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Electronic Sourcing as an E-Procurement Practice and Its Role on Organizational Performance: A Study in State-Owned Corporations in Kenya

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Abstract

State-owned corporations in Kenya are tasked with executing public functions on behalf of the government and supporting the private sector in delivering core commercial services. Procurement processes within these corporations are critical, given that they manage a significant portion of government spending. However, these corporations have been plagued by increased misappropriations due to inefficient procurement practices. One notable weakness is the ineffective sourcing of key suppliers, which has exacerbated these procurement issues. The empirical literature suggests that electronic sourcing can help mitigate inappropriate procurement processes. Nonetheless, this issue has not been thoroughly explored within the Kenyan context, particularly among state corporations. This paper aims to address this gap by assessing the impact of electronic sourcing on the performance of state corporations in Kenya. The study is grounded in dynamic capabilities theory and employs a descriptive correlational research design. Data were collected from a sample of 153 respondents out of a population of 248, using a questionnaire administered physically through a drop-and-pick method. Analysis was conducted using SPSS, with quantitative data evaluated through descriptive statistics (mean and standard deviation) and inferential statistics (regression model). The findings indicate that electronic sourcing significantly affects the performance of state-owned corporations in Kenya. The study concludes that electronic sourcing is crucial for ensuring audit trails, enhancing service delivery, and managing operational costs effectively. Embracing electronic sourcing could enable state corporations to improve their performance by becoming more effective in their roles and functions.

Keywords: Electronic Sourcing, E-Procurement, State-Owned Corporations, Organizational Performance

A. INTRODUCTION

Procurement is crucial for all organizations, whether for-profit or not-for-profit, as it streamlines the acquisition of goods and services and works for internal or external use (Faheem & Siddiqui, 2019). The effectiveness of the procurement process plays a fundamental role in determining the organization's overall efficiency. Electronic procurement has been increasingly emphasized to enhance the effectiveness and efficiency of procurement (Idrees et al., 2022). Electronic procurement, or e-procurement, involves integrating technological systems and tools into the procurement process, automating functions that would otherwise be handled manually (Nandankar & Sachan, 2020). According to (Mugema and de Dieu, 2020), electronic procurement requires phased implementation based on key procurement functions, such as sourcing/tendering, informing/selection, and payment.

Sourcing is a critical component of the procurement process, encompassing activities aimed at identifying the best suppliers capable of delivering goods and services and working with optimal quality, quantity, and cost. The effectiveness of the sourcing process is crucial for determining supplier selection and ultimately affects end-user satisfaction (Yu, Yevu, & Nani, 2020). (Chan and Owusu, 2022) argue that the success of the procurement process hinges on efficient and appropriate sourcing. As the initial step in procurement, sourcing can significantly influence how well procurement aligns with organizational strategic goals or deviates from them. Electronic sourcing is considered a vital solution to enhance the effectiveness and efficiency of sourcing (Yu et al., 2020).

Electronic sourcing, as defined by (Abdihakim, 2019), involves using technological systems and computer-assisted processes to identify and select the best suppliers. This technological embrace minimizes human intervention by automating most activities (Hofbauer & Kececioglu, 2023). While sometimes referred to as e-tendering, e-sourcing is broader, encompassing a range of activities beyond merely advertising and evaluating tenders (Chukwuemeka & Poi, 2023). Implementing electronic sourcing allows organizations to access a larger

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pool of suppliers, potentially securing better prices, higher quality, and increased expertise from experienced suppliers (Waithaka & Kimani, 2021).

(Wangari and Ndeto, 2022) describe electronic sourcing in creating and approving purchase requisitions, placing purchase orders, and receiving goods and services through internet-based software systems. Integrating electronic sourcing significantly improves organizational performance by eliminating repetitive manual processes and excessive paperwork, thus reducing costs, increasing productivity, and enhancing customer service (Kimutai et al., 2020). E-sourcing enables organizations to identify top suppliers across a broader geographical area and maintain audit trails for transparency and accountability. As internet penetration grows and more suppliers adopt technology, public entities, including state corporations, are increasingly encouraged to embrace electronic sourcing to enhance procurement effectiveness and promote accountability in supplier selection.

Despite the growing emphasis on electronic sourcing among public entities in many developing countries, including Kenya (Organization for Economic Cooperation and Development – OECD, 2022), state corporations often continue to face challenges such as irregular tendering and acquisition of substandard supplies at inflated costs, resulting in public fund losses (Abdi & Barasa, 2023). Kenya has 248 state corporations, 46 classified as commercial enterprises, and 201 as non-commercial entities. Most commercial state corporations operate in the transport and energy sectors, contributing 85 percent of total revenues and accounting for 89 percent of total liabilities within the state sector in the fiscal year 2019-2020 (Government of Kenya, 2023). Non-commercial state corporations, including universities, vocational training colleges, water development agencies, and national hospitals, provide essential services funded heavily by the government. Given the substantial number of state corporations and the concentration of large companies in critical sectors, effective oversight and monitoring are essential (State Corporations Advisory Committee, 2022). A financial assessment by the National Treasury in 2022 highlighted weak financial performance and high levels of indebtedness among major state corporations. Embracing electronic sourcing could ensure that procurement spending aligns with the value of delivered products and services, enhancing supplier selection and allowing public scrutiny.

In the past decade, state-owned corporations in Kenya have faced significant challenges, including unprecedented levels of procurement expenditure coupled with the lowest performance and highest rates of misappropriation in the nation's history (Mugwe, 2023). Procurement has been identified as a major weakness, responsible for over 70% of these corporations' inefficiencies, low performance, and failures. (Kimutai et al., 2020) highlight that poor procurement processes have resulted in the loss of more than 30% of the budget due to inflated prices from irregularly identified suppliers and the delivery of sub-standard products and services. Despite the Public Procurement and Assets Disposal Act advocating for integrating technology to curb public fund losses, this practice has been inadequately implemented in over 95% of state corporations.

Empirical evidence shows that inappropriate procurement processes significantly affect the performance of both public and private entities (Otieno & Namusonge, 2023; Wangari & Ndeto, 2022). According to (Rotich et al., 2016), while the procurement process is a key factor behind the poor performance of public entities, the sourcing stage is crucial for determining overall effectiveness. Studies by (Maruti and Otinga, 2019; Ntooki and Kyule, 2021) demonstrate that electronic sourcing can enhance procurement processes and organizational performance. However, these studies vary in context and conceptualization, and local literature on adopting electronic sourcing among state corporations is scarce and outdated. This highlights the need for the current paper to explore the role of electronic sourcing in the performance of state corporations in Kenya. The study aims to assess the implementation status of electronic sourcing among these corporations and examine its impact on their performance.

Theoretical Review

The paper is grounded in Dynamic Capabilities Theory, developed by (Pisano and Shuen, 1997), which seeks to elucidate the key drivers of organizational effectiveness in enhancing competitiveness and sustaining performance. This theory emphasizes the importance of organizational resources in optimizing internal processes to ensure consistency, effectiveness, and efficiency. (Pisano and Shuen, 1997) compare dynamic capabilities to valuable internal resources that organizations leverage to gain a competitive advantage and promote success. Electronic sourcing represents a modern application of these dynamic capabilities, integrating in-house and external procurement components to improve operational excellence by reducing costs and time associated with procuring goods and services. This includes electronic requisitions, catalogs, and online vendor evaluations (Bradley, 2015).

According to (Pisano and Shuen, 1997), organizations must develop dynamic capabilities to sustain their operations in such an environment as the world becomes increasingly dynamic. Technological systems like electronic sourcing are examples of these dynamic capabilities. Electronic sourcing, defined as identifying, evaluating, and selecting suppliers through computer-assisted systems (Faheem & Siddiqui, 2019), helps organizations navigate a landscape crowded with unreliable suppliers and other risks (Hofbauer & Kececioglu, 2023). This paper employs Dynamic Capabilities Theory to underscore the role of electronic sourcing as a critical dynamic capability that enhances procurement processes and boosts organizational performance. Based on this theoretical framework, the following hypothesis is proposed: H0: Electronic sourcing has no significant influence on the performance of state corporations in Kenya.

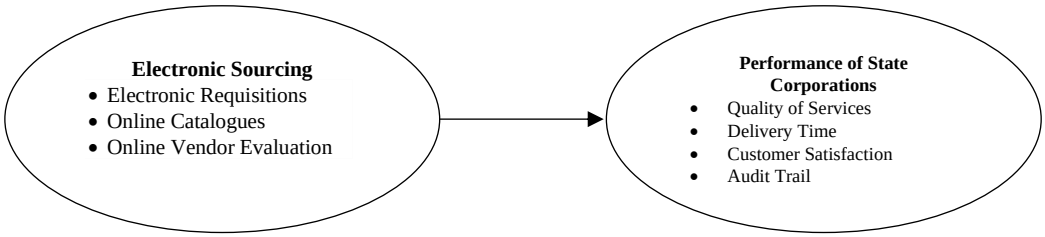

Figure 1: Conceptual Framework

Review of Empirical Literature

(Idrees et al., 2022) argue that e-sourcing involves identifying potential suppliers for specific spending categories using internet technology, often leveraging the internet itself. This approach enhances competition among suppliers in tactical purchasing processes, thereby improving organizational performance (Ribeiro & Henriques, 2011). (Songip et al., 2013) further define e-sourcing as the process of creating and approving purchasing requisitions, placing orders, and receiving goods and services through software systems based on internet technology, which significantly boosts organizational performance. In e-sourcing, the focus is typically on indirect goods and services—those not directly related to the product (Van Weele, 2010). These systems, such as ordering catalogs, are used organization-wide, whereas enterprise resource planning systems manage direct goods and services, often requiring planned ordering (Salford & Roche, 2010).

Electronic ordering solutions streamline repetitive manual processes and eliminate paperwork, which reduces costs, increases productivity, and enhances customer service, thus improving performance (Porter & Millar, 2015). (Mentzer, 2010) highlights that online ordering systems are an e-commerce function allowing customers to place orders via a company's website, potentially boosting sales by making it easier for customers to order from home, provided they have internet access (Minahan & Degan, 2011). Beyond providing an electronic platform for transactions, e-sourcing also streamlines workflows enhances flexibility, and fosters transparency in buyer-seller relationships (Moon, 2015). This improved transparency facilitates better-informed negotiations and richer arbitrage opportunities, further enhancing performance (Wong & Sloan, 2014).

Additionally, e-sourcing allows purchasing personnel to concentrate on strategic concerns, such as developing supply bases, managing supplier relationships, integrating suppliers into innovation processes, and restructuring value chains (Songip et al., 2013). (Issa et al., 2013) found that e-sourcing integration helps identify suitable suppliers, thereby ensuring the receipt of high-quality goods and services. (Mentzer, 2010) concluded that while electronic sourcing reduces coordination and search costs, close relationships with selected suppliers and various business models continue to coexist in some contexts.

B. RESEARCH METHOD

The study employed a descriptive correlational research design to explore the impact of electronic sourcing on the performance of state corporations in Kenya, incorporating both quantitative and qualitative data. According to Neuman (2010), descriptive survey research aims to describe the current status of phenomena, focusing on "what exists" regarding variables or conditions. A correlational design allows for examining relationships between variables—in this case, electronic sourcing and performance—by comparing different scenarios.

The target population consisted of the 248 state corporations in Kenya, categorized into 46 commercial and manufacturing, 71 executive agencies, 25 independent regulatory agencies, 57 higher education, research, and training institutions, and 49 service and state functions corporations. The units of analysis were the state corporations, while the heads of procurement in these corporations served as the units of observation.

To ensure a representative sample from a diverse population, the study used a stratified random sampling technique. This approach involved dividing the target population into strata based on their categorization and then randomly selecting a proportional number from each stratum. This method is effective in capturing the varied characteristics within a heterogeneous population. Using (Yamane's, 1967) sampling formula, the sample size was calculated as follows:

$$n=1+N\cdot e2N$$

where:

- n is the sample size,
- N is the target population (248),
- eee is the error margin (0.05).

Substituting the values:

$$n = \frac{248}{1+248*0.05^2}$$

$$n = 153$$

Thus, 153 respondents were selected using stratified random sampling from the 248 state corporations. Data collection was conducted through a questionnaire comprising both open-ended and closed-ended questions. The closed-ended questions employed Likert scale formats and rank-order scales. The questionnaire was administered using a drop-and-pick method, ensuring respondents' confidentiality and informed consent.

Data analysis utilized both descriptive and inferential statistics, with the Statistical Software for Social Sciences (SPSS) as the analysis tool. Descriptive statistics were used to compute measures of central tendency, skewness, and variability. Inferential statistics, specifically regression analysis, tested the research hypothesis. The regression model used was:

$$Y=\beta0+\beta X+\varepsilon$$

where:

Y represents the performance of state corporations,
$\beta 0$ is the y-intercept or model coefficient,
β is the coefficient of the independent variable,
X denotes electronic sourcing (the independent variable),
ε represents the error term.

The study utilized stratified random sampling to select 153 respondents from the 248 state corporations in Kenya. Primary data were collected through a questionnaire that included open-ended and closed-ended questions. The closed-ended section of the questionnaire used Likert scale formats and rank-order scales. The questionnaires were administered using a drop-and-pick method, ensuring that respondents' confidentiality was maintained and informed consent was obtained before completing the questionnaire. Data analysis involved descriptive and inferential statistics, with the Statistical Software for Social Sciences (SPSS) employed as the analytical tool. Descriptive statistics were used to calculate central tendency, skewness, and variability measures. A regression model was applied to test the research hypothesis for inferential analysis.

C. RESULTS AND ANALYSIS

The study was conducted with 153 survey respondents using a structured questionnaire. Of these, 149 completed and returned the questionnaires, resulting in a high response rate of 97.4%. This rate was deemed sufficient for the study, aligning with Creswell's (2016) assertion that a response rate above 60% is generally adequate for reliable analysis and representation of the sample population's views. The focus of the study was to evaluate the implementation of electronic sourcing within state-owned corporations in Kenya. As shown in Table 1, the results indicate that most respondents disagreed with the assertion that their respective corporations had adopted electronic requisitions for supplier sourcing, with a mean score of 2.73 and a standard deviation of 1.27.

Similarly, respondents disagreed that their corporations maintained active online catalogs with comprehensive information on goods and services, with a mean of 2.71 and a standard deviation of 1.42. Additionally, there was a lack of enthusiasm for online vendor evaluation despite its potential benefits in

enhancing service quality. These findings suggest that integrating electronic sourcing within most state corporations is ineffective, limiting their ability to leverage the advantages associated with such technological advancements.

Table 1. Level of Integration of Electronic Sourcing

Statements	Mean	Std. Dev.
Our organization has embraced electronic requisitions when sourcing for suppliers	2.73	1.27
We have an active catalog that contains all the information regarding the quality and specifications of goods and services required in the organization	2.71	1.42
Our suppliers are referred to available online databases that have the required information regarding the supplies that the corporation intends to procure	2.63	1.37
Identified vendors in our organization are assessed virtually without the necessity of physically being at the organization	2.58	1.41
Tenders are opened virtually to enhance the effectiveness and efficiency of the sourcing process	2.78	1.09
The organization has put adequate measures and systems to ensure the sourcing of suppliers is effectively done electronically	2.47	1.52

Source: Research data, 2024

Correlation Between Electronic Sourcing And Performance Of State Corporations

The study aimed to determine the relationship between electronic sourcing and the performance of state-owned corporations. This was assessed using correlation analysis. As shown in Table 2, the results reveal a strong positive and statistically significant correlation between electronic sourcing and performance, with a Pearson Correlation coefficient (r) of 0.759 and a p-value of 0.000, less than the 0.05 significance level. This indicates that electronic sourcing is a crucial factor influencing the performance of state corporations in Kenya. The 2-tailed test at a 95% confidence level also confirmed this significant correlation, underscoring that electronic sourcing plays a significant role in enhancing the performance of these corporations.

Table 2. Correlation between Electronic Sourcing and Performance of State Corporations

		Performance of State Corporations	Electronic Sourcing
Performance of State Corporations	Pearson Correlation	1	.759**
	Sig. (2-tailed)		.000
	N	149	149
Electronic Sourcing	Pearson Correlation	.759**	1
	Sig. (2-tailed)	.000	
	N	149	149

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

Source: Research data, 2024

Regression analysis was conducted to test the research hypothesis, and the results are detailed in Table 3. The R-squared value of 0.575 indicates that electronic sourcing accounts for 57.5% of the variation in the performance of state corporations in Kenya. The Analysis of Variance (ANOVA) results confirmed the model's statistical significance, evidenced by an F-statistic of 199.261 and a p-value of 0.000, well below the conventional significance level of 0.05. Further examination of the regression coefficients revealed a significant relationship between electronic sourcing and the performance of state corporations, with a coefficient (β) of 0.656 and a p-value of 0.000. This suggests that a one-unit increase in electronic sourcing corresponds to a 65.6% increase in the performance of these corporations.

The hypothesis testing criteria were applied: if the p-value exceeds 0.05, the null hypothesis (Ho) would not be rejected; however, if it is below 0.05, the null hypothesis would be rejected. In this case, the p-value was 0.000, less than 0.05, and the calculated t-value (14.116) exceeded the critical t-value (1.96). Thus, the null hypothesis was rejected, concluding that there is a significant relationship between electronic sourcing and performance in state corporations in Kenya.

Table 3. Regression Model Results on Electronic Sourcing and Performance of State Corporations

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.759[a]	.575	.573	.50263

ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	50.340	1	50.340	199.261	.000[b]
Residual	37.137	147	.253		
Total	87.477	148			

Regression of Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.872	.134		6.484	.000
Electronic Sourcing	.656	.046	.759	14.116	.000

Source: Research data, 2024

Discussion

The study explored the relationship between electronic sourcing and the performance of state corporations in Kenya. The results indicated that many state corporations had not effectively adopted electronic requisitions for supplier sourcing nor implemented online requisition management systems to facilitate the electronic ordering of supplies. Furthermore, most surveyed corporations did not recognize suppliers with electronic requisition systems and failed to leverage these systems to reduce costs. Additionally, there was a notable absence of online catalogs and e-market research, both crucial for cost reduction, and many corporations lacked online vendor evaluation systems, which are essential for minimizing expenses.

Inferential analysis revealed a significant relationship between electronic sourcing—an aspect of electronic procurement—and the performance of state corporations. This finding suggests that the state corporations were missing opportunities to enhance their procurement efficiency and secure better suppliers due to their reliance on outdated manual sourcing processes. The effective integration of electronic sourcing could improve performance by streamlining procurement processes and reducing costs.

D. CONCLUSION

The study concluded that electronic sourcing significantly impacts the performance of state corporations in Kenya. The findings indicate that these corporations have not effectively integrated key electronic sourcing components such as electronic requisitions, online catalogs, and online vendor evaluations. This lack of integration has hindered their ability to effectively identify and engage with the best suppliers, negatively affecting their overall performance. The continued underperformance of state corporations in service quality, delivery times, customer satisfaction, and audit trails can be partly attributed to their inadequate adoption of electronic sourcing practices.

Based on these conclusions, several recommendations have been made. Firstly, it is recommended that management, including the Board, Chief Executive Officers, senior managers, and supply chain managers, take a proactive role in integrating electronic procurement systems. This integration is crucial for enhancing the effectiveness of procurement processes and ensuring that they are conducted professionally and accountable, thereby minimizing wastage and misappropriations. Secondly, supply chain and procurement managers are advised to prioritize electronic sourcing to improve the efficiency and effectiveness of the supplier selection process. By adopting electronic systems, these managers can access a broader range of suppliers who can meet their needs, ultimately leading to more efficient and effective procurement processes.

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