide access to a wider pool of potential suppliers. Organizations can leverage online directories, databases, and search functionalities to identify and evaluate suppliers based on various criteria such as capabilities,

certifications, pricing, and past performance. This expands the supplier reach and promotes competition, leading to better sourcing decisions (Kaufmann & Carter, 2018).

E-sourcing platforms facilitate the creation and management of RFPs and quotes electronically. Organizations can define their requirements, specifications, and evaluation criteria within the platform, and suppliers can submit their proposals and quotes online. This streamlines the entire process, from issuing RFPs to receiving and analyzing supplier responses. E-sourcing platforms offer communication and collaboration tools that enable effective interaction between buyers and suppliers. These tools facilitate real-time messaging, document sharing, and negotiation discussions, eliminating the need for physical meetings and enabling efficient communication across different time zones and geographical locations (Munezero, 2019).

Empirical Review

E-Supplier Selection and Operational Performance

Pamela (2018) carried a study on the determinants of e-supplier selection and evaluation in Pakistan Telecom industry. The study adopted explanatory and non-experimental research design to fulfill the research objectives. The study applied panel data model (fixed effects) based on the outcome of Hausman specification tests. Data was analyzed using SPSS. The study findings revealed that supplier financial capacity expertise is one of the key factors which determine the eventual performance of both the supplier and procurement performance. The study findings also revealed a high correlation between the financial capacity of supplier and ability of supplier to deliver enhances procurement performance.

Wangui (2018) carried a study to establish the e-strategic supplier related factors affecting the performance of the procurement function in the service industry. The study attempted to establish the effect of financial stability, past performance and reliability of suppliers on the performance of the procurement function. The study used a case research design. Data was collected using a questionnaire with both open and close ended questions. Statistical package for Social Sciences (SPSS) was used to analyze collected data. The study findings revealed that financial stability of suppliers; past performance and reliability of suppliers have a significant effect on performance of procurement function.

Mwikali and Kavale (2018) conducted study on technical capability, quality assessment, service levels and risk factors involved on evaluation of suppliers. A cross sectional survey design was used in the study. Primary data was collected using interview schedules and secondary data was generated from records, books, journals, published and unpublished research materials. Data was analyzed using SPSS .The study findings indicated that supplier selection should be done by experts who are knowledgeable and have expertise to conduct the exercise professionally since supplier selection is a process vulnerable to personal and political interference especially in the public sector

E-Sourcing and Operational Performance

Maghanga, and Kalio, (2017) researched on the impact of e-sourcing on competitive performance of manufacturing firms. This study attempted to examine the impact of e-sourcing on competitive performance in the manufacturing sector. Based on the literature review, the study measured SRM through five main practices: supplier quality improvement, trust-based relationship with suppliers, supplier lead time reduction, supplier collaboration in new product development, and supplier partnership/development. Competitive performance was measured through cost, quality, flexibility, delivery, and on time product launch.

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.

Munezero (2019) conducted a study on e- sourcing and performance of public corporations in Rwanda Revenue Authority. The research adopted a descriptive research design where the population of interest were employees of Rwanda revenue Authority. Questionnaires were used for data collection. It was established that e-sourcing can reduce purchase prices e-sourcing can be an effective tool if risks are carefully assessed. In addition, e-sourcing enables suppliers from anywhere in the world to compete for a buyer's business and hence enhances performance of organizations.

Munubi, Kinanga, & Ondiba (2017) conducted a study on effect of e-procurement on organizational performance: a case study of major supermarkets in Nairobi County. A descriptive survey design was used. The target population of the study was 619 employees of the four major supermarkets in Nairobi County. Simple random sampling was used to sample 124 employees. Questionnaires were used for data collection. The findings showed that e-sourcing saves time, enables the supermarkets to get information about the goods suppliers, facilitates accessing pricelists and catalogues from suppliers, it enables the supermarkets to interact with their customers and suppliers online and enables the supermarkets to find out what their customers want. The enhanced information flow between the buyers and the suppliers contributes to reduced sourcing costs.

RESEARCH METHODOLOGY

Research Design

This study used a descriptive research design. Mugenda and Mugenda (2018) explained the descriptive design is a process of collecting data in order to test a hypothesis or to answer the questions of the current status of the subject under study. Its advantage is that, it is used extensively to describe behavior, values, attitude and character. The description research design aspect of it attempted to provide more details and insights from the respondents on how the dependent variables impact on the independent variable. This descriptive research design enables the researcher to analyze the findings and draw informed conclusions.

Target Population

Target population is the entire set of individuals (or objects) having the same characteristics as pointed out in the sampling criteria used for the study (Bryman, 2013). The target population makes a part of the universal population (Creswell, 2014). The unit of analysis is what is being targeted in the research. This study was conducted in the headquarters of Kenya defense forces at Moi Air Base in Eastleigh, Nairobi. The study targeted staff in the management level. There is a total of 103 management employees comprising of 32 top level officers, 45 middle level officers and 26 senior officers.

Sample and Sampling Techniques

This study adopted a census technique. Census sampling technique involves selection of all the samples that meet some predetermined criterion considered importance to the study. This sampling design was used because as per Patton (2010) who uphold the argument that one may learn a great deal when focusing on a reasonably smaller population that is considered representative hence can be generalized. This study adopted census by focusing on all respondents.

Data Collection Instruments

Primary data was used in this study. The study's primary data was obtained using semi-structured questionnaires. The structured questions are useful as they enabled easy analysis of

data and reduced the time and resources needed for data collection. The unstructured questionnaires helped the researcher get in-depth responses from the respondents as they give a chance to them provide views and suggestions on the various issues. Kultar (2017) points out that a questionnaire is a cheap tool for data collection is very effective in collecting information from a large population. Further the data would not be biased as the questionnaire guarantees anonymity.

The questionnaire had three sections, with the first part requesting the respondent's socio-demographic data. Part two composed of five sections and had data on the independent variables and dependent variable.

Pilot Test Study

A pilot study, or, pilot test or pre-test is defined as a small-scale preliminary research that is conducted so as to evaluate time, cost and feasibility to improve on the design of a particular study prior to conducting the actual one or full-scale research project (Kultar, 2017). The researcher carried out a pilot study to ensure the data collection tool is reliable and valid. The pilot test helped correct some of the challenges encountered before undertaking the final study. The pretesting sample was made of 10 respondents, representing 10% of the sample size. The results from the pilot test were not used in the main study. In addition, the respondents used in the pilot test were excluded from the final study.

Data Analysis and Presentation

Quantitative and qualitative data was generated from the closed-ended and open-ended questions, respectively. Qualitative data was analysed on thematic basis and the findings provided in a narrative form. Before the data could be analysed, the researcher ensured the data was checked for completeness, followed by data editing, data coding, data entry, and data cleaning. Inferential and descriptive statistics was employed for analysis of quantitative data with the assistance of Statistical Package for Social Sciences (SPSS version 25). To summarize the respondent's responses in relation to their views on the various aspects of the variables, and the respondents' demographic information analysis was undertaken using descriptive statistics (Bhattacherjee, 2016).

Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Descriptive statistics therefore enables researchers to present the data in a more meaningful way, which allows simpler and easier interpretation (Singpurwalla, 2017). Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis. Inferential statistic is used to make judgments about the probability that an observation is dependable or one that happened by chance in the study. The relationship between the study variables was tested using multivariate regression models.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics Analysis

Descriptive statistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. Descriptive statistics are broken down into measures of central tendency (mean), measures of dispersion (standard deviation), frequencies and percentage (Baggio & Klobas., 2017). This study used descriptive statistics with the help of Statistical Package for Social Sciences to analyze the study variables.

E-Supplier Selection and Operational Performance

The first specific objective of the study was to determine the influence of e-supplier selection on operational performance of Kenya defence forces. The respondents were requested to indicate their level of agreement on statements relating to e-supplier selection and operational

performance of Kenya defence forces. 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 4.1.

From the results, the respondents agreed that E-supplier platforms boost Kenya Defence Forces' supplier selection efficiency. This is supported by a mean of 3.943 (std. dv = 0.981). In addition, as shown by a mean of 3.926 (std. dv = 0.850), the respondents agreed that E-selection widens KDF's supplier pool, fostering competition. Further, the respondents agreed that E-supplier selection enhances KDF's operational performance. This is shown by a mean of 3.911 (std. dv = 0.914).

The respondents also agreed that E-selection improves KDF's supplier relationship management. This is shown by a mean of 3.896 (std. dv = 0.947). With a mean of 3.889 (std. dv = 0.856), the respondents agreed that E-supplier adoption saves costs in KDF procurement. The respondents agreed that E-selection strengthens KDF's operational readiness. This is supported by a mean of 3.876 (std. dv = 0.694). In addition, as shown by a mean of 3.764 (std. dv = 0.892), the respondents agreed that E-platforms streamline KDF procurement for efficiency

Table 4. 1: E-Supplier Selection and Operational Performance

	Mean	Std. Deviation
E-supplier platforms boost Kenya Defence Forces' supplier selection efficiency.	3.943	0.981
E-selection widens KDF's supplier pool, fostering competition.	3.926	0.850
E-supplier selection enhances KDF's operational performance.	3.911	0.914
E-selection improves KDF's supplier relationship management.	3.896	0.947
E-supplier adoption saves costs in KDF procurement.	3.889	0.856
E-selection strengthens KDF's operational readiness.	3.876	0.694
E-platforms streamline KDF procurement for efficiency.	3.764	0.892
Aggregate	**3.898**	**0.873**

E-Sourcing and Operational Performance

The fourth specific objective of the study was to establish the influence of e-sourcing on operational performance of the Kenya defence forces. The respondents were requested to indicate their level of agreement on various statements relating to e-sourcing and operational performance of the Kenya defence forces. 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 4.2.

From the results, the respondents agreed that E-sourcing enhances procurement efficiency in KDF, streamlining processes. This is supported by a mean of 3.968 (std. dv = 0.905). In addition, as shown by a mean of 3.859 (std. dv = 0.885), the respondents agreed that E-sourcing broadens KDF's supplier network, fostering competition. Further, the respondents agreed that e-sourcing ensures transparency and fairness in KDF procurement. This is shown by a mean of 3.840 (std. dv = 0.605).

With a mean of 3.835 (std. dv = 0.981), the respondents agreed that e-sourcing drives cost savings and financial efficiency in KDF procurement. From the results, the respondents agreed that e-sourcing fosters improved KDF-supplier communication and collaboration. This is supported by a mean of 3.798 (std. dv = 0.982). In addition, as shown by a mean of 3.788 (std. dv = 0.813), the respondents agreed that e-sourcing reduces time and effort in tender preparation for KDF, enhancing efficiency

Table 4. 2: E-Sourcing and Operational Performance

	Mean	Std. Deviation
E-sourcing enhances procurement efficiency in KDF, streamlining processes.	3.968	0.905
E-sourcing broadens KDF's supplier network, fostering competition.	3.859	0.885
E-sourcing ensures transparency and fairness in KDF procurement.	3.840	0.605
E-sourcing drives cost savings and financial efficiency in KDF procurement.	3.835	0.981
E-sourcing fosters improved KDF-supplier communication and collaboration.	3.811	0.783
E-sourcing improves accuracy in supplier evaluations for KDF.	3.798	0.982
E-sourcing reduces time and effort in tender preparation for KDF, enhancing efficiency.	3.788	0.813
Aggregate	**3.819**	**0.867**

Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (operational performance of the Kenya defence forces) and independent variables (e-supplier selection and e-sourcing).

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (e-supplier selection and e-sourcing) and the dependent variable (operational performance of the Kenya defence forces) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 4. 3: Correlation Coefficients

		Operational Performance	E-Supplier Selection	E-Sourcing
Operational Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	78		
E-Supplier Selection	Pearson Correlation	.822**	1	
	Sig. (2-tailed)	.002		
	N	78	78	
E-Sourcing	Pearson Correlation	.846**	.185	1
	Sig. (2-tailed)	.000	.078	
	N	78	78	78

From the results, there was a very strong relationship between e-supplier selection and operational performance of Kenya defence forces (r = 0.822, p value =0.002). The relationship was significant since the p value 0.002 was less than 0.05 (significant level). The findings are in line with the findings of Naibor and Moronge (2018) who indicated that there is a very strong relationship between e-supplier selection and operational performance.

The results also revealed that there was a very strong relationship between e-sourcing and operational performance of the Kenya defence forces (r = 0.846, 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 results of Kaufmann and Carter (2018) who revealed that there is a very strong relationship between e-sourcing and operational performance

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (e-supplier selection and e-sourcing) and the dependent variable (operational performance of the Kenya defence forces)

Table 4. 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.821	.674	.675	.582

a. Predictors: (Constant), e-supplier selection, e-tendering, e-payment and e-sourcing

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 0.674. This implied that 67.4% of the variation in the dependent variable (operational performance of the Kenya defence forces) could be explained by independent variables (-supplier selection and e-sourcing).

Table 4. 4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	6.01	68.61	.000[b]
	Residual	6.568	75	.0876		
	Total	18.595	77			

a. Dependent Variable: Operational performance of the Kenya defence forces

b. Predictors: (Constant), e-supplier selection and e-sourcing

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 68.61 while the F critical was 2.497. 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-supplier selection and e-sourcing on operational performance of the Kenya defence forces.

Table 4. 1: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.313	0.083		3.771	0.003
	e-supplier selection	0.387	0.091	0.388	3.593	0.003
	e-sourcing	0.392	0.102	0.393	3.843	0.001

a Dependent Variable: operational performance of the Kenya defence forces

The regression model was as follows:

$Y = 0.313 + 0.387X_1 + 0.392X_2 + \varepsilon$

According to the results, e-supplier selection has a significant effect on operational performance of the Kenya defence forces β_1=0.387, 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 Naibor and Moronge (2018) who indicated that there is a very strong relationship between e-supplier selection and operational performance.

In addition, the results revealed that e-sourcing has significant effect on operational performance of the Kenya defence forces β1=0.392, 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 are in line with the results of Kaufmann and Carter (2018) who revealed that there is a very strong relationship between e-sourcing and operational performance.

Conclusions

The study concludes that e-supplier selection has a positive and significant effect on operational performance of Kenya defence forces. Findings revealed that quality, price and financial Stability influences operational performance of Kenya defence forces

The study also concludes that e-sourcing has a positive and significant effect on operational performance of Kenya defence forces. Findings revealed that request for Proposal, evaluation and Scoring and managing vendors influences operational performance of Kenya defence forces.

Recommendations

This study recommends that the ministry of defence should further refine and enhance e-supplier selection methodologies to ensure they align closely with the operational needs and strategic objectives of the Kenya Defence Forces (KDF). This may involve leveraging advanced analytics and machine learning algorithms to optimize supplier evaluation and selection criteria.

The ministry should also standardize e-sourcing procedures, including the request for proposal (RFP), evaluation and scoring, and vendor management, to ensure consistency and efficiency across procurement activities within the Kenya Defence Forces (KDF). Develop standardized templates, guidelines, and evaluation criteria to streamline the sourcing process and facilitate objective decision-making.

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