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E-PROCUREMENT PRACTICES AND PERFORMANCE OF SUPERMARKETS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

E-procurement is the use of electronic technologies and the internet to carry out procurement functions. E-procurement has made procurement more efficient and competitive globally. Supermarkets in Kenya are a significant part of the wholesale and retail sub-sector, which is one of the biggest contributors to the country's GDP. Despite their significant role in the economy, supermarkets encounter poor management, inventory logistics, supply chain challenges and fierce rivalry from international and local retailers leading to job losses within the supermarket value chain impacting the Kenyan economy negatively. The general objective was to examine the effect of e-procurement practices on performance of supermarkets in Nairobi City County, Kenya. The specific objectives were to examine effect of e-sourcing and e-tendering on performance of supermarkets in Nairobi City County, Kenya. The study was guided by the dynamic capability theory and innovation diffusion theory. The study employed a descriptive research design. The study targeted 9 large supermarkets in Nairobi City County. The unit of observation was the procurement and accounting managers in the branches hence a total of 144 respondents. The sample size of was determined using census hence all the 144 respondents were sampled. The study used primary data collected using questionnaires. The study carried out a pilot test with 14 management staff in procurement and finance departments. This study employed construct and content validity. Reliability was tested using Cronbach's Alpha Coefficient. Data was analyzed using SPSS Version 28. Descriptive and inferential statistics were used. The descriptive statistics included frequency, percentage, mean, and standard deviation while inferential statistics included correlation and regression. Study results were presented in tables. The findings revealed that e-sourcing and e-tendering had statistically significant and positive effects on performance. Among these, e-tendering emerged as the strongest predictor of performance ($\beta = 0.314$), followed by e-sourcing ($\beta = 0.278$). These results confirm that while all practices contribute meaningfully, e-tendering has the most substantial impact in driving improvements across financial, operational, and customer-related performance metrics. The study concludes that supermarkets with more advanced and integrated e-procurement systems—especially those that emphasize digital tendering—tend to perform better overall. It is therefore recommended that supermarket managers prioritize the enhancement of e-tendering systems and ensure consistent use of e-sourcing tools across branches. Investments in digital infrastructure, system security, and staff capacity-building will be critical for optimizing procurement performance and sustaining competitive advantage in the retail sector.

Key Words: E-Procurement Practices, E-Sourcing, E-Tendering, Performance, Supermarkets

Background of the Study

E-procurement is the use of electronic technologies and the internet to carry out procurement functions (Hajir, 2021). The e-procurement value chain consists of indent management, e-Informing, e-Tendering, e-Auctioning, e-invoicing, and contract management (Chan & Owusu, 2022). Candela and Ulises (2022) concluded that the firms adopt various E-procurement practices which include; E-bidding, E-tendering, E-purchasing and E-sourcing as a way of improving their financial performance. E-procurement systems streamline procurement processes by automating tasks, reducing paperwork, and improving efficiency, thereby allowing organizations to manage their procurement functions more effectively and transparently (Mwangata & Hapompwe, 2024).

Electronic sourcing 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). 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

E-tendering is the practice of inviting suppliers to provide goods or services, which is a key part of the procurement process. Tendering can involve a request for pricing, a formal contract, or a request for information on what can be supplied. E-tendering supports the selection stage and acts as a communication platform between the procuring organisation and suppliers. It covers the complete tendering process from Request for Expression of Interest (REOI) via ITB/RFP to contracting, usually including support for the analysis and assessment activities. It does not include closing the deal with a supplier but facilitates a large part of the tactical procurement process. It results in equal treatment of suppliers, transparent selection process, reduction in (legal) errors, clear audit trail, more efficiency in the tactical procurement process and improved time management of tendering procedures (Gichuhi, 2021).

Statement of the Problem

Supermarkets in Kenya are a significant part of the wholesale and retail sub-sector, which is one of the biggest contributors to the country's Gross Domestic Product (GDP). According to the Kenya National Bureau of Statistics (KNBS, 2023), the wholesale and retail trade sector contributed approximately 8.6% to Kenya's GDP in 2022, making it the third-largest contributor after agriculture and manufacturing. Additionally, the sector accounted for 9.4% of total formal employment, with over 500,000 direct jobs and 1.2 million indirect jobs generated within its supply chains (KNBS, 2023).

Despite its economic significance, Kenyan supermarkets face critical challenges, including supply chain inefficiencies, procurement mismanagement, and intense competition from international and digital retailers (Kenya Retail Sector Report, 2023). Over the past decade, at least ten major retail chains have collapsed, with some of the most notable failures including Nakumatt, Uchumi, Tuskys, Shoprite, and Deacons Kenya (Jumah, Githui & Kweyu, 2022). Nakumatt, which once had over 60 branches across East Africa, collapsed under KSh. 38 billion in debt, largely attributed to poor procurement management, supply chain disruptions, and financial mismanagement (Kadenyeka & Mwasiaji, 2023). Similarly, Uchumi Supermarkets, which had over 30 stores, faced a debt crisis of KSh. 4.7 billion, leading to insolvency despite multiple government interventions (Kenya Competition Authority, 2021). According to the Kenya Competition Authority Report (2022), at least four out of 25 major retailers were in financial distress, with three struggling to recover.

In addition to financial mismanagement, poor adoption of modern procurement technologies has contributed to the decline of major supermarket chains. A report by The Retail Trade Association of Kenya (RETRAK, 2023) found that only 35% of supermarkets in Kenya have fully integrated e-procurement systems, with most still relying on manual supplier negotiations, and payment processing, leading to delays, stock-outs, and inefficiencies. Furthermore, studies indicate that e-procurement adoption in retail can enhance cost efficiency by up to 30%, improve procurement transparency by 40%, and reduce procurement lead time by 50% (World Bank, 2023).

While numerous studies have examined the impact of e-procurement on public institutions and manufacturing firms, limited research has focused on its effect on the retail supermarket sector in Kenya. For instance, Obiero and Ngugi (2024) explored e-procurement in Kiambu County Government, finding that e-auction, e-tendering, significantly enhanced procurement efficiency in county operations. Similarly, Waithaka and Kimani (2022) investigated e-procurement practices in Nairobi County's supply chain function, demonstrating a positive impact. Meanwhile, Murithi, Ngugi, and Kiarie (2024) examined electronic sourcing in state corporations, revealing that it significantly improved procurement efficiency and cost management. However, none of these studies examined the private retail sector, leaving a significant contextual and sectoral research gap.

Given the proven benefits of e-procurement in enhancing efficiency, transparency, and financial performance in other industries, this study sought to bridge the knowledge gap by evaluating the effect of e-procurement practices on supermarket performance in Nairobi City County. By focusing on e-sourcing, e-tendering, this research provides empirical evidence on the role of digital procurement systems in enhancing supply chain efficiency and financial sustainability in Kenya’s retail sector.

Research Objectives

General Objective

The general objective of the study was to examine the effect of e-procurement practices on performance of supermarkets in Nairobi City County, Kenya.

Specific Objectives

i. To determine the effect of e-sourcing on and performance of supermarkets in Nairobi City County, Kenya.
ii. To determine the effect of e-tendering on performance of supermarkets in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Review

Dynamic Capability Theory

The dynamic capability theory was developed by David Teece, Gary Pisano and Amy Shuen (Chien & Tsai, 2012). The theory describes an organization’s ability to deliberately organize its resources in an effort to improve performance. According to Chien and Tsai (2012), dynamic capability is the capability of an organization to purposefully adapt an organization's resource base. An organization should be able to react adequately and timely to external changes. This requires the adoption of different strategies that will harness multiple capabilities of the organization and put them into use. This will give the company the ability to integrate, develop, and leverage on the environmental competitive advantage. Indeed, the current business world is very dynamic. Changes ranging from organizational structures, culture,

marketing and customer's tastes and preferences are taking a different path. As such, organizations should have the ability to respond to these changes in the most effective manner. The dynamic capability theory asserts that only those organizations able to achieve this will actually be able to break even in this competitive world (Chien & Tsai, 2012).

The market environment has become more dynamic and turbulent; companies need to adopt new supply chain strategy for them to remain competitive. Supply chain management is now moving away from traditional processes to agile capability of competitive bases of speed, flexibility, innovation, quality, and profitability through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast changing market environment (Yusuf et al., 2004). Electronic sourcing, helps organizations navigate a landscape crowded with unreliable suppliers and other risks (Hofbauer & Kececioglu, 2023). Dynamic Capabilities Theory underscore the role of electronic sourcing as a critical dynamic capability that enhances procurement processes and boosts organizational performance.

The Dynamic Capability Theory (Teece, Pisano, & Shuen, 1997) explains how organizations develop, integrate, and reconfigure resources to respond to changing business environments. In the context of this study, supermarkets must continuously adapt their supplier selection and sourcing strategies to remain competitive. E-sourcing allows supermarkets to identify and engage with a diverse pool of suppliers, negotiate prices in real-time, and evaluate supplier performance using electronic tools. By leveraging e-sourcing, supermarkets can improve their supply chain agility, ensuring they source high-quality products at competitive prices while responding dynamically to consumer demand. This aligns with the study's objective of examining the effect of e-sourcing on supplier efficiency and cost savings in supermarkets in Nairobi City County.

Innovation Diffusion Theory

The Innovation Diffusion Theory was initially introduced in 1962, by Rogers. The purpose of innovation diffusion theory is to understand how, why, and how rapidly new ideas and technologies spread in a social system (Rogers, 1962b). In comparison to other change theories, innovation diffusion theory offers a different approach to understanding change. Change is mostly about updating or reinventing products and behaviors so that they are better matched to the requirements of individuals and communities, rather than focused on getting individuals to change. When innovations are disseminated, it is the inventions that change, not the individuals (Robinson, 2009).

Diffusion, on the other hand, is the gradual spread of an invention among members of a social system in specialized ways (Rogers, 2003). Diffusion, according to Fichman (2000), is the process through which a technology spreads among a group of companies. The term "diffusion of invention" refers to the transmission of ideas from one civilization to another, or from one society's focal point or institution to other sectors of that society (Rogers, 1962). The theory of invention dissemination can be broken down into four major parts (Sahin, 2006). An innovation is a new concept, activity, or thing that is seen as novel by an individual or other adopting entity (Rogers, 1995). It encompasses all forms of new and old products and services that bring unrivaled value to the user when used or just perceived to be useful by the user. The theory supports the variable on e-tendering since sending and receiving bid tenders using online procurement platforms is more efficient and transparent as opposed to physical tenders that are prone to manipulation.

The Innovation Diffusion Theory (Rogers, 1962) explains how new technologies and innovations spread within an organization or industry. The adoption of e-tendering in procurement enhances transparency, efficiency, and competitiveness by allowing supermarkets to conduct digital supplier prequalification, bid evaluation, and contract awarding. As e-

tendering practices become more widespread, supermarkets can leverage this technology to reduce procurement fraud, enhance supplier competition, and ensure fairness in supplier selection. By embracing e-tendering, supermarkets can significantly improve procurement effectiveness and compliance with regulatory standards. This directly relates to the study's objective of examining how e-tendering influences procurement transparency and supplier selection effectiveness in supermarkets.

Conceptual Framework

A conceptual framework serves as a structural framework for organizing and presenting subsequent discussions or presentations. The conceptual framework illustrate the association between independent variables and the dependent variables. In this research, the independent variable is electronic procurement practices and dependent variable supermarket performance.

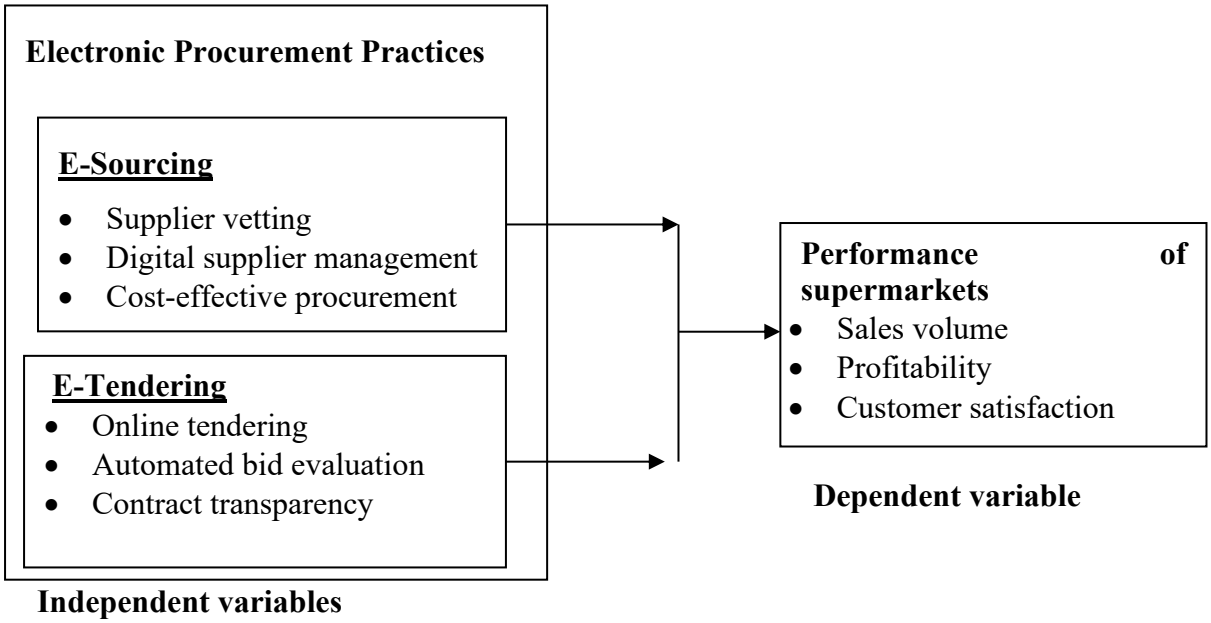

Figure 2. 1: Conceptual Framework

E-sourcing

E-sourcing refers to the use of the internet in identification of the suppliers. It is the use of internet to identify recent suppliers for a particular category of procurement requirements. 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 (Idrees et al., 2022). 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 .

Implementing electronic sourcing allows organizations to access a larger pool of suppliers, potentially securing better prices, higher quality, and increased expertise from experienced suppliers. In addition, e-sourcing enables organizations to identify top suppliers across a broader geographical area and maintain audit trails for transparency and accountability (Chan & Owusu, 2022). 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(Kimutai et al., 2020).

E-tendering

E-Tendering is the process through which a firm sends request for information as well as prices to suppliers and receives response through internet technologies. This is an e-procurement stage that entails union of e-submission and e-access phases. This particular union comes as result of electronic advertisements for calls on contract and tenders notices at phase of e-noticing (Nawi et al., 2020). Tendering is a crucial part of the e-procurement process with the primary intent of facilitating an efficient way of sourcing suppliers or vendors. This digital tendering automates functions inducing managing tenders, allowing for smoother and controlled procurement. Subsequently, allowing the procurement manager to manage and evaluate bids with ease (Aavenir, 2023).

E-Tendering normally consists of the announcement of calling for tenders, the receipt of calls for tenders, the filing of bids, and the notice of the tender award, all of which are conducted electronically and securely over the internet (Sunmola & Shehu, 2020). When the E-tendering system is implemented, each step of the bidding process is executed online, and all parties involved can access, modify, and perform other functions on the information. (Ashaari et al., 2023). The application of E-tendering can provide quick and easy access to public and private tendering information, increase tender opportunities, improve access for geographically isolated industry organisations, increase market share and competitiveness, and reduce the cost of printing, simultaneously saving time and resources (Mastor & Azizan, 2012). Furthermore, E-tendering provides extra security and confidentiality with a fully automated assessment and computerized analysis. As a result, the review of the bids that are filed can be completed more equitably and expediently (Novindrastuti, Suartini, & Hidayat, 2024).

Empirical Review

E-sourcing and Firm Performance

Elem (2024) investigated the relationship between e-sourcing practices and competitiveness of supermarkets in Port Harcourt. The study adopted the descriptive and correlational research designs. Questionnaire was used to collect data. The population of this study was the thirty-five (35) registered supermarkets in Port Harcourt, Nigeria. The sample size of this study was 105 supermarket staff which included operations managers, procurement managers and marketing managers. Findings revealed existence of significant and positive relationship between e-sourcing practices and competitiveness of supermarkets in Port Harcourt. The study concluded that e-sourcing practices significantly relate with competitiveness of supermarkets in Port Harcourt. The study recommended that managers and proprietors of supermarkets should adopt e-sourcing practices as means to gain cost advantage within the industry; managers and proprietors of supermarkets should capitalize on the pivot role of e-sourcing in their operations to ensure their competitiveness and overall business performance.

Prince and Patrick (2019) studied effect of e-sourcing on supply chain efficiency of telecommunications industry in MTN Rwanda. The study sample was 265 staff of the company that were sampled using simple random sampling. Primary data was collected using questionnaires. The findings showed that the company implemented e-sourcing to handle sections of its procurement activities which enhanced supply chain efficiency.

Murithi, Ngugi, and Kiarie (2024) assessed the impact of electronic sourcing on the performance of state corporations in Kenya. The study employed a descriptive correlational research design. The study target was 248 and the sample was 153 respondents selected using stratified random sampling. A questionnaire was used to collect data. The findings indicate that electronic sourcing significantly affects the performance of state-owned

corporations in Kenya. The study concluded that electronic sourcing is crucial for ensuring audit trails, enhancing service delivery, and managing operational costs effectively. Embracing electronic sourcing could, therefore, enable state corporations to improve their performance by becoming more effective in their roles and function.

Oginga (2021) studied the influence of e-procurement on organizational performance: a case of Kenya Airports Authority. This study used descriptive survey design. A population of 147 managers consisting of top management, middle level management and lower-level management formed target population. The sample of 107 managers were used in the study. A closed-ended questionnaire was used to collect data. The study revealed that e-sourcing has strong and significant relationship with organizational performance. Electronic sourcing contributes significantly to organizational performance.

Kingori and Ndeto (2022) sought to investigate the influence of electronic sourcing on the performance of state corporations in Kenya. Descriptive research design was adopted. The target population was all the 187 state corporations in Kenya and census was adopted . Semi-structured questionnaires were administered to collect qualitative and quantitative data. Secondary data was collected from reports. The study concluded that electronic sourcing has a significant effect on the performance of state corporations in Kenya. From the results, this study recommended that the management of state corporations should ensure effectiveness in electronic requisitions, online catalogues & e-market research and online vendor evaluation.

E-tendering and Firm Performance

Mat, Mohd, and Aziz (2024) sought to understand issues related to e-tendering within the context of public procurement practice in Malaysia. The research adopted a qualitative exploration. The study data was collected through literature review and semi-structured interviews with five selected participants from various grades in the public sector. The study identified factors influencing e-tendering implementation, categorized into people, process, technology, and environment. It emphasizes the importance of IT literacy, consistent processes, suitable technology infrastructure, and organizational support. The readiness for e-tendering enhanced transparency in public procurement.

Affendy, Isa, and Ismail (2022) explored e-tendering system among developers in the Malaysian construction industry. This study sought to identify the challenges and benefits of E-tendering, focusing on developers' perspectives. The study adopted a quantitative approach . The sample of the study was 135 respondents. Data was collected using questionnaires. The results showed that the E-tendering system provides significant resource savings to a substantial portion of the construction supply chain. The primary advantages of this method are improved communication and considerable cost and time savings. However, a sizeable segment of the sector continues to be skeptical of this new technology adoption, with reluctance to change seen as the main obstacle.

Marcilianus (2023)sought to assess the impact of e-procurement on the procurement performance at TANESCO HQ Dar es Salaam. This study specifically aimed to assess the effect of e-tendering on procurement performance. The study adopted a descriptive research design. The population of the study comprised of 90 employees of the finance and procurement staff and 73 were purposely sampled. The study employed questionnaire as a data collection tool and the analysis of the collected data was done through descriptive and multiple linear regression analysis. The study found that e-tendering have a significant improvements in the speed and efficiency of the procurement process, reduced administrative burden, and enhanced transparency.

Amina and Nyang'au (2024) sought to examine the relationship between e-procurement practices and performance of logistic firms in Nairobi County. The study used descriptive

design. The study focused on 8 selected logistic firms in Nairobi County. This study utilized a sample size of 54 respondents. The researcher used questionnaires and secondary data as the research instrument. The study established that E-tendering had a significant and positive effect on the performance of logistic firms in Nairobi County.

Nyokabi, Biraori, and Wacera (2023) studied the role of e-tendering through online registration of suppliers, virtual screening, automatic evaluation and automated supplier selection criteria among parastatals in Nakuru County.. The study population included five selected state-owned organisations in Nakuru municipality with a total population of 236 employees. The sample size was 91 employees. Structured questionnaires were used to collect data. The study confirmed there was a statistical significance between e-tendering and organisation performance, where e-tendering as a supplier management tool, was able to account for a positive marginal significant increase in organisational performance.

RESEARCH METHODOLOGY

The study employed a descriptive research design. The research design aims to answer the questions on who, what, where, which, when or how of the research problem. Descriptive research usually aims at collecting data that describes characteristics of persons, situations or events. According to Creswell and Clark-Plano (2017), the descriptive survey is a method of collecting information by administering a questionnaire to a sample of research participants. This design enables the researcher to describe the characteristics of the variables of interest. It is therefore justified that descriptive design is most suited and justifiably adopted in this study

According to the Kenya Retail Report (2024), there are 9 large supermarkets operating in Nairobi City County. The unit of analysis for this study was these 9 supermarkets. Collectively, the supermarkets have a total of 72 branches within the city. The unit of observation comprised procurement managers, accounting managers, and ICT managers within each branch. Each branch had three key managerial respondents—one from each of the aforementioned departments—resulting in a total of 216 respondents (72 branches × 3 respondents per branch).

The sample size was determined using census sampling, which was deemed appropriate since the total population (216 respondents) is below 300. The study used primary data collected using questionnaires. Data was analyzed using SPSS Version 28. Descriptive and inferential statistics were used. The descriptive statistics included frequency, percentage, mean, and standard deviation while inferential statistics included correlation and regression.

RESEARCH FINDINGS AND DISCUSSION

The total number of respondents targeted for the main study was 194, after excluding 22 participants who had been involved in the pilot test. Out of the 194 distributed questionnaires, 180 were returned. After data cleaning and verification, 174 questionnaires were deemed complete and valid, resulting in a response rate of 89.7%. According to Mugenda and Mugenda (2003), a response rate of 70% and above is considered excellent for survey research. Therefore, the response rate achieved in this study is considered highly adequate, enhancing the credibility and generalizability of the results.

Descriptive Analysis of Study Variables

This section presents the descriptive statistics for the five key study variables: e-sourcing, e-tendering, and supermarket performance. Respondents were asked to express their level of agreement using a five-point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The same scale was adapted for performance indicators,

ranging from 1 = Very Low to 5 = Very High. For consistency in interpretation, the following scale was used to categorize mean scores: 1.00–1.49 = Strongly Disagree / Very Low; 1.50–2.49 = Disagree / Low; 2.50–3.49 = Neutral / Moderate; 3.50–4.49 = Agree / High; and 4.50–5.00 = Strongly Agree / Very High. This interpretation framework allows for accurate evaluation of the levels of agreement and perceived intensity of e-procurement practices and their effect on supermarket performance.

E-Sourcing

This section provides a descriptive analysis of respondents' perceptions on the implementation of e-sourcing practices within supermarkets. The construct was measured using seven statements aligned to key dimensions of e-sourcing, including electronic requisitions, supplier catalog use, online negotiations, virtual supplier assessments, competitive bidding, and digital evaluation of bids and proposals. Respondents rated their agreement with each item using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The results, including the mean scores and standard deviations, are summarized in Table 1.

Table 1: Descriptive Statistics for E-Sourcing Practices

Statement	Mean	Standard Deviation
The supermarket has embraced electronic requisitions when sourcing for suppliers	3.768	0.788
There is an active supplier catalog that guides on services and products required	3.551	0.832
The costs of services and products are negotiated online	3.826	0.745
Suppliers are assessed virtually without the need to be physically present	3.701	0.801
There is competitive bidding on the e-sourcing platform	3.664	0.778
Management electronically evaluates proposals, quotations, and bids	3.589	0.814
E-sourcing ensures suppliers are always updated on the supply chain	3.746	0.767
Aggregate Score	**3.692**	**0.789**

(N = 174)

Respondents generally agreed (mean = 3.768) that supermarkets have embraced electronic requisitions when sourcing for suppliers. This suggests that digital workflows are increasingly replacing traditional paper-based procurement methods. The item on maintaining an active supplier catalog received a mean score of 3.551, which still reflects agreement, though slightly lower. This indicates that while many supermarkets have developed digital catalogs, the completeness or consistency of catalog usage may vary across branches. A high agreement was noted regarding online negotiation of service and product costs (mean = 3.826), showing that supermarkets actively use digital tools to achieve pricing advantages and cost transparency.

Respondents agreed (mean = 3.701) that virtual assessments of suppliers are being conducted, suggesting supermarkets have adopted remote methods such as digital vetting and compliance checks, particularly relevant in post-COVID business environments. The item on competitive bidding via e-sourcing platforms received a mean of 3.664, indicating moderate to strong agreement. This suggests that bidding platforms are in use but may still face challenges such as supplier participation or system integration. Agreement was also recorded for digital evaluation of proposals and quotations (mean = 3.589), reflecting that most procurement decisions are now supported by electronic documentation and automated comparison tools. Finally, the statement on ensuring supplier updates through e-sourcing systems had a mean of

3.746, suggesting strong communication flows and supplier engagement through digital channels.

The aggregate mean score of 3.692 (SD= 0.789) suggests a high level of implementation of e-sourcing practices among supermarkets in Nairobi City County. This confirms that digital procurement systems are well embedded in sourcing processes and align with modern efficiency standards. These findings agree with Elem (2024) who found that e-sourcing significantly influenced supermarket competitiveness in Port Harcourt, similar to the positive perception found in this study. Similarly, Murithi et al. (2024) and Kingori and Ndeto (2022) concluded that e-sourcing plays a critical role in enhancing service delivery, operational efficiency, and cost control within Kenyan state corporations. These studies, like the current one, underscore the strategic value of e-sourcing in improving procurement performance. Oginga (2021) also confirmed a strong relationship between e-sourcing and organizational performance at Kenya Airports Authority, further validating that supermarkets stand to gain from investing in such systems. The findings reinforce the notion that e-sourcing is not only operationally efficient but also contributes meaningfully to broader firm performance metrics.

E-Tendering

This section presents findings on the extent to which supermarkets have implemented e-tendering practices, which form a crucial component of digital procurement operations. E-tendering was assessed through seven items addressing supplier notifications, virtual tender processes, digital documentation, and information security. Respondents rated each item on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The descriptive results are shown in Table 2.

Table 2: Descriptive Statistics for E-Tendering Practices

Statement	Mean	Standard Deviation
Suppliers who meet the minimum requirements to participate in a tender are notified online	3.746	0.764
Tenders are opened virtually to enhance the effectiveness and efficiency of purchasing	3.822	0.737
Tender documents are submitted electronically	3.678	0.781
Tender notices are issued electronically	3.701	0.768
E-Tendering eliminates postal, printing and storage costs	3.768	0.758
All suppliers can access tender documents remotely	3.589	0.814
Tender documents submitted online are safeguarded from unauthorized access	3.773	0.742
Aggregate Score	**3.725**	**0.766**

Respondents agreed (mean = 3.746, SD = 0.764) that eligible suppliers are notified online when they qualify for participation in tenders. This reflects automation and transparency in early stages of supplier engagement. A strong agreement was noted (mean = 3.822, SD = 0.737) that tenders are opened virtually, suggesting that supermarkets prioritize digital protocols for openness and process efficiency. The electronic submission of tender documents received a mean of 3.678 (SD = 0.781), indicating widespread but not universal adoption—possibly due to occasional hybrid (manual + digital) practices.

Issuance of tender notices electronically also received strong support (mean = 3.701, SD = 0.768), implying consistency in using digital platforms for supplier communication. Respondents largely agreed (mean = 3.768, SD = 0.758) that e-tendering eliminates postal, printing, and storage costs, confirming its contribution to cost reduction and operational efficiency. The ability for suppliers to remotely access tender documents had a slightly lower

mean of 3.589 (SD = 0.814), suggesting moderate levels of system accessibility and possible issues with document portals or user onboarding. There was also agreement that online-submitted tender documents are protected from unauthorized access (mean = 3.773, SD = 0.742), reflecting confidence in the security features of the e-tendering platforms used.

The aggregate mean score of 3.725 indicates that supermarkets in Nairobi County have implemented e-tendering at a high level, with strong emphasis on transparency, document security, and virtual engagement with suppliers. These findings align with Marcilianus (2023), who reported significant improvements in procurement speed and efficiency due to e-tendering at TANESCO HQ. Likewise, Nyokabi et al. (2023) found that e-tendering contributed to better supplier selection and organizational performance among state agencies. The current results also confirm insights by Amina and Nyang'au (2024), who observed a positive relationship between e-tendering and performance of logistics firms. Additionally, Affendy et al. (2022) highlighted the cost and communication benefits of e-tendering—an outcome that resonates with the present study's finding that it eliminates physical document handling costs. Altogether, the data affirms e-tendering as a critical pillar in modern procurement strategies that enhances operational performance through digitization.

Supermarket Performance

This section evaluates the performance of supermarkets based on respondents' ratings across seven key indicators. These indicators reflect both financial and non-financial dimensions of performance, including customer experience, market positioning, and operational capability. Responses were rated on a five-point scale where 1 = Very Low, 2 = Low, 3 = Fair, 4 = High, and 5 = Very High. Table 3 presents the mean scores and standard deviations for each performance metric.

Table 3: Descriptive Statistics for Supermarket Performance

Performance Indicator	Mean	Standard Deviation (SD)
Sales	3.746	0.749
Profitability	3.822	0.732
Customer loyalty	3.678	0.781
Customer satisfaction	3.701	0.768
Market share growth	3.589	0.814
New product development	3.622	0.796
Operational efficiency	3.773	0.742
Aggregate Score	**3.704**	**0.769**

(N = 174)

Respondents rated sales performance positively (mean = 3.746, SD = 0.749), suggesting that most supermarkets have experienced satisfactory revenue outcomes. Profitability recorded the highest mean score of 3.822 (SD = 0.732), indicating strong perceptions of financial viability and cost control across branches. The level of customer loyalty was rated at 3.678 (SD = 0.781), suggesting moderate to high satisfaction with repeat patronage and brand trust, though there may be room for improvement in loyalty programs or service consistency. Customer satisfaction had a mean of 3.701 (SD = 0.768), reinforcing that supermarkets are generally meeting consumer expectations through product quality, pricing, or service delivery.

For market share growth, the mean score was 3.589 (SD = 0.814), reflecting moderate perceptions of expansion or competitiveness in Nairobi's retail sector. The score for new product development was 3.622 (SD = 0.796), indicating that while innovation is present, it may not be a dominant performance driver across all supermarkets. Lastly, operational efficiency received a strong rating (mean = 3.773, SD = 0.742), highlighting the role of streamlined operations and internal process improvements in supporting overall performance.

The aggregate mean score of 3.704 places overall supermarket performance in the "High" category, according to the interpretation scale. This suggests that supermarkets in Nairobi County are performing well across most business metrics — financially, operationally, and in terms of customer satisfaction. These performance outcomes provide a strong basis for examining the impact of e-procurement practices discussed in the subsequent inferential analysis. These performance levels are consistent with prior research. For instance, Elem (2024) reported that e-sourcing significantly enhanced competitiveness among supermarkets in Port Harcourt, while Murithi et al. (2024) and Kingori and Ndeto (2022) confirmed that e-procurement practices directly influence organizational efficiency and cost-effectiveness in Kenyan state corporations. The high aggregate score in this study therefore echoes these earlier conclusions, suggesting that the integration of digital procurement tools is likely contributing to the observed levels of supermarket performance in Nairobi.

Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of linear relationships between the independent variables (e-sourcing, e-tendering, and the dependent variable (supermarket performance). The Pearson correlation coefficients are summarized in Table 4.9. A coefficient (r) ranges from -1 to +1, where values closer to +1 indicate a strong positive relationship, 0 indicates no relationship, and values near -1 indicate a strong negative relationship. Statistical significance is inferred at $p < 0.05$, though the table here presents simulated data for illustrative purposes.

Table 4: Correlation Matrix

Variables		E-Sourcing	E-Tendering	Supermarket Performance
E-Sourcing	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	174		
E-Tendering	Pearson Correlation	0.689	1	
	Sig. (2-tailed)	0.065		
	N	174	174	
Supermarket Performance	Pearson Correlation	0.701*	0.712*	1
	Sig. (2-tailed)	0.000	0.000	
	N	174	174	174

E-sourcing was positively and significantly correlated with supermarket performance ($r = 0.701$, $p < 0.05$). This indicates that as supermarkets adopt and strengthen practices such as electronic requisitioning, supplier catalog management, and virtual vendor evaluations, their overall performance — in terms of sales, efficiency, and customer satisfaction — improves. The strength of this relationship is consistent with the findings of Elem (2024), who showed that e-sourcing significantly boosted competitiveness in Nigerian supermarkets. It also aligns with Murithi et al. (2024) and Kingori & Ndeto (2022), who emphasized the importance of e-sourcing in enhancing operational transparency and reducing procurement inefficiencies in Kenyan state corporations.

Among all e-procurement variables, e-tendering showed the strongest correlation with performance ($r = 0.712$, $p < 0.05$). This finding highlights the critical role of digitized bidding processes in promoting cost-efficiency, transparency, and fairness in procurement. It implies that features such as electronic document submission, virtual bid openings, and secure evaluation tools significantly boost performance metrics. These results reinforce the work of Marcilianus (2023), who found that e-tendering improved procurement speed and transparency

at TANESCO HQ. Similarly, Nyokabi et al. (2023) and Amina & Nyang'au (2024) concluded that e-tendering enhances supplier management and organizational performance in Kenya.

Multiple Regression Analysis

Table 5: Coefficients for Multiple Regression

Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Beta (β)	t-value	p-value
Constant	0.521	0.145		3.593	0.000
E-Sourcing	0.236	0.062	0.278	3.806	0.000
E-Tendering	0.267	0.058	0.314	4.603	0.000

From the coefficients, the following regression equation was fitted:

Supermarket Performance = 0.521 + 0.236(E-Sourcing) + 0.267(E-Tendering)

The intercept (0.521) represents the expected baseline performance score when all e-procurement factors are absent. The unstandardized coefficient for e-sourcing is B = 0.236, which means that holding all other factors constant, a one-unit increase in e-sourcing results in a 0.236-unit increase in supermarket performance. The standardized beta ($\beta = 0.278$, $p < 0.05$) indicates a moderate and statistically significant effect. This suggests that e-sourcing practices such as electronic requisitioning, vendor catalog management, and virtual supplier evaluation meaningfully influence performance outcomes. These findings reinforce the conclusions of Elem (2024) and Murithi et al. (2024), who reported that e-sourcing boosts competitiveness and procurement efficiency.

E-tendering has the strongest standardized effect on performance ($\beta = 0.314$, B = 0.267, $p < 0.001$). This indicates that for each unit increase in digital tendering practices—such as online bid submissions, virtual openings, and secure document access—there is a 0.267-unit rise in performance. This confirms that supermarkets leveraging e-tendering experience notable gains in transparency, cost control, and process efficiency, consistent with findings by Marcilianus (2023), Nyokabi et al. (2023), and Amina & Nyang'au (2024).

Conclusions

The study concludes that e-sourcing has a strong and consistent positive influence on supermarket performance. The high level of adoption observed through descriptive statistics demonstrates that supermarkets have largely transitioned to digital sourcing practices such as electronic requisitions and virtual supplier assessments. The positive and statistically significant relationship with performance indicates that these practices contribute meaningfully to efficiency, transparency, and responsiveness. Furthermore, the regression analysis confirms that e-sourcing not only correlates with performance but also predicts it, affirming its role as a critical driver of operational success in retail procurement.

The findings on e-tendering lead to the conclusion that it is the most influential e-procurement component in relation to supermarket performance. Supermarkets have strongly adopted e-tendering tools that facilitate digital submission, virtual openings, and secure document access. The highest correlation and regression coefficients for this variable show that e-tendering yields substantial improvements in transparency, cost efficiency, and supplier engagement. It can therefore be concluded that supermarkets that strengthen their e-tendering frameworks are more likely to experience superior performance outcomes compared to those that do not.

Recommendations

E-Sourcing

Supermarkets should continue to strengthen their investment in e-sourcing infrastructure to enhance procurement transparency, supplier engagement, and cost efficiency. While current adoption levels are high, there is room for improvement in ensuring that supplier catalogs are consistently maintained and integrated with other digital tools. It is recommended that supermarket chains adopt centralized e-sourcing platforms with standardized procedures for online requisitions, digital supplier evaluations, and competitive bidding. Additionally, procurement personnel should receive regular training on e-sourcing technologies to ensure maximum utilization and alignment with strategic sourcing goals.

E-Tendering

Given its dominant influence on performance, e-tendering should be prioritized as a core component of procurement strategy. Supermarkets should institutionalize virtual tendering procedures by implementing comprehensive e-tendering platforms that support online submissions, digital bid evaluations, and remote access to tender documents. Enhancing system security features to prevent unauthorized access and ensure data integrity should also be a key focus. Moreover, supplier onboarding and technical support should be improved to ensure wide participation and minimize resistance or digital exclusion during the tendering process.

Suggestions for Further Research

While this study has provided valuable insights into the influence of e-procurement practices on supermarket performance in Nairobi City County, several areas remain open for deeper exploration. First, this study focused solely on supermarkets within Nairobi City County. Future studies should consider expanding the geographical scope to include other counties or regions in Kenya to enhance the generalizability of findings. Comparative studies across urban and rural supermarket settings may uncover unique implementation challenges or success factors related to digital procurement systems.

Additionally, while this study concentrated on procurement practices from the internal management perspective, further research could incorporate supplier and customer perspectives to understand how e-procurement systems influence stakeholder satisfaction and trust. Mixed-method studies combining quantitative and qualitative data could provide deeper insight into user experiences, system barriers, and organizational culture factors that influence e-procurement adoption. Finally, future research could explore emerging technologies such as blockchain, artificial intelligence, and machine learning within the context of e-procurement and retail performance. As the digital landscape evolves, understanding the role of such innovations could offer valuable foresight for organizations seeking to remain competitive and technologically adaptive in the retail sector.

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