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SUPPLY CHAIN MANAGEMENT

SUSTAINABLE PROCUREMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF SUPERMARKETS IN KIAMBU COUNTY, KENYA

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ABSTRACT

Purpose of the study: The study investigated the effect of sustainable procurement practices on supply chain performance among tier-one supermarkets in Kiambu County, Kenya. It focused on four practices-green procurement, ethical sourcing, supplier selection criteria, and procurement governance-and how they influence lead time efficiency, inventory management, product quality, and cost efficiency.

Problem Statement: Despite growing awareness of sustainability, many supermarkets in Kiambu continue to face high operational costs, unreliable suppliers, and weak procurement systems. These challenges undermine competitiveness, particularly in a fast-expanding retail environment where consumer expectations for quality, efficiency, and affordability are rising.

Methodology: The study adopted a descriptive research design targeting 106 heads of procurement. Using a census approach, 86 valid responses were obtained, representing an 81.13% response rate. Primary data were collected through structured questionnaires, tested for validity and reliability, and analyzed using descriptive and inferential statistics, including correlation and regression techniques.

Findings: The study revealed that all four sustainable procurement practices had significant positive effects on supply chain performance. Supplier selection criteria emerged as the most influential predictor, while green procurement enhanced cost efficiency and waste reduction.

Ethical sourcing improved supplier dependability, and procurement governance strengthened accountability and transparency.

Conclusion: The study concludes that procurement is not merely administrative but a strategic driver of supply chain performance.

Recommendations: The study recommends that supermarkets institutionalize green procurement policies emphasizing energy efficiency and waste reduction, adopt mandatory ethical sourcing audits, implement rigorous supplier selection frameworks, and strengthen governance through automation, auditing, and transparent reporting. Embedding sustainability in procurement systems will enhance resilience, efficiency, and long-term competitive advantage in Kenya's dynamic retail sector.

Keywords: *Sustainable procurement, Supply chain performance, green procurement, Ethical sourcing, Supplier selection, Procurement governance.*

INTRODUCTION

Sustainable procurement has become a critical component of modern supply chain management, reflecting growing global concerns about environmental protection, ethical responsibility, and economic efficiency. Organizations are increasingly embedding sustainability into their procurement strategies to achieve both operational effectiveness and long-term competitiveness. Sustainable procurement practices-such as green procurement, ethical sourcing, supplier selection, and procurement governance-integrate social and environmental considerations into purchasing decisions, ensuring that supply chains not only meet cost and quality objectives but also align with broader sustainability goals (Lee et al., 2022). At the international level, frameworks such as the European Union's Green Public Procurement (GPP) and the United Nations Sustainable Development Goal 12 emphasize responsible production and consumption, encouraging firms to adopt transparent, ethical, and environmentally sound procurement systems (UNEP, 2023). These frameworks have been linked to improved efficiency, reduced costs, and greater trust among stakeholders, highlighting the strategic role of procurement in advancing sustainability (Schmidt-Rohlfing et al., 2020).

In Africa, efforts to mainstream sustainable procurement are gaining traction, particularly within the East African region where Kenya, Uganda, and Tanzania have introduced reforms and capacity-building initiatives to promote sustainable practices (Adebayo & Ajayi, 2020).

Despite these developments, adoption remains uneven due to barriers such as weak enforcement of policies, fragmented procurement management, and limited supplier expertise (COMESA, 2024). Kenya's Public Procurement and Asset Disposal Act (2020) provides a legislative framework supporting sustainability, yet implementation in the private sector—especially in retail supermarkets-remains inconsistent (National Treasury, 2020). This gap has significant implications, as the retail sector plays a pivotal role in linking producers to consumers and influencing sustainability outcomes in both production and consumption. Supermarkets, in particular, manage high volumes of perishable goods, diverse supplier networks, and rapidly changing consumer demands, making sustainable procurement not just desirable but essential for operational resilience and competitiveness.

Locally, supermarkets in Kiambu County are under increasing pressure to align their procurement practices with sustainability imperatives due to heightened environmental awareness, competitive market forces, and consumer demand for ethical products. While some leading supermarkets have begun sourcing organic products, minimizing packaging waste, and partnering with local suppliers, many still rely on traditional procurement systems that lack sustainability standards. This has contributed to persistent inefficiencies such as weak inventory control, frequent supplier unreliability, long lead times, and inconsistent product quality (Mwangi, 2022). Evidence suggests that supermarkets adopting structured sustainable procurement practices can significantly improve performance by reducing waste, enhancing inventory turnover, and strengthening supplier relationships. Ethical sourcing enhances consumer trust and compliance, supplier selection ensures innovation and reliability, and governance frameworks promote accountability and transparency (Ngugi & Gikonyo, 2022; Ochieng, 2023). Against this backdrop, examining the effect of sustainable procurement practices on supply chain performance in Kiambu County provides valuable insights into how retail chains can enhance efficiency, build resilience, and secure long-term competitive advantage within Kenya's dynamic retail sector.

STATEMENT OF THE PROBLEM

Supermarket competitiveness depends heavily on efficient and resilient supply chains, particularly in fast-urbanizing regions such as Kiambu County, where consumer expectations and retail competition are intensifying. To remain competitive, supermarkets must consistently achieve short lead times, accurate inventory management, consistent product quality, and cost-effective operations (Lee et al., 2022). However, evidence indicates that these performance benchmarks remain elusive for many outlets in Kiambu. For instance, Mwangi and Muli (2022) found that 46% of supermarkets in the county experience frequent delays in supplier deliveries, leading to stock-outs and disruptions in availability. Additionally, 38% reported persistent inventory inaccuracies resulting in both stock-outs and overstocks, which undermine customer satisfaction and revenue stability. Procurement inefficiencies further exacerbate the problem, with costs estimated to account for 20–25% of supermarkets' operating expenses in Kenya's urban counties (Lee et al., 2022). The consequences of these inefficiencies are substantial.

Delivery delays not only disrupt availability but also compel supermarkets to resort to costly emergency sourcing arrangements, eroding profitability. Weak inventory control contributes to wastage, especially in perishable product categories such as fresh produce and dairy, where spoilage can account for 10–15% of total losses (Atieno, 2022). Inconsistent product quality undermines customer trust and loyalty, while escalating procurement costs limit supermarkets' ability to offer competitive prices. Collectively, these challenges compromise supply chain performance and diminish the capacity of supermarkets in Kiambu County to meet the demands of increasingly discerning and sustainability-conscious consumers.

The persistence of these inefficiencies despite growing awareness of sustainability highlights a deeper issue: the transformative potential of sustainable procurement has not been fully realized in Kiambu supermarkets. Existing research in Kenya has largely focused on manufacturing and public institutions (Muema, 2021; Bor, 2021), while retail supermarkets-with their unique challenges of perishability, fragmented supplier bases, and rapidly shifting consumer demand-remain underexplored. Where studies exist, such as Muramba's (2024) work on Nairobi supermarkets, they tend to examine practices in isolation, without considering how the combined effects of green procurement, ethical sourcing, supplier selection, and governance shape supply chain performance. This represents a significant knowledge gap that limits the ability of retail managers to implement evidence-based strategies.

Given the competitive pressures facing supermarkets in Kiambu County, there is a pressing need for empirical evidence that integrates multiple dimensions of sustainable procurement. Without such insights, inefficiencies will persist, undermining both competitiveness and contribution to broader sustainability goals. This study therefore seeks to investigate the combined impact of green procurement, ethical sourcing, supplier selection, and procurement governance on supply chain performance in tier-one supermarkets in Kiambu County.

OBJECTIVES OF THE STUDY

i) To examine the effect of green procurement on the supply chain performance of supermarkets in Kiambu County.
ii) To evaluate the effect of ethical sourcing on the supply chain performance of supermarkets in Kiambu County.
iii) To establish the effect of supplier selection on supply chain performance of supermarkets in Kiambu County.
iv) To analyze the effect of procurement governance on the supply chain performance of supermarkets in Kiambu County.

LITERATURE REVIEW

Theoretical Literature

The research adopted four key theories: Agency theory, which explains the alignment of managers' actions with organizational goals; institutional theory, which emphasizes the role of external norms and regulations; stakeholder theory, which highlights the importance of balancing diverse stakeholder interests and transaction Cost Economics (TCE), which focuses on minimizing procurement and coordination costs.

Agency Theory

Agency Theory was developed by Jensen and Meckling (1976) to address the principal-agent problem in organizations. The theory states that principals delegate authority to agents who may pursue self-interest rather than organizational objectives due to information asymmetry and divergent goals. The theory indicates that without proper monitoring mechanisms, agents engage in opportunistic behavior that increases costs and reduces efficiency. The theory was relevant to the current study to inform the fourth objective on procurement governance. This is because it explains how governance frameworks, transparency measures, and accountability systems function as control mechanisms that align procurement officers' decisions with organizational sustainability goals, thereby reducing agency costs and preventing short-term, self-serving decisions that undermine supply chain performance in Kiambu County supermarkets.

Institutional Theory

Institutional Theory was developed by Meyer and Rowan (1977) to explain how external forces shape organizational practices. The theory states that organizations adopt practices to conform to regulatory frameworks, industry norms, and social expectations to gain legitimacy and ensure survival. The theory indicates that conformity to institutional pressures enhances organizational reputation and stakeholder trust, while non-compliance results in reputational damage and operational sanctions. The theory was relevant to the current study to inform all four objectives, particularly procurement governance and ethical sourcing. This is because it explains why supermarkets adopt sustainable procurement practices to meet external pressures from Kenya's Public Procurement and Asset Disposal Act (2020), consumer demand for ethical products, and industry sustainability standards, thereby maintaining competitive legitimacy in Kiambu County's evolving retail environment.

Stakeholder Theory

Stakeholder Theory was developed by Freeman (1984) to expand organizational focus beyond shareholders to multiple stakeholders. The theory states that organizations must balance the interests of employees, customers, suppliers, communities, and regulators to achieve sustainable success. The theory indicates that inclusive decision-making addressing diverse stakeholder needs improves trust, reputation, and operational resilience. The theory was relevant to the current study to inform the second objective on ethical sourcing and the third objective on supplier selection. This is because it demonstrates that ethical sourcing practices and stakeholder engagement are strategic tools that strengthen consumer loyalty, improve product quality, and enhance supply chain reliability, particularly in contexts where Kenyan consumers increasingly prefer ethically sourced products.

Transaction Cost Economics (TCE) Theory

Transaction Cost Economics Theory was developed by Coase (1937) and expanded by Williamson (1979) to explain how organizations minimize transaction costs. The theory states that costs arise from opportunism, bounded rationality, and uncertainty in exchange relationships, and that firms seek governance structures to minimize these inefficiencies. The theory indicates that strategic supplier selection, long-term contracts, and strong governance mechanisms reduce search, negotiation, monitoring, and enforcement costs. The theory was relevant to the current study to inform the third objective on supplier selection criteria and the fourth objective on procurement governance. This is because it explains how rigorous supplier evaluation based on financial stability, innovation, and risk management, combined with transparent procurement policies and digital systems, reduces uncertainties, minimizes opportunism, and enhances supply chain performance in Kiambu County supermarkets.

Empirical Literature

Green procurement practices have demonstrated significant operational benefits across various contexts, though evidence remains concentrated in manufacturing sectors. Ullah (2023) in Bangladesh found that eco-friendly purchasing and logistics practices lowered operational costs and improved sustainability outcomes in manufacturing firms through regression analysis. Kimario et al. (2023) reported a 20% reduction in procurement costs and 15% increase in supplier reliability among Tanzanian manufacturing firms adopting eco-friendly procurement. In Kenya, Bor (2021) studying food and beverage processors found that green supply chain practices explained 63.3% of firm performance variance, moderated by legislative support, while Gichuhi and Osoro (2025) reported that energy-efficient procurement practices significantly influenced organizational performance in Kiambu-based firms, with regression models explaining 77.3% of variance. Muramba (2024) provided rare retail-specific evidence in Nairobi, showing that green purchasing, warehousing, and reverse logistics improved supermarket performance, though green packaging had negligible effect, underscoring that not all green initiatives uniformly benefit retail operations.

Ethical sourcing has been identified as critical for enhancing transparency and strengthening consumer trust, though research linking it to operational performance remains limited. Holloway (2025) using qualitative interviews found that transparent ethical sourcing enhanced stakeholder trust and brand legitimacy, though the study prioritized consumer perceptions over operational metrics. Nyakundi and Muchelule (2022) demonstrated that procedural justice ethics, supplier diversity, and ethical policies significantly improved procurement performance in Nairobi's county government ($\beta = 0.309$, $p = 0.005$), though their public-sector focus limits transferability to private supermarkets. Salil et al. (2024) studying Kenya Medical Supplies Authority (KEMSA) found that transparency ($\beta = 0.423$, $p = 0.000$) and confidentiality improved organizational performance, with lead-time variation moderating effects, suggesting ethical sourcing enhances efficiency through reduced delays. However, these studies focused on centralized public institutions rather than decentralized supermarket operations, leaving a gap in understanding how ethical practices directly influence retail supply chain metrics like cost control, supplier reliability, and inventory turnover.

Supplier selection criteria have consistently been found to influence supply chain efficiency, though retail-specific frameworks remain underdeveloped. Abuzaid et al. (2024) in Jordan's industrial sector confirmed that structured supplier evaluation improved cost-effectiveness and reliability, while Naibor (2019) highlighted financial status, technical capability, and cultural alignment as significant predictors of performance among Kenyan manufacturers. Wachiuri (2018) similarly reported that quality commitment, competence, and financial viability significantly improved performance among Kenyan state corporations. In retail contexts, Ng'ang'a (2022) found that supermarkets prioritizing sustainability in supplier evaluation achieved a 30% increase in accountability, though the study failed to link this to specific supply chain metrics. Masese (2025) studying Nairobi supermarkets identified product suitability, technical flexibility, and financial stability as key criteria but stopped short of empirically connecting these to performance indicators such as lead time or inventory turnover, underscoring a knowledge gap in identifying which criteria best predict supermarket supply chain performance.

Procurement governance has been linked to improved transparency, compliance, and efficiency, particularly in public-sector contexts. Jama and Mohamud (2024) found that strategic negotiation, e-procurement, and contract management significantly predicted performance in devolved governments, while Chemoiywo (2023) reported a 40% increase in efficiency in state-owned firms after integrating transparency measures. Obiero and Ngugi (2024) highlighted the role of e-procurement in enhancing accountability in Kiambu's county government. More relevant to the private sector, Gichuhi and Osoro (2025) established a positive relationship between procurement governance and firm performance in Kiambu's food and beverage industry ($\beta = 0.312$, $p < 0.01$), suggesting governance plays an important role in strengthening operations in local contexts. However, the study did not isolate governance as an independent construct affecting supply chain outcomes, nor did it address supermarket-specific challenges such as fluctuating demand and perishability, indicating that governance research rarely considers how frameworks influence retail-specific outcomes like lead time accuracy, inventory management, or supplier reliability.

Despite extensive research on sustainable procurement, significant gaps remain in understanding its application to retail supermarkets in developing economies. Most studies link green procurement to cost reduction and sustainability but evidence remains concentrated in manufacturing, leaving supermarket-specific impacts on lead times and inventory turnover underexplored. Ethical sourcing research emphasizes consumer trust and compliance with little focus on internal operational performance metrics relevant to retail supply chains. Supplier selection is recognized as vital, yet criteria relevant to retail perishability, fragmented supplier bases, and resource constraints remain unclear. Procurement governance is widely studied for compliance but seldom tied directly to supermarket supply chain outcomes. Given the unique characteristics of retail supply chains in Kiambu County—including perishability risks, volatile demand, fragmented suppliers, and resource limitations—the present study addresses these gaps by examining the combined effect of green procurement, ethical sourcing, supplier selection, and procurement governance on supply chain performance in tier-one supermarkets.

Conceptual Framework

The summary of the conceptual framework is presented in Figure 1

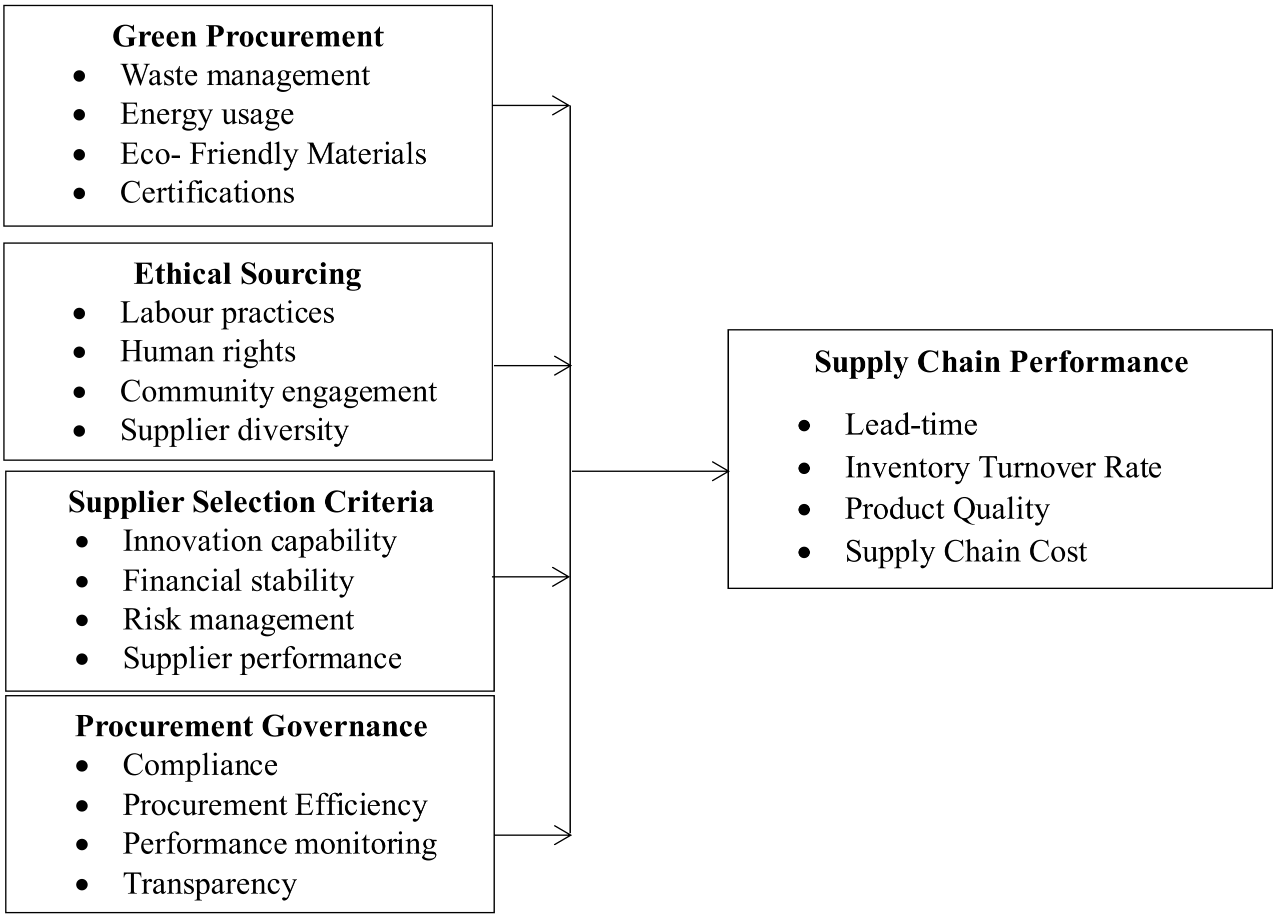

Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

This study adopted a descriptive research design to examine sustainable procurement practices and supply chain performance in Kiambu County supermarkets. The target population comprised all 106 licensed tier-one supermarkets, with heads of procurement serving as the unit of observation due to their direct involvement in supplier engagement and strategic sourcing decisions. A census approach was employed to eliminate sampling bias, ensuring all supermarkets were included in the study. Data were collected using structured questionnaires with Likert-scale items, administered both physically and electronically via Google Forms after obtaining NACOSTI clearance and informed consent from participants. A pilot study involving

11 supermarkets (10% of the population) was conducted to pre-test the instrument, with reliability assessed using Cronbach's Alpha (>0.7) and test-retest methods, while validity was examined through content, construct, criterion, and face validity checks involving expert review and alignment with theoretical frameworks.

Data analysis was conducted using SPSS, beginning with data cleaning to identify missing values and outliers, followed by descriptive statistics (means, standard deviations, frequencies) to summarize procurement practices and performance trends. Inferential statistics including Pearson correlation analysis measured the strength and direction of relationships between variables, while multiple linear regression assessed the combined and individual effects of green procurement, ethical sourcing, supplier selection, and procurement governance on supply chain performance. Ethical standards were strictly upheld throughout the research process, with anonymity and confidentiality guaranteed through removal of personal identifiers and secure data storage. Participants were fully informed about the study's purpose, their right to withdraw, and intended use of findings, ensuring engagement remained respectful, voluntary, and professionally conducted in accordance with academic integrity standards.

RESULTS AND ANALYSIS

This chapter presents the findings of the study based on data collected from procurement heads in tier-one supermarkets in Kiambu County. The results and analysis are discussed in sections covering response rate, descriptive findings, correlation analysis, and regression results.

Response Rate

Out of 106 questionnaires distributed to procurement heads in Kiambu supermarkets, 86 were returned, yielding an 81.13% response rate. This exceeds the 70% threshold considered sufficient for generalizability, ensuring the study achieved robust data collection effectiveness suitable for reliable statistical analysis and meaningful conclusions (Creswell & Creswell, 2018).

Table 1: Response rate

Category	Frequency	Percent
Response	86	81.13
Non response	20	13.87
Total	**106**	**100**

Summary of Descriptive Findings

The descriptive findings of the study are summarized in table 2 below;

Table 2: Descriptive findings

Variable	Statement	Mean	Std. Dev
Green Procurement	Clear policies exist for sustainable waste management	4.58	0.64
	Effective waste management lowers supply chain costs	4.40	0.49
	Packaging waste reduction is emphasized	4.31	0.99
	Procurement prioritizes eco-friendly materials	4.37	0.83
	Certified eco-friendly products are preferred	4.42	0.80
Ethical Sourcing	Suppliers follow fair and ethical labor practices	4.45	0.63
	We avoid sourcing from exploitative/child labor suppliers	4.43	0.93
	Suppliers commit to human rights principles	4.43	0.56
	Supplier diversity is a key factor in vendor selection	4.31	0.88
	Procurement promotes minority/women-owned businesses	4.26	0.83
Supplier Selection	Suppliers evaluated for innovative/sustainable solutions	4.44	0.75
	Supplier's financial stability assessed before contracting	4.37	0.60
	Long-term dependable suppliers are prioritized	4.44	0.68
	Risk mitigation strategies agreed before contracting	4.65	0.59
	Regular evaluation on delivery, quality, responsiveness	4.38	0.92
Procurement Governance	Procurement follows laws and policies strictly	4.37	0.92
	Procurement processes are regularly audited	4.37	1.06
	Procurement outcomes evaluated with clear metrics	4.43	0.76
	Procurement openness to all stakeholders maintained	4.55	0.68
	Regular feedback improves procurement accountability	4.55	0.70
Supply Chain Performance	Inventory turnover is regularly assessed and improved	4.64	0.67
	Products consistently meet supermarket quality standards	4.70	0.51
	Suppliers deliver goods that meet quality expectations	4.70	0.46
	Supply chain expenses regularly evaluated for cost-savings	4.56	0.86
	Suppliers consistently deliver within agreed timelines	4.38	0.91

The descriptive findings indicate that sustainable procurement practices are strongly embedded in Kiambu supermarkets, with mean scores consistently above 4.0 across all variables. Green procurement was highly rated, particularly for sustainable waste policies (M = 4.58) and preference for certified eco-friendly products (M = 4.42). Ethical sourcing emphasized fair labor practices (M = 4.45) and supplier human rights commitments (M = 4.43), though diversity scored slightly lower (M = 4.26). Procurement governance practices demonstrated high alignment with accountability, with openness (M = 4.55) and feedback mechanisms (M = 4.55) ranking highest. Supply chain performance showed the strongest scores overall, with consistent product quality (M = 4.70) and inventory turnover (M = 4.64) leading.

Correlation analysis

Correlation analysis is a statistical method used to assess the strength and direction of linear relationships between two variables (Field, 2018). This study employed the Pearson correlation coefficient, which ranges between –1 and +1, where positive values indicate a direct relationship and negative values an inverse one. The results are in table 3 below

Table 3: Correlation results

		Green Procurement	Ethical Sourcing	Supplier selection criteria	Procurement Governance	Supply Chain Performance
Green Procurement	Pearson Correlation	1.000				
	Sig. (2-tailed)					
	N	86				
Ethical Sourcing	Pearson Correlation	.372**	1.000			
	Sig. (2-tailed)	.000				
	N	86	86			
Supplier selection criteria	Pearson Correlation	.155	.322**	1.000		
	Sig. (2-tailed)	.153	.002			
	N	86	86	86		
Procurement Governance	Pearson Correlation	.299**	.498**	.128	1.000	
	Sig. (2-tailed)	.005	.000	.242		
	N	86	86	86	86	
Supply Chain Performance	Pearson Correlation	.368**	.459**	.416**	.388**	1.000
	Sig. (2-tailed)	.003	.000	.002	.000	
	N	86	86	86	86	86

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The correlation results reveal that sustainable procurement practices significantly enhance supermarket supply chain performance. Green procurement showed a positive correlation ($r = .368$, $p = .003$), indicating that waste reduction, eco-certifications, and environmentally conscious sourcing improve efficiency and lower costs, supporting Bor (2021), who found that green practices substantially improved supply chain outcomes in Kenyan firms. Ethical sourcing demonstrated the strongest relationship with performance ($r = .459$, $p < .01$), suggesting that fair labor standards and compliance monitoring foster reliability and responsiveness, which aligns with Kim et al. (2023), who observed reduced procurement risks and greater supplier dependability in ethically managed supply chains.

Supplier selection criteria were also significant ($r = .416$, $p = .002$), emphasizing the value of assessing suppliers based on innovation, financial stability, and risk preparedness, consistent with Wachiuri (2018), who similarly linked supplier evaluation to improved organizational outcomes. Procurement governance correlated positively ($r = .388$, $p < .01$), demonstrating that compliance, transparency, and accountability strengthen supply chain effectiveness, as confirmed by Chemoiywo (2023), who found that governance-driven transparency improved efficiency by 40%. Collectively, these findings highlight that adopting integrated sustainable procurement practices fosters efficiency, reliability, and resilience in Kiambu supermarkets.

Regression results

The study conducted a multiple linear regression analysis to assess the combined influence of green procurement, ethical sourcing, supplier selection criteria, and procurement governance on supply chain performance in tier-one supermarkets in Kiambu County, Kenya. The analysis results are presented in three key tables: model summary, ANOVA, and regression coefficients, which together explain the strength, significance, and contribution of each predictor in the model, with the coefficient of determination (R^2) and adjusted R^2 indicating how well the four independent variables collectively explain the variance in supply chain performance. The model summary results are presented in Table 4

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.847[a]	.717	.704	6.50868

a. Predictors: (Constant), Green Procurement, Ethical Sourcing, supplier selection criteria, Procurement Governance

The R value of 0.847 indicates a strong positive correlation between the independent variables and supply chain performance. The R^2 value of 0.717 shows that approximately 71.7% of the variation in supply chain performance can be explained by the four predictors combined. This high explanatory power implies that procurement practices significantly influence supply chain performance. Table 5 presents the ANOVA results, which test the overall statistical significance of the regression model.

Table 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8714.475	4	2178.619	51.427	.000[b]
	Residual	3431.397	81	42.363		
	Total	12145.872	85			

a. Dependent Variable: Supply Chain Performance

b. Predictors: (Constant), Green Procurement, Ethical Sourcing, supplier selection criteria, Procurement Governance

The F-statistic of 51.427 and a p-value of 0.000 indicate that the overall model is statistically significant at the 0.05 level. This confirms that the combination of green procurement, ethical sourcing, supplier selection criteria, and procurement governance significantly predicts supply chain performance. The large F-value demonstrates that the predictors, when taken together, explain a substantial portion of the variance, and the model is robust and unlikely due to random chance. Table 6 presents the regression coefficients for each independent variable, showing their individual contribution to supply chain performance.

Table 6: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.836	17.606		2.944	.004
	Green Procurement	1.760	.253	.447	6.950	.000
	Ethical Sourcing	1.266	.148	.640	8.556	.000
	Supplier selection criteria	2.355	.201	.733	11.727	.000
	Procurement Governance	.866	.186	.357	4.641	.000

a. Dependent Variable: Supply Chain Performance

The values can be substituted to the model as follows;

$$Y = 51.836 + 1.760X1 + 1.266X2 + 2.355X3 + 0.866X4$$

Where; Y = Supply Chain Performance (composite index); β_0 = Intercept; X_1 = Green Procurement; X_2 = Ethical Sourcing; X_3 = Supplier Selection Criteria; X_4 = Procurement Governance; β_1, β_2, β_3, β_4 = Coefficients for each independent variable and ε = Error term

The study found that all four sustainable procurement practices significantly predict supply chain performance, with varying degrees of influence. The constant ($B = 51.836$, $p = 0.004$) represents the baseline level of supply chain performance when all predictors are held at zero. Green procurement has a statistically significant effect ($B = 1.760$, $\beta = 0.447$, $t = 6.950$, $p = 0.000$), indicating that sustainability-focused practices such as waste reduction and eco-certification directly improve supply chain efficiency. Ethical sourcing is also significant ($B = 1.266$, $\beta = 0.640$, $t = 8.556$, $p = 0.000$), showing that practices ensuring fair labor and supplier compliance substantially enhance performance reliability and stakeholder trust. Supplier selection criteria emerge as the most influential predictor ($B = 2.355$, $\beta = 0.733$, $t = 11.727$, $p = 0.000$), suggesting that evaluating suppliers based on innovation, risk management, and financial stability strongly improves operational consistency and responsiveness. Procurement governance also significantly contributes ($B = 0.866$, $\beta = 0.357$, $t = 4.641$, $p = 0.000$), demonstrating that adherence to transparent, accountable, and policy-driven procurement processes strengthens supply chain performance. Therefore, all four predictors have positive and statistically significant effects on supply chain performance, with supplier selection criteria being the most influential.

CONCLUSIONS

The study concludes that sustainable procurement practices significantly shape supply chain performance among tier-one supermarkets in Kiambu County. Green procurement, including waste reduction and eco-certifications, reduces operational costs and improves efficiency. Ethical sourcing enhances resilience through fair labor standards and compliance monitoring that foster trust and dependability. Supplier selection criteria emerged as the most influential predictor, with financial stability, innovation, and risk management ensuring consistent delivery and responsiveness. Procurement governance, characterized by transparency and accountability, reinforces procurement integrity. These findings demonstrate that procurement practices function as strategic enablers of competitiveness and sustainability rather than mere administrative processes.

Theoretically, the results affirm the Resource-Based View by demonstrating how procurement practices serve as unique competitive resources that enhance efficiency. The findings align with Institutional Theory by showing how regulatory conformity and adherence to social norms reinforce organizational legitimacy and strengthen supply chain performance. Stakeholder Theory is validated as supermarkets prioritizing social and environmental responsibilities benefit from increased consumer trust and stronger supplier relationships. Agency Theory is supported through evidence that governance mechanisms reduce opportunism and align procurement decisions with organizational goals. These theoretical implications situate sustainable procurement within Kenya's retail context, demonstrating that both tangible and intangible practices directly strengthen resilience and efficiency in dynamic retail supply chains.

RECOMMENDATIONS

This study recommends that supermarkets in Kiambu County strengthen sustainable procurement by embedding clear internal practices across green procurement, ethical sourcing, supplier evaluation, and governance. Managers should adopt eco-friendly purchasing by integrating environmental checklists into contracts, auditing lifecycle energy use, and setting measurable waste reduction targets. Ethical sourcing should be enhanced through supplier codes of conduct, annual compliance checks, and diversifying vendors by engaging minority- and locally-owned businesses. To strengthen supplier selection, standardized scoring systems should be introduced, prioritizing innovation, financial stability, and risk management, with regular reviews and incentive-based contracts to encourage creative solutions. Pre-contract risk assessments should also be formalized to minimize disruptions. For governance, digital procurement tools, regular audits, transparent communication dashboards, and structured feedback loops should be adopted to improve efficiency, accountability, and transparency. Collectively, these recommendations emphasize practical, in-house measures that enhance supply chain resilience, efficiency, and sustainability without reliance on external regulation.

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