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SUSTAINABLE PROCUREMENT PRACTICES AND PERFORMANCE OF STATE CORPORATIONS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

In recent years, the performance of state corporations in Kenya has been on a downward trajectory, which has raised concerns among stakeholders. A number of these entities have struggled with operational inefficiencies, corruption, mismanagement, and poor financial performance. According to the Auditor General's report (2022), out of the 247 state corporations in Kenya, over 50% were unable to meet their financial obligations, with several recording significant losses. The general objective of the study was to assess the influence of sustainable procurement practices on performance of state corporations in Nairobi City County, Kenya. Specifically, the study sought to determine the influence of green specification on performance of state corporations in Nairobi City County, Kenya and to establish the influence of green tendering on performance of state corporations in Nairobi City County, Kenya. The study used a descriptive cross-sectional research design. The target population was the management employees in the thirty-seven state corporations in Nairobi County. The study targeted two top managers, 5 middle-level managers, and 7 lower-level managers in every state corporation. The study sample size was two hundred and twenty-seven (227) management employees working in 37 state corporations operating in Nairobi County. The study's primary data was obtained using semi-structured questionnaires. The researcher carried out a pilot study to ensure the data collection tool is reliable and valid. Quantitative and qualitative data was generated from the closed-ended and open-ended questions, respectively. Qualitative data was analyzed on thematic basis and the findings provided in a narrative form. Before the data can be analyzed, 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). Data analysis was done using descriptive statistics and inferential statistics. Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis. The study results were presented in tables and figures. The study concludes that green specification has a positive and significant effect on performance of state corporations in Nairobi City County, Kenya. The study also concludes that green tendering has a positive and significant effect on performance of state corporations in Nairobi City County, Kenya. Based on the findings, the study recommends that the management of state corporations in Kenya should establish a clear framework that prioritizes sustainability criteria in the procurement process. By integrating these criteria into their procurement policies, state corporations can drive demand for greener products, encourage suppliers to adopt sustainable practices, and foster a culture of environmental responsibility.

Key Words: Sustainable Procurement Practices, Green Specification, Green Tendering

Background of the Study

The growing emphasis on environmental sustainability has led organizations worldwide to integrate Sustainable procurement practices into their operations. Green procurement, also known as sustainable procurement, involves the acquisition of goods, services, and works in a manner that minimizes environmental impact and promotes sustainability throughout the procurement lifecycle ("The Adoption of National Green Procurement Plans from the Perspective of Circular Economy," 2020). This paradigm shift towards environmentally conscious procurement practices is particularly pertinent for state corporations, which are increasingly held accountable for their environmental footprint. To keep pace with the changing business environment, stringent environmental protection requirements by regulatory agencies have instituted reforms aimed at improving procurement performance in both service delivery and ecological management (Mojumder et al., 2022a). Therefore, green procurement has become an important agenda for both governments and the private sector in Kenya.

Green procurement has four major components; reverse logistics, green specification, green inventory management, and green tendering. Reverse logistics, involves the process of moving goods from their final destination back to the manufacturer for either reuse, recycling, or proper disposal (Melo et al., 2022). Reverse logistics benefit practicing organizations in several ways. To begin with. Reverse logistics enhance cost reduction as it allows companies to recover value from returned products through refurbishing, recycling, or reusing components. This not only reduces the need for raw materials but also minimizes disposal costs and the environmental impact associated with waste. Secondly, it enhances customer satisfaction by providing a seamless process for returns and exchanges, thereby fostering customer loyalty and enhancing repeat orders(Panya & Marendi, 2021; Wilson & Goffnett, 2022).

Moreover, the implementation of reverse logistics can significantly improve a company's environmental footprint, aligning its operations with sustainable practices and regulatory requirements (Kalubanga & Mbekeka, 2024). This alignment is increasingly important as consumers and stakeholders demand greater corporate responsibility and environmental stewardship. By incorporating reverse logistics, organizations can demonstrate their commitment to sustainability, which can enhance their corporate image and competitive advantage in the market. Reverse logistics can lead to better inventory management by identifying patterns in returns and enabling more accurate demand forecasting. This, in turn, helps in reducing excess inventory and associated holding costs (Plaza-Úbeda et al., 2020).

Green specification involves setting environmental criteria and standards for the procurement of products and services. This includes requirements for energy efficiency, reduced emissions, and the use of environmentally friendly materials. By adopting green specifications, state corporations can ensure that their procurement decisions contribute to environmental sustainability for future posterity. This not only helps in conserving natural resources but also reduces pollution and waste, thus, contributing to a healthier ecosystem. Green specification can lead to significant cost savings in the long run. Energy-efficient products lower operational costs by reducing energy consumption. Similarly, eco-friendly materials often have longer life spans and require less maintenance, which translates into reduced replacement and upkeep costs. In addition, adhering to green specifications can enhance an organization's compliance with environmental regulations, thereby avoiding potential fines and legal issues (Kalubanga & Mbekeka, 2024). This proactive approach to regulatory compliance also positions the organization favorably in the eyes of regulators and the public.

Green inventory management, encompasses the management of inventory in a manner that reduces environmental impact, such as minimizing waste, optimizing storage, and using eco-friendly packaging. Effective green inventory management can lead to significant cost savings, reduced waste, and enhanced sustainability (Pattnaik et al., 2021). By managing inventory more efficiently, corporations can minimize the accumulation of obsolete or excess stock, thereby reducing the need for waste disposal, storage costs, and the associated environmental

impact. Efficient inventory practices, such as just-in-time (JIT) inventory systems, help reduce holding costs by ensuring that inventory levels are aligned with actual demand. This alignment reduces the need for large storage spaces and the associated energy costs for lighting, heating, and cooling. Additionally, eco-friendly packaging often results in lighter and more compact packaging solutions, which can lower transportation costs and reduce the carbon footprint of logistics operations. These cost savings can be substantial, therefore improving the overall profitability of the organization (*Review on Green Inventory Model and Reverse Logistic*, 2023).

Furthermore, green inventory management can lead to improved supplier relationships and innovation. By prioritizing sustainable practices, organizations can collaborate with suppliers who share similar environmental values, fostering long-term partnerships based on mutual sustainability goals. This collaboration can drive innovation as suppliers develop new eco-friendly materials and products to meet the green specifications of their clients. Such innovations can provide competitive advantages, opening up new markets and opportunities for the organization (Kalubanga & Mbekeka, 2024).

Globally, Sustainable procurement practices are gaining momentum as businesses, governments, and organizations recognize their critical role in addressing environmental challenges and promoting sustainability. One of the key drivers of green procurement is the growing awareness of climate change and the urgent need to reduce greenhouse gas emissions thus reducing the detrimental impact of climate change currently faced. Many countries have implemented policies and regulations to encourage or mandate sustainable purchasing. For example, the European Union has established the Green Public Procurement (GPP) program, which sets criteria for sustainable products and services to guide public authorities in their procurement processes (Burja, 2009; European Commission, 2023.; Testa et al., 2012). Similarly, the United States has the Federal Green Purchasing Program, which requires federal agencies to buy environmentally preferable products and services (U.S. Environmental Protection Agency, 2022).

Sustainable procurement practices in Sub-Saharan Africa (SSA) have garnered significant attention as the region grapples with environmental challenges and seeks sustainable development. The adoption of green procurement in SSA is influenced by various factors, including government policies, international standards, and the pressing need to address environmental degradation. Several countries in SSA are progressively integrating green procurement policies into their national strategies. For instance, in South Africa, green procurement is being integrated into public procurement policies to promote energy efficiency, reduce carbon emissions, and encourage the use of renewable energy sources. The country's National Development Plan highlights the role of green procurement in achieving sustainable development goals by ensuring that government spending supports the purchase of eco-friendly products and services (Brammer & Walker, (2015).

In Kenya, the government has recognized the importance of green procurement as part of its broader environmental sustainability goals. This is reflected in several national policies and frameworks, such as the Public Procurement and Asset Disposal Act, 2015 that governs public procurement and encourages the inclusion of sustainability considerations in procurement decisions, and the Green Economy Strategy and Implementation Plan (GESIP) 2016-2030, a strategy promotes green growth and includes provisions for sustainable public procurement practices that aim to reduce the environmental impact of government operations. Many Kenyan companies, particularly those in sectors such as manufacturing, construction, and agriculture, are increasingly adopting Sustainable procurement practices. These practices are driven by a combination of regulatory compliance, corporate social responsibility (CSR), and the growing consumer demand for sustainable products and services. Companies are investing in eco-friendly materials, energy-efficient technologies, and waste reduction strategies as part of their procurement processes.

Statement of the Problem

State corporations play a crucial role in Kenya's economic and social development. These organizations are mandated to deliver essential services, generate revenue, and support various sectors of the economy, including transport, energy, health, and education (Wanja & Odoyo, 2020). As the government's commercial and non-commercial arms, state corporations are pivotal in executing strategic national goals such as poverty reduction, employment creation, and regional development. They serve as significant contributors to public welfare by offering affordable services, maintaining infrastructure, and regulating industries. Furthermore, these corporations are expected to implement key national policies, driving the country towards Vision 2030 and the Sustainable Development Goals (SDGs). Through their performance, they contribute to the gross domestic product (GDP), promote social equity, and improve public service delivery, making them an indispensable component of Kenya's economy (Nzisa, 2021).

However, in recent years, the performance of state corporations in Kenya has been on a downward trajectory, which has raised concerns among stakeholders. A number of these entities have struggled with operational inefficiencies, corruption, mismanagement, and poor financial performance. According to the Auditor General's report (2022), out of the 247 state corporations in Kenya, over 50% were unable to meet their financial obligations, with several recording significant losses. For instance, the Kenya Electricity Generating Company (KenGen) and the National Social Security Fund (NSSF) have posted declining profits in consecutive years, while the Kenya Broadcasting Corporation (KBC) has remained financially insolvent for over a decade. A study by the National Treasury in 2021 revealed that state corporations collectively accumulated over KES 70 billion in debt, signaling a serious financial crisis. This poor performance not only affects the overall economic stability of the country but also jeopardizes the delivery of crucial services to citizens, making it essential to address the root causes of their inefficiency and lack of sustainability.

One of the critical factors that can reverse the declining performance of state corporations is the adoption of sustainable procurement practices. Sustainable procurement involves integrating environmental, social, and economic considerations into procurement decisions, which can lead to enhanced efficiency, reduced operational costs, and improved long-term performance (Wanja & Odoyo, 2020). By sourcing goods and services responsibly, state corporations can minimize waste, reduce greenhouse gas emissions, and comply with environmental regulations. Moreover, sustainable procurement ensures that suppliers adhere to ethical standards, which can mitigate corruption risks and promote transparency in procurement processes (Musau, 2023). Studies have shown that organizations adopting sustainable procurement practices benefit from improved supplier relationships, increased innovation, and better compliance with international standards. Therefore, this study sought to assess the influence of sustainable procurement practices on performance of state corporations in Nairobi City County, Kenya

General Objective

The general objective of the study is to assess the influence of sustainable procurement practices on performance of state corporations in Nairobi City County, Kenya

Specific Objectives

This study was guided by the following specific objectives

i. To determine the influence of green specification on performance of state corporations in Nairobi City County, Kenya
ii. To establish the influence of green tendering on performance of state corporations in Nairobi City County, Kenya

Theoretical Review

Stakeholder theory

Stakeholder theory, as developed by R. Edward Freeman in the 1980s, suggests that organizations must consider the interests of all parties that affect or are affected by their operations. Unlike traditional views that prioritize shareholders, stakeholder theory asserts that long-term success and sustainability hinge on balancing the needs of multiple stakeholders, including employees, customers, suppliers, the government, and the broader community (Freeman, 2023).

State corporations operate in a complex environment where they must balance economic, environmental, and social goals. The pressure to adopt sustainable procurement practices often stems from the expectations of various stakeholders. Governments, as primary stakeholders, set regulations and policies that influence sustainable procurement. For instance, the Kenyan government has enacted laws like the Public Procurement and Asset Disposal Act, which requires state corporations to consider sustainability in their procurement activities. By responding to these regulatory demands, state corporations ensure compliance and maintain their legitimacy within the public sector (Freeman, 2023).

Suppliers are key stakeholders in the procurement process as well. In state corporations, the adoption of sustainable procurement often requires developing relationships with suppliers who meet certain environmental and ethical standards. Stakeholder theory suggests that corporations should engage suppliers as partners in the sustainability journey, encouraging them to adopt green practices, such as reducing their carbon footprint or using recycled materials (Barney & Harrison, 2018).

Tripple Bottom Line Framework

The Triple Bottom Line Framework provides a holistic view of how sustainable procurement practices can enhance the performance of state corporations in Nairobi City County. By focusing on the interconnection between economic, environmental, and social performance, this framework ensures that procurement strategies not only lead to cost reduction and operational efficiency but also contribute to broader goals of environmental sustainability and social responsibility (Moozeh et al., 2023).

The economic aspect of the TBL framework refers to the financial sustainability of an organization and its ability to generate profit, maintain efficiency, and ensure long-term viability. In procurement, this dimension emphasizes cost management, resource efficiency, and value creation for stakeholders. Through the adoption of sustainable procurement practices, such as green tendering and reverse logistics, organizations can reduce long-term operational costs, particularly in areas like waste management, energy use, and resource consumption. While the initial costs of adopting sustainable practices may be higher due to the need for new technologies and training, these practices ultimately lead to cost savings by improving efficiency and reducing the total cost of ownership of procured goods and services

Conceptual Framework

A conceptual framework is an assumed model that aids in the identification of study concepts as well as their interactions with one another (Mugenda & Mugenda, 2019). In this study the dependent variable is procurement performance while independent variables are, green specification and green tendering.

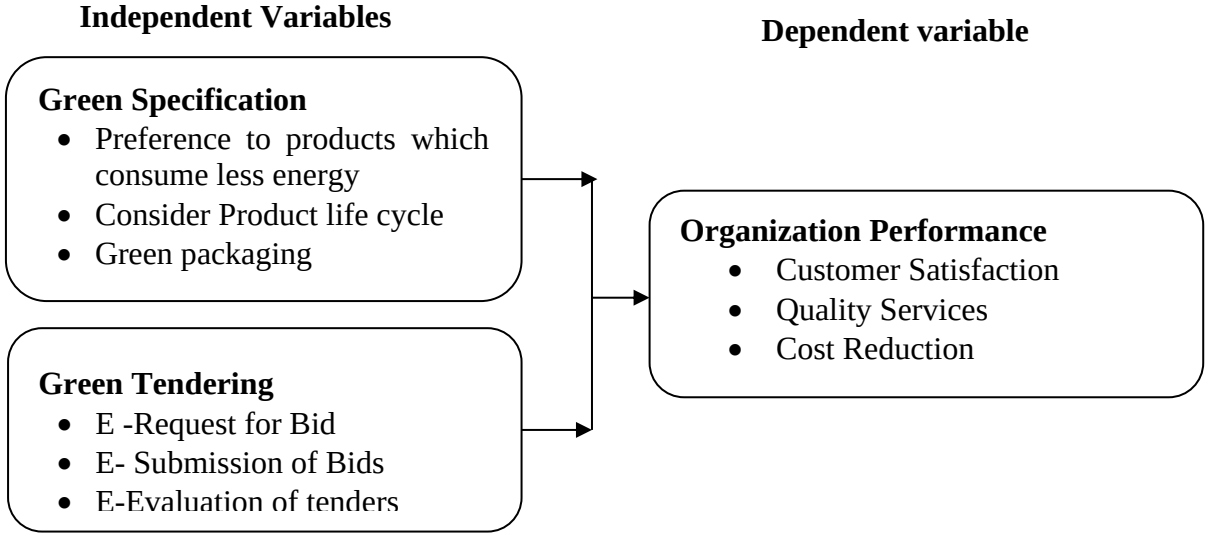

Figure 2. 1: Conceptual Framework

Green Specification

Green Specification refers to the set of environmentally focused criteria used during the procurement process to ensure that products, services, or materials meet sustainability standards (Zhu & Sarkis, 2019). It involves specifying requirements that promote environmental protection, resource efficiency, and reduced environmental impact throughout the product's lifecycle, from production to disposal. Green specifications typically prioritize factors such as energy efficiency, recyclability, minimal use of hazardous materials, and sustainable sourcing of raw materials (Agarwal & Vijayvargy, 2022).

Green specification focuses on selecting products that are energy-efficient, ensuring minimal energy consumption during their use. By giving preference to energy-saving products, organizations can significantly reduce their carbon footprint and operational costs. Energy-efficient products, such as appliances, machinery, or lighting systems, are designed to perform their intended functions while consuming less electricity or fuel. This not only contributes to sustainability efforts but also aligns with global environmental goals like reducing greenhouse gas emissions (Linton, Klassen, & Jayaraman, 2019).

A critical aspect of green specification is considering the entire product life cycle, from raw material extraction to manufacturing, usage, and disposal. By evaluating a product's environmental impact throughout its life cycle, companies can make more informed decisions about which products are truly sustainable (Kabergey & Richu, 2022). This approach ensures that products selected for procurement are not only eco-friendly during use but also have minimal negative impacts during production and disposal. Products with a longer lifespan, lower maintenance requirements, or easier recyclability are favored because they contribute to resource conservation and waste reduction (Lyons & Farrington, 2016).

Green packaging is another important component of green specification. It involves using packaging materials and designs that are environmentally friendly, such as biodegradable, recyclable, or reusable materials. Green packaging helps reduce waste and pollution, as well as conserves resources by using minimal and sustainable materials. In procurement, specifying products with green packaging means prioritizing suppliers who provide packaging that can be easily recycled or reused, and that produces minimal environmental harm (Liao & Rittscher, 2019)

Green Tendering

Green Tendering refers to the process of integrating environmental and sustainability criteria into the procurement and bidding process (Gitau & Shalle, 2020). It involves specifying eco-friendly standards that suppliers and contractors must meet when competing for contracts.

Green tendering aims to ensure that goods, services, or projects procured by an organization are not only cost-effective but also environmentally sustainable throughout their lifecycle. This includes reducing energy consumption, minimizing waste, using sustainable materials, and considering the environmental impact of the entire supply chain (Kabergey & Richu, 2019). E-Request for Bid (e-RFB) is a digital approach to soliciting bids from potential suppliers or contractors in the context of green tendering. This process utilizes online platforms to disseminate tender documents and specifications, ensuring that environmental criteria are clearly outlined and accessible. By leveraging technology, organizations can reach a wider pool of bidders, including those specializing in sustainable products and services. The e-RFB process promotes transparency and efficiency, as it allows for real-time updates and communications, reducing the administrative burden associated with traditional paper-based methods. Furthermore, the e-RFB can include specific green criteria that potential bidders must address, ensuring that sustainability is a key consideration from the outset of the procurement process (Njuguna & Kagiri, 2019).

E-Submission of bids involves the online submission of tender documents by suppliers through secure electronic platforms (Liao & Rittscher, 2019). This process not only streamlines the bidding procedure but also enhances the ability to assess and compare bids based on predefined green criteria. By enabling bidders to submit their proposals electronically, organizations can minimize paper waste and associated environmental impacts, aligning with the principles of green tendering (Muttimos, 2020). The e-submission process also facilitates better organization and management of documents, making it easier for procurement teams to track submissions, manage communications, and ensure compliance with environmental requirements. Additionally, e-submission can reduce delays in the procurement timeline, allowing for quicker decision-making and project initiation (Avery, 2019).

E-Evaluation of tenders is the digital assessment process used to review and score the submitted bids based on established criteria, including environmental sustainability. Utilizing electronic tools for evaluation allows procurement teams to efficiently analyze bids, comparing their adherence to green specifications and overall value (Gitau & Shalle, 2020). The e-evaluation process can include automated scoring systems that consider both cost and environmental impact, ensuring that sustainable practices are prioritized (Lyons & Farrington, 2019). Furthermore, this method fosters transparency and accountability, as all evaluation metrics can be documented and easily reviewed. By integrating e-evaluation into the tendering process, organizations can make more informed decisions that align with their sustainability goals while enhancing the integrity of the procurement process (Liao & Rittscher, 2019).

Empirical Literature

Green Specification and Organization Performance

To begin with, Zhang and Zhao (2019) observe that companies are increasingly prioritizing green competencies, particularly in the relationships between suppliers and vendors. Environmental factors are critical in addition to traditional selection criteria such as quality, flexibility, cost, and lead time. A key component of this shift is the adoption of "green products," which utilize environmentally friendly resources, especially in packaging. These products are characterized by their ability to decompose rapidly without harming the environment. The 4R1D approach, which stands for reuse, reduce, recycle, reclaim, and degradable, is instrumental in achieving green packaging solutions.

In a study conducted by Agarwal and Vijayvargy (2019), supplier assessment within environmentally responsive supply chains was examined using the Analytical Network Process (ANP). Their research highlighted the necessity of incorporating environmental factors into the supplier selection process. Given the growing public concern about environmental protection, traditional supplier selection methods, which overlooked environmental considerations, are

becoming obsolete. By introducing green criteria into supplier selection frameworks, their study underscores the significant impact this shift has on organizational performance.

Similarly, Liao and Rittscher (2020) investigated green suppliers and their environmental performance from a supply chain perspective. They found that Green Supply Chain Management (GSCM) promotes sustainable material cycles, where products are designed to minimize waste and conserve energy at each stage of their life cycle. This sustainable approach ensures that supply chains are managed in an environmentally, socially, and economically responsible manner.

Green Tendering and Organization Performance

Liao and Rittscher (2019) underscore that emerging frameworks for supplier selection and evaluation methods are increasingly aligned with sustainable development objectives. They emphasize that sustainability should not be a peripheral concern but rather a core element of the procurement process. As companies strive to meet sustainable procurement goals, they are aligning these efforts with broader goals of sustainable development. The shift from cost-centric procurement to sustainability-focused supplier selection is seen as critical to advancing both organizational performance and global sustainability efforts.

Gitau and Shalle (2020) support this view by advocating for the inclusion of environmental compliance records, corporate environmental policies, and certification from regulatory bodies such as the National Environment Management Authority (NEMA) and International Standards Organization (ISO) in the supplier selection process. The incorporation of environmental criteria into procurement ensures that sustainability is embedded in all supplier relationships. According to Humphreys (2013), the "best evaluated tender" should be the one that best addresses environmental, social, and economic sustainability.

Avery (2019) further contends that organizations should actively monitor the activities of their suppliers to understand their environmental impact. Organizations are encouraged to develop purchasing policies that minimize their own environmental footprint as well as that of their suppliers. This approach ensures that sustainability considerations permeate every aspect of the procurement cycle, from supplier selection to post-contract monitoring. However, Disney and Towill (2020) expand this view by noting that supplier diversity is an important element of sustainable procurement. They argue that businesses owned by minority groups or women, for example, should be actively included in the supply chain to promote social sustainability.

RESEARCH METHODOLOGY

Research Design

The study used a descriptive cross-sectional research design. A descriptive cross-sectional survey research design is proposed for this study because it involves measuring different variables in the population of interest at a single point in time. Descriptive cross-sectional survey research is a method of collecting information by interviewing and administering questionnaires to a sample of individuals at a point in time (Mugenda & Mugenda, 2019).

Target Population

The study was conducted in Nairobi County, Kenya with focus on the adoption of procurement practices on the performance of procurement of state corporations. Nairobi County was selected due to the concentration of State Corporations around the region. Nairobi houses the largest number of state corporations in Kenya, many of which handle critical sectors such as energy, infrastructure, healthcare, and education. This concentration provides a rich pool of data for examining the adoption of sustainable procurement practices and understanding their direct impact on procurement performance within diverse industries. The target population was

the management employees in the thirty-seven state corporations in Nairobi County. The study targeted two top managers, 5 middle-level managers, and 7 lower-level managers in every state corporation.

Table 3. 1: Target Population

Category	Target Population
Top Management Employees	74
Middle Management Employees	185
Lower Level Management Employees	259
Total	**518**

Sampling Procedure and Sample Size

The study used a stratified random sampling technique where the subjects will be selected in such a way that the existing subgroups in the population are more or less reproduced in the sample (Kothari, 2018). Stratified random sampling as a method of sampling that involves the division of a population into smaller groups known as strata, (Kasomo, 2019). In this study, state corporations from different categories formed strata and a stratified random technique were used to select sample size from each stratum.

Where n is the sample size, N is the population (512) and beta denotes the error, set at 0.05

$$n = \frac{N}{\{1 + B(\beta^2)\}}$$

512/ $\{1+512(0.05^2)\}$ = 227

The equation gives a sample size of two hundred and twenty-seven (227) management employees. Therefore, the study seeks to gather information from two hundred and twenty-seven (227) management employees working in 37 state corporations operating in Nairobi County.

Table 3. 2: Sample Size

Category	Target Population	Sample Size
Top Management Employees	74	37
Middle Management Employees	185	81
Lower Level Management Employees	259	109
Total	**518**	**227**

Instruments of Data Collection

Since the study used primary data, the data was collected using a structured questionnaire as the main data collection instrument. As Mugenda and Mugenda (2019) stipulate, in comparison to other research instruments, the questionnaire was a speedy method of obtaining data. As such the researcher is able to gain comprehensive data on numerous factors (Field, 2015). This research used both closed-ended and open-ended questions. The main reason why the researcher used a questionnaire is that it allows one to ask uniform questions and thus ensure that the responses are compatible.

Pilot Test

Pilot testing was conducted on the data collection instruments. The purpose of the pilot testing was to establish the validity and reliability of the research instruments (Harrison, 2012). The pilot testing was conducted on procurement heads who were not be included in the main study. The choice of the respondents was informed by Connelly (2018), who suggested that a pilot study sample should be 10% of the sample projected for the larger parent study. The pilot group was done through random sampling. This is because in this method every unit has a chance of being selected (Levy & Lemeshow, 2011)

Data Analysis and Presentation

Quantitative and qualitative data was generated from the closed-ended and open-ended questions, respectively. Qualitative data was analyzed on thematic basis and the findings provided in a narrative form. Before the data can be analyzed, 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, 2019).

Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages was used. Descriptive statistics therefore enable researchers to present the data in a more meaningful way, which allows simpler and easier interpretation (Singpurwalla, 2019). Inferential data analysis was conducted by use of Pearson correlation coefficient, and multiple regression analysis. Inferential statistics are used to make judgments about the probability that an observation is dependable or one that happened by chance in the study.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics Analysis

Green Specification and Procurement Performance

The first specific objective of the study was to determine the influence of green specification on performance of state corporations in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on green specification and performance of state corporations in Nairobi City County, Kenya. The results were as shown in Table 4.1

From the results, the respondents agreed that their organization prioritizes products that consume less energy (M=3.996, SD= 0.865). In addition, the respondents agreed that they actively seek out suppliers that offer energy-efficient alternatives (M=3.819, SD= 0.945). Further, the respondents agreed that they assess the entire life cycle of products before making purchasing decisions (M=3.798, SD= 0.611).

The respondents also agreed that product life cycle analysis influences their product design and selection (M=3.731, SD= 0.908). In addition, the respondents agreed that they prefer products that utilize eco-friendly packaging materials (M=3.711, SD= 0.776). Further, the respondents agreed that green packaging options are prioritized in their purchasing criteria (M=3.675, SD= 0.897).

Table 4. 1: Green Specification and Procurement Performance

	Mean	**Std. Deviation**
Our organization prioritizes products that consume less energy.	3.996	0.865
We actively seek out suppliers that offer energy-efficient alternatives.	3.819	0.945
We assess the entire life cycle of products before making purchasing decisions.	3.798	0.611
Product life cycle analysis influences our product design and selection.	3.731	0.908
We prefer products that utilize eco-friendly packaging materials.	3.711	0.776
Green packaging options are prioritized in our purchasing criteria	3.675	0.897
Aggregate	**3.788**	**0.834**

Green Tendering and Procurement Performance

The second specific objective of the study was to establish the influence of green tendering on performance of state corporations in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to green tendering and performance of state corporations in Nairobi City County, Kenya. The results were as presented in Table 4.2.

From the results, the respondents agreed that their organization utilizes e-request for bid (e-RFB) processes to promote transparency (M=3.920, SD= 0.605). The respondents also agreed that the e-RFB process helps them reach a wider pool of environmentally-conscious suppliers (M=3.915, SD= 0.981). In addition, the respondents agreed that their organization encourages suppliers to submit bids electronically to reduce paper waste (M=3.911, SD= 0.873).

The respondents also agreed that the e-submission process is user-friendly and accessible for all bidders (M=3.897, SD= 0.786). Further, the respondents agreed that their organization uses electronic tools for the evaluation of tenders to enhance efficiency (M=3.789, SD= 0.896). In addition, the respondents also agreed that they incorporate sustainability metrics into their e-evaluation criteria (M=3.695, SD= 0.897).

Table 4. 2: Green Tendering and Procurement Performance

	Mean	Std. Deviation
Our organization utilizes e-request for bid (e-RFB) processes to promote transparency.	3.920	0.605
The e-RFB process helps us reach a wider pool of environmentally-conscious suppliers.	3.915	0.981
Our organization encourages suppliers to submit bids electronically to reduce paper waste.	3.911	0.873
The e-submission process is user-friendly and accessible for all bidders.	3.897	0.786
Our organization uses electronic tools for the evaluation of tenders to enhance efficiency.	3.789	0.896
We incorporate sustainability metrics into our e-evaluation criteria.	3.695	0.897
Aggregate	**3.855**	**0.839**

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (green specification and green tendering) and the dependent variable (performance of state corporations in Nairobi City County, Kenya). Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients.

Table 4. 3: Correlation Coefficients

		Procurement Performance	Green Specification	Green Tendering
Procurement Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	207		
Green Specification	Pearson Correlation	.856**	1	
	Sig. (2-tailed)	.001		
	N	207	207	
Green Tendering	Pearson Correlation	.859**	.189	1
	Sig. (2-tailed)	.000	.081	
	N	207	207	207

From the results, there was a very strong relationship between green specification and performance of state corporations in Nairobi City County, Kenya (r = 0.856, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Liao and Rittscher (2023) that there is a very strong relationship between green specification and procurement performance.

The results also revealed that there was a very strong relationship between green tendering and performance of state corporations in Nairobi City County, Kenya (r = 0.859, 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 Lyons and Farrington (2022) who revealed that there is a very strong relationship between green tendering and procurement performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (green specification and green tendering) and the dependent variable (performance of state corporations in Nairobi City County, Kenya)

Table 4. 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891	.794	.795	.10120

a. Predictors: (Constant), green specification and green tendering

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.794. This implied that 79.4% of the variation in the dependent variable (performance of state corporations in Nairobi City County, Kenya) could be explained by independent variables (green specification and green tendering).

Table 4. 5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	6.014	91.12	.000[b]
	Residual	6.568	204	.032		
	Total	18.595	206			

a. Dependent Variable: performance of state corporations in Nairobi City County, Kenya
b. Predictors: (Constant), green specification and green tendering

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 91.12 while the F critical was 3.041. 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 green specification and green tendering on performance of state corporations in Nairobi City County, Kenya.

Table 4. 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	**(Constant)**	0.341	0.089		3.831	0.001
	green specification	0.387	0.095	0.386	3.949	0.001
	green tendering	0.398	0.102	0.399	3.716	0.003

The regression model was as follows:

$$\mathbf{Y = 0.341 + 0.387X_1 + 0.398X_2 + \varepsilon}$$

According to the results, green specification has significant effect on performance of state corporations in Nairobi City County, Kenya, β1=0.387, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings conform to the findings of Liao and Rittscher (2023) that there is a very strong relationship between green specification and procurement performance.

In addition, the results revealed that green tendering has significant effect on performance of state corporations in Nairobi City County, Kenya β1=0.398, 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 results of Lyons and Farrington (2022) who revealed that there is a very strong relationship between green tendering and procurement performance

Conclusions

The study concludes that green specification has a positive and significant effect on performance of state corporations in Nairobi City County, Kenya. The study revealed that preference to products which consume less energy, consider product life cycle and green packaging influence performance of state corporations in Nairobi City County, Kenya.

The study also concludes that green tendering has a positive and significant effect on performance of state corporations in Nairobi City County, Kenya. The study revealed that E - Request for Bid, E- Submission of Bids and E-Evaluation of tenders influence performance of state corporations in Nairobi City County, Kenya.

Recommendations

The study recommends that the management of state corporations in Kenya should establish a clear framework that prioritizes sustainability criteria in the procurement process. By integrating these criteria into their procurement policies, state corporations can drive demand for greener products, encourage suppliers to adopt sustainable practices, and foster a culture of environmental responsibility.

The study also recommends that the management of state corporations in Kenya should develop and implement a standardized framework that incorporates sustainability criteria into the tendering process. By requiring bidders to demonstrate their commitment to green practices, state corporations can encourage competition among suppliers to adopt environmentally friendly solutions.

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