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Influence of Green Supply Chain Practices on Performance of Selected County Governments in Kenya's Lake Region Economic Block

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ABSTRACT

Purpose: The study focuses on determining the influence of green supply chain practices on Performance of selected County Governments in Lake Nyanza Region. The specific objectives of the study were as indicated below;-to establish the influence of green procurement, sustainable logistics, waste disposal and eco design practices on Performance of selected County Governments in Kenya.

Methodology: The unit of analysis was six Counties in Lake Nyanza Region. The study targeted 120 employees. The unit of observation was procurement, and supply chain specialist in the six Counties. The study employed the Israel (2010) formula to get a sample size of 92 respondents. The questionnaire was administered by dropping and picking.

Findings: The analysis reveals that all four green supply chain practices positively influence the performance of County Governments. Specifically, sustainable logistics was found to have the most substantial impact, followed by eco design, green procurement, and waste disposal. These practices contribute to improved operational efficiency, cost reduction, environmental sustainability, and enhanced service delivery. The study concludes that the adoption of green supply chain practices is crucial for improving the overall performance of County Governments in Kenya.

Unique Contribution to Theory, Policy and Practice: This research provides valuable insights into how County Governments can enhance their performance by integrating sustainability into their supply chain practices, thereby contributing to more effective and responsible governance. Recommendations include the development of clear green procurement policies, investment in sustainable logistics systems, enhanced waste management frameworks, and the promotion of eco design in procurement planning. Furthermore, the study suggests areas for further research, such as exploring the barriers to implementing green practices and conducting longitudinal studies to assess their long-term impact.

Keywords: *Eco Design, Green Procurement, Green, Sustainable Logistics*

INTRODUCTION

Background of the Study

Green supply chain structures are attractive since they make the administration more receptive to proactive strategies that make them competitive. Green supply chain is increasing enthusiasm among specialists and practitioners of supply chain management and operations. The developing significance of green supply chain is driven primarily by the raising destruction of the environment, for instance decreasing raw material assets, flooding waste sites and expanding level of contamination. On the other side, it isn't just about being friendly to the environment; it is about great negotiating prudence and higher profit. Toke, Gupta and Dandekar (2010) note that the green procurement incorporates buying and in-bound logistics like materials administration, generation, outbound logistics and reverse logistics.

There is an ongoing debate regarding the effectiveness of various environmental practices designed to meet the complex and conflicting environmental pressures from various sources in improving the competitiveness of business concerns. This debate has received a growing attention in recent years among researchers and practitioners. Specifically, much attention has been given to the ability of such practices in enabling firms to achieve adequate levels of environmental and economic performances (Zeng *et al.*, 2010; Zhu *et al.*, 2012).

Green supply chain alludes to the manner by which advancements in green purchasing and industrial purchasing might be considered given the environment (Sung Rha, 2010). Green supply chain means to adjust marketing performance with natural issues. To address with difficulties, for example, Kumar and Chandrakar (2012) note that conservation of energy and decrease in pollution, undertakings have endeavored to green their supply chains, that is, to make systems of suppliers to buy products that are environmental friendly or to create agreeable ways to deal with decrease in waste and operational efficiencies. With regard to environmental performance management, coercive pressure provides a minimum level of compliance to requirements amongst suppliers but tends to be limited in its capacity to encourage advanced performance outcomes such as new knowledge or innovation. Collaboration on environmental performance issues tends to increase the range and complexity of possible outcomes such as new products or technologies but requires a far greater level of involvement for customers and suppliers (Simpson & Samson, 2010).

Statement of the Problem

Public sector organizations, including county governments in Kenya, are under increasing pressure to adopt environmentally sustainable practices due to global climate change, rising environmental degradation, and regulatory obligations. Green supply chain practices such as green procurement, sustainable logistics, waste management, and eco-design have been recognized as essential in enhancing not only environmental sustainability but also institutional performance. However, the

integration of such practices in the public sector, particularly at the county level, remains inconsistent and underdeveloped. In the Lake Nyanza Region, counties such as Kisumu, Homa Bay, Migori, and Siaya, face mounting environmental challenges, including poor waste disposal, pollution of Lake Victoria, and inefficient logistics systems. According to the National Environment Management Authority (NEMA, 2023), over 60% of counties in the region lack effective waste management systems, contributing significantly to environmental pollution and public health concerns. Despite existing policies advocating for sustainable public procurement and green practices, only 25% of county procurement activities in Kenya incorporate environmental considerations (Kenya Institute of Supplies Management, 2022).

Previous studies have established a positive relationship between green supply chain practices and organizational performance. For instance, Mutheu and Otieno (2020), in a study on Kenyan parastatals, found that green procurement positively influenced operational efficiency and compliance. Similarly, Nyaga et al. (2021) demonstrated that sustainable logistics contributed to reduced costs and enhanced service delivery in public institutions. However, most of these studies have focused on national-level institutions or the private sector, leaving a gap in understanding how green supply chain practices affect performance at the devolved government level, especially in the context of the Lake Nyanza Region.

The lack of empirical data and localized studies has hindered the development of targeted green policies at the county level. This study, therefore, seeks to bridge this gap by investigating the influence of green supply chain practices on the performance of selected County Governments in the Lake Nyanza Region, with the goal of informing policy and practice toward sustainable development. Research indicates that adopting green practices has several benefits. Therefore, the study sought to establish the influence of green supply chain practices on performance of devolved units in selected County Governments in Kenya.

General Objective of the Study

The study focused on determining the influence of green supply chain practices on Performance of selected County Governments in Lake Nyanza Region.

Specific Objectives of the Study

The specific objectives of the study were as indicated below;-

i. To establish the influence of green procurement on Performance of selected County Governments in Lake Nyanza Region.
ii. To determine the influence of sustainable logistics on Performance of selected County Governments in Lake Nyanza Region.
iii. To find out the influence of waste disposal on Performance of selected County Governments in Lake Nyanza Region.

iv. To assess the influence of eco design practices on Performance of selected County Governments in Lake Nyanza Region.

LITERATURE REVIEW

Theoretical Review

Contingency Management Theory

The contingency way to deal with administration was impacted by two earlier investigation programs trying to pinpoint compelling leadership conduct. Amid the 1950s, analysts at Ohio State University regulated broad polls estimating a scope of conceivable pioneer practices in different organizational settings. Contingency theory is a way to deal with the investigation of organizational behavior in which clarifications are offered regarding how unforeseen factors, for example, innovation, culture and the external environment impact the plan and capacity of firms. The assumption underlying contingency theory is that no single type of management process is equally applicable to all organizations (Reid & Smith, 2000; Chenhall, 2003; Woods, 2009).

Albeit various arrangements of leadership practices were initially distinguished in light of these surveys, two sorts of practices ended up being particularly normal of viable pioneers. The first is consideration. These are pioneer practices that incorporate building great compatibility and relational connections and demonstrating backing and worry for subordinates. Second are behaviors that initiate structure. Environmental consideration is emerging as an important contingent consideration today (Wanjohi, 2016). This implies that it had an important success factor for organizations. As such, managers need to work on establishing a fit with the environment. This theory was adopted in understanding the relationship between waste disposal and performance of devolved governments.

Theory of Innovation

This theory is attributed to Schumpeter (1934, 1939, 1943). The theory had low status until end of 1970s. The economic depression of the 1970s and the subsequent boom lead to the conclusion that innovations are the determinants responsible for most growth when an economic boom begins in a period of depression (Freeman, 1974). Earlier on, Schumpeter (1943) had credited benefit to dynamic changes coming about because of a development. To begin with he takes an industrialist shut economy which is in a stationary balance. This harmony is portrayed by what Schumpeter calls a "roundabout stream" which keeps on rehashing itself for ever. In such a static state, there is superbly focused balance. The cost of every item just equivalents its cost of creation and there is no benefit. Just exogenous elements like climate conditions can cause changes in the roundabout stream position. In the roundabout stream position products are being delivered at a steady rate. This normal work is being performed by the salaried directors. The business visionary exasperates the channels of this roundabout stream by the presentation of an advancement. In this way

Schumpeter doles out the part of a trailblazer not to the industrialist but rather to the business person. He underscores making new esteem creating exercises as a method for scanning for higher benefits from development. Such esteem age can be tapped from selection of the green condition.

Sundbo (1998) argues that innovations are important to the national economy during periods of depression. He adds that it is also important to individual organizations because it portends potential for expansion and future profits. Being innovative includes adopting issues of current global concern in to business processes in a manner that gets the business competitive advantage According to Wanjohi (2016) the current global concern is climate change and its effects to human lives and livelihoods. Well managed organizations are innovatively adopting the green environment in their processes to gain competitive advantage. This theory was applicable in understanding the influence green procurement on performance of devolved units.

Natural Resource Based View Theory

Scientists in the field of administration have long comprehended that upper hand relies upon the match between particular inside (hierarchical) capacities and evolving outside (natural) conditions. According to Hart (2015) it was only in the 1950s that a bonafide theory, known as the resource-based view of the firm, emerged, articulating the relationships among firm resources, capabilities, and competitive advantage. The match between internal and external environments according to Porters (1995) leads to competitive advantage due to cost leadership and quality differentiation. Afterwards, it was noted that "competing for the future" is an important measure of competitive advantage. According to Hamel and Prahaland (2014) the firm must not only strategize on current/ short term profitability and competitive advantage but also the long term ones. The asset based view sets that upper hand can be managed just as the abilities making it are upheld by assets that are not effectively repeated by contenders (Hart, 2015). Recent environmental challenges facing the world have led to scrutiny of human economic activity, especially manufacturing. Projected population growth in the next 40 years will lead to accelerated production. According to Gore (2012), this growth might not be ecologically sustainable. Such production will stress the earth's natural systems beyond recovery (Commoner, 2012). As such, economic activity must change or risk irreversible damage to the planet's basic ecological systems. This theory was fundamental towards identifying the influence of eco-design practices on performance of devolved units.

Stakeholder Theory

As per Freeman (2014), a partner is any gathering or person who can influence or is influenced by the accomplishment of the association's targets. Miles (2006) states that the association itself ought to be thought of as gathering of partners and the reason for the association ought to deal with their interests, needs and perspectives. Freeman (2014) characterizes partners as those gatherings who are fundamental to the survival and accomplishment of the enterprise. The hypothesis is to a limited extent worried about the impact of an extensive variety of on-screen characters in an

association's situation on authoritative execution the same number of analysts have contended (Donaldson & Preston, 2005; Freeman, 2014). Not at all like conventional information yield models of association execution, has partner hypothesis underlined the cooperation between intrigue gatherings, for example, the association's workers, individuals from the social group, investors, and other united associations, in deciding association execution. This theory was helpful in the contribution of stakeholders in green procurement. This theory is as well aid in understanding the influence of green procurement and sustainable logistics on performance of devolved Governments.

Conceptual Framework

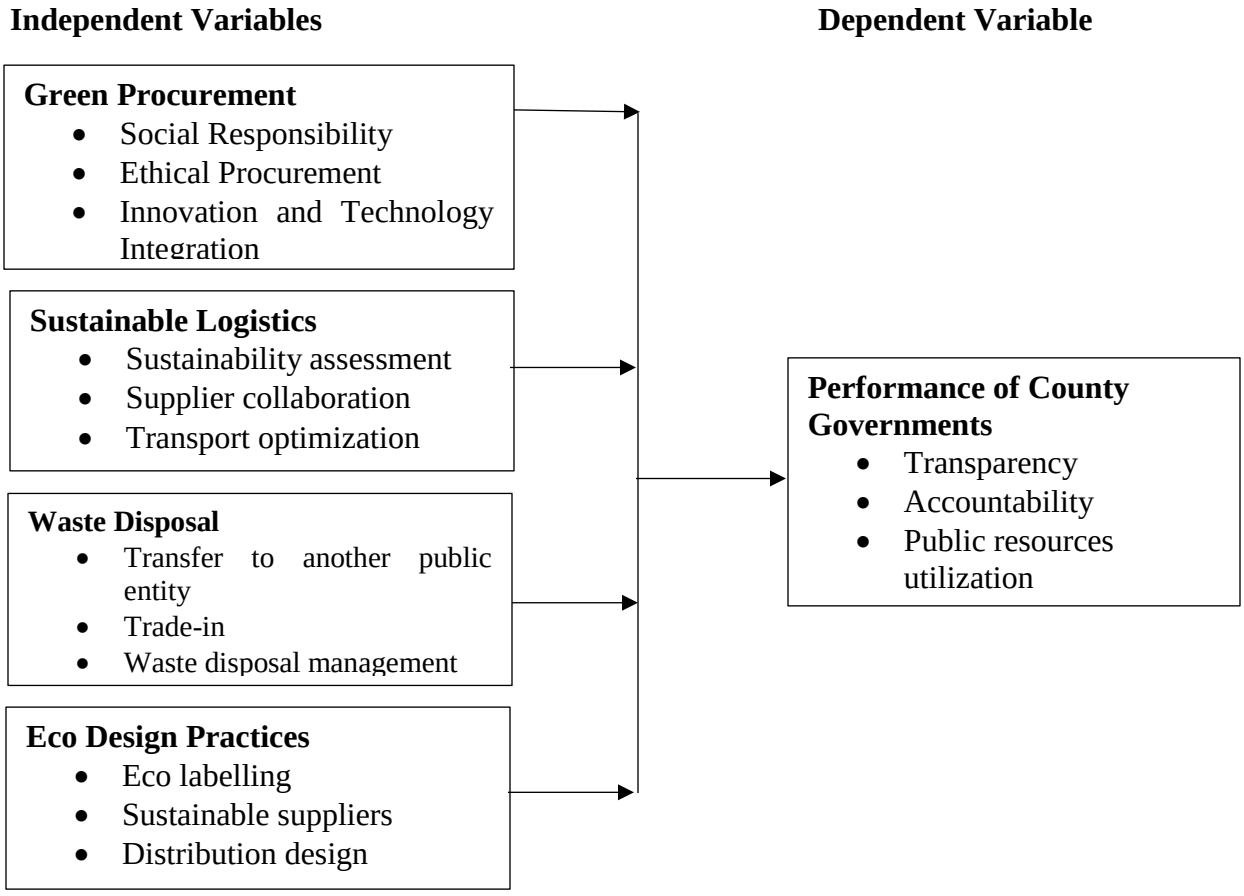

Figure 1: Conceptual Framework

Empirical Review

Karim et al (2017) did a study in Saudi Arabia entitled, does green procurement improve organizational performance? The research utilized a conceptual model where information was gathered by a questionnaire survey. The study was quantitative in nature. It employed correlations well as multivariate regression-based path analysis to explore the association between systematic

random samples of 400 purchasing managers placed in public as well as private entities across many fields. The result showed that combined sustainable procurement (SP) practices exhibited a significant relationship with the firm's performance. Further, the findings showed no evidence of significant direct effect combined measures of SP ecofriendly practices on the financial performance but there was an indirect effect of SP practices through the company nonfinancial performance on financial performance which showed a statistically significant relationship. However, the study used quantitative method as opposed to a mixed methodology.

A study conducted in Kenya by Omusebe et al (2017) looked at impact of green procurement on the performance as well as effective purchasing administration in the public Sector, and established that implementing green purchasing improves performance in areas of costs, lead time as well as quality that are critical in purchasing administration in organizations. The study was majorly a review of literature on the said indicators. However, the study did not use multiple regression. Study was not physical research. Did not test hypotheses using inferential statistics.

Logistics Innovation is pivotal for enhancing operational efficiency and sustainability in supply chain management. It involves the adoption of advanced technologies and practices that drive improvements across logistics processes. This includes integrating digital solutions, renewable energy sources, and cutting-edge transportation technologies to optimize performance and reduce environmental impact. Paperless Documentation Systems represent a significant advancement in logistics by digitizing all documentation processes. This approach eliminates the need for physical paperwork, reducing paper consumption and associated waste. By transitioning to electronic documentation, motor dealerships in Nairobi can streamline their operations, improve accuracy in order processing and inventory management, and enhance communication with suppliers and customers. The reduction in paper use not only contributes to environmental sustainability but also improves overall operational efficiency (Govindan, 2022).

This involves the use of Carbon dioxide refrigeration systems, treatment, and control of post-combustion emissions, use of alternative fuels (e.g., cleaner fuels), treatment and recycling of hazardous wastes, process optimization implementation of waste – to -energy process, waste reduction, reuse and recycling approaches (Mugabe, 2013). Waste management control may as well involve source reduction the recycle and re-use waste management programs focuses on management of waste after it has been created. On the same note, source reduction focuses on the prevention or the reduction of wastage during production rather than managing it after it has been generated with the aim of efficiently utilizing resources by examining how business is conducted, how materials are used, and what products are purchased (Mugabe, 2013). Carbon dioxide capture and reduction of hydrofluorocarbons (HFC) and perfluorocarbons (PFC) and the use of carbon dioxide refrigeration systems (Colicchia et al., 2011). Lean production practices and total quality management can lead to improved environmental performances and reduction of wastes and

hazardous emissions to human beings and environment, e.g., solid and liquid wastes, air emissions and noise (King & Lenox, 2001).

Eco Design is a GSCM practice which requires that manufacturers design products that minimize consumption of materials and energy that facilitate the reuse recycle and recovery of component materials and parts, and that avoid or reduce the use of hazardous products within the manufacturing process Green Jr et al., 2012). Eco design and Packaging included packaging design for reduced environmental impact, packaging re-cycle or re-use and use of biodegradable materials (Green Jr et al., 2012).

According to Jumadi and Zailani (2010), a reduction in the product environmental impact may be achieved not only through appropriate product design, but also a proper use by consumers. In this sense, consumers must become more aware of the environmental implications related to the products they are using, so that sustainability may be perceived as a value-added element for the society, as well as a distinguishing feature for companies (Jumadi & Zailani, 2010). Two main areas main identified addressing the available strategies towards sustainable product design and use, namely product design, and packaging design. As for product design, possible strategies lie in the reduction of product environmental impact within the supply chain and reduction of product environmental impact in the consumer use (Jumadi & Zailani, 2010).

RESEARCH METHODOLOGY

This study adopted a descriptive survey design with quantitative and qualitative approaches. The target population consisted of employees from each of the departments of procurement and the chief procurement officers who are the managers of the respective procurement departments of Migori, Siaya, Kisumu and Homabay County Government. The unit of analysis was six Counties in Lake Nyanza Region. The study targeted 120 employees. The unit of observation was procurement, and supply chain specialist in the four Counties. The study adopted stratified random sampling to get 92 respondents. The primary source of data collection method used in the study was by questionnaire In this study the collected data was analysed both qualitatively and quantitatively (Kombo & Tromp, 2003). Statistical Package for Social Sciences (SPSS, Version 26) was used to obtain descriptive analysis and inferential analysis. Descriptive statistics was presented in form of means and standard deviation while regression analysis was presented in form of regression and correlation methods. This study used qualitative method to analyse and interpret data as the study to be involved use of qualitative information.

DATA ANALYSIS AND DISCUSSION

Response Rate

The study targeted a sample size of 92 respondents drawn from selected County Governments in the Lake Nyanza Region. Out of the 92 questionnaires distributed, 82 were duly filled and returned,

representing a response rate of 89%. This high response rate was achieved through follow-up calls, reminders, and the use of both physical and digital data collection methods.

Descriptive Analysis

Descriptive statistics offer a simple yet effective way to summarize large datasets by providing measures of central tendency (mean) and dispersion (standard deviation).

Descriptive Analysis of Green Procurement

Table 1: Descriptive Analysis of Green Procurement

Statement	SD	D	N	A	SA	Mean	St. Dev
The County Government ensures responsibility for green issues in several processes, acquiring procedures, and plans.	4 (4.9%)	5 (6.1%)	10 (12.2%)	35 (42.7%)	28 (34.1%)	4.00	1.12
The ecological procurement gives assurance that bought items achieve sustainable characteristics.	3 (3.7%)	6 (7.3%)	8 (9.8%)	37 (45.1%)	28 (34.1%)	4.02	1.08
The County Government adopts green procurement through collaborating with vendors.	2 (2.4%)	4 (4.9%)	9 (11.0%)	35 (42.7%)	32 (39.0%)	4.14	1.05
The County Government integrates environmental thinking into the buying process, allowing organizations to offer design specifications to providers that contain ecological concerns for eco-friendly purchased materials.	3 (3.7%)	7 (8.5%)	11 (13.4%)	35 (42.7%)	26 (31.7%)	3.98	1.09

The descriptive analysis indicates that the County Governments in the Lake Nyanza Region generally adopt green procurement practices, with strong support for the integration of ecological considerations into procurement procedures. The mean scores for all statements were above 3.5, suggesting that respondents perceive the counties as committed to sustainability. However, the variation in responses, indicated by the standard deviations, suggests that while the majority agree with these practices, there is still room for improvement, particularly in the areas of integrating environmental thinking into procurement specifications and ensuring full responsibility for green issues across all processes.

Descriptive Analysis of Sustainable Logistics

Table 2: Descriptive Analysis of Sustainable Logistics

Statement	SD	D	N	A	SA	Mean	Std. Dev
There is increased sustainability assessment to enhance procurement performance in the County Governments.	3 (3.7%)	5 (6.1%)	9 (11.0%)	37 (45.1%)	28 (34.1%)	4.02	1.06
There is increased supplier collaboration to enhance performance of devolved County Governments.	4 (4.9%)	6 (7.3%)	8 (9.8%)	35 (42.7%)	29 (35.4%)	4.03	1.09
There are clear transport optimization mechanisms to enhance performance of County Governments.	2 (2.4%)	4 (4.9%)	10 (12.2%)	38 (46.3%)	28 (34.1%)	4.12	1.03
Sustainable logistics leads to effectiveness in the procurement process.	3 (3.7%)	5 (6.1%)	10 (12.2%)	36 (43.9%)	28 (34.1%)	4.02	1.07

The descriptive analysis of sustainable logistics shows strong agreement that sustainability assessments, supplier collaboration, transport optimization mechanisms, and sustainable logistics all contribute significantly to enhancing the procurement performance of County Governments. The overall mean scores for all statements suggest that respondents view sustainable logistics as an essential factor for improving procurement outcomes in the counties. The relatively low standard deviations across all statements suggest a high level of consensus among the respondents.

Descriptive Analysis of Waste Disposal

Table 3: Descriptive Analysis of Waste Disposal

Statement	SD	D	N	A	SA	Mean	Std. Dev
There is enhanced transfer to another public entity for waste disposal management.	3 (3.7%)	5 (6.1%)	10 (12.2%)	38 (46.3%)	26 (31.7%)	4.02	1.04
Compliance agreements in waste disposal management are followed.	2 (2.4%)	4 (4.9%)	8 (9.8%)	37 (45.1%)	31 (37.8%)	4.10	1.02
There is proper adherence to waste disposal regulations in the County Government.	3 (3.7%)	6 (7.3%)	9 (11.0%)	36 (43.9%)	28 (34.1%)	4.02	1.06

The descriptive analysis of waste disposal reveals that County Governments are generally perceived to be following proper waste management practices, with strong adherence to regulations and compliance agreements. The respondents largely agree that waste management is effectively handled through collaboration with other public entities, contributing to improved procurement and operational outcomes.

Descriptive Analysis of Eco Design

Table 4: Descriptive Analysis of Eco Design

Statement	SD	D	N	A	SA	Mean	Std Dev
There are written policies supporting eco labelling.	3 (3.7%)	5 (6.1%)	9 (11.0%)	38 (46.3%)	27 (32.9%)	4.02	1.06
The County Government supports and embraces sustainable suppliers.	4 (4.9%)	6 (7.3%)	8 (9.8%)	35 (42.7%)	29 (35.4%)	4.04	1.08
There is adoption of eco design during distribution design and planning.	2 (2.4%)	4 (4.9%)	10 (12.2%)	38 (46.3%)	28 (34.1%)	4.12	1.03
The County Governments adopt eco design to enhance sustainable procurement.	3 (3.7%)	5 (6.1%)	8 (9.8%)	37 (45.1%)	29 (35.4%)	4.04	1.05

The descriptive analysis of eco design reveals strong agreement that County Governments are adopting eco design principles to enhance sustainable procurement. Respondents perceive that policies supporting eco labelling are in place, and there is a significant emphasis on engaging sustainable suppliers and integrating eco design into distribution planning. The overall mean scores indicate that respondents believe eco design is an essential aspect of sustainable procurement.

Descriptive Analysis of the Performance of County Governments

Table 5: Descriptive Analysis of the Performance of County Governments

Statement	SD	D	N	A	SA	Mean	Std Dev
The overall procurement performance in County Governments has improved.	2 (2.4%)	5 (6.1%)	8 (9.8%)	42 (51.2%)	25 (30.5%)	4.06	1.00
County Governments have increased their efficiency in resource utilization.	3 (3.7%)	4 (4.9%)	6 (7.3%)	40 (48.8%)	29 (35.4%)	4.13	0.98
The County Governments demonstrate a commitment to sustainability in procurement.	1 (1.2%)	4 (4.9%)	7 (8.5%)	40 (48.8%)	30 (36.6%)	4.14	0.95
The County Governments' procurement processes are now more transparent.	3 (3.7%)	5 (6.1%)	8 (9.8%)	41 (50.0%)	25 (30.5%)	4.04	1.02

The descriptive analysis of the performance of County Governments reveals that respondents generally perceive improvements in procurement performance, resource utilization, sustainability commitment, and transparency. The overall mean scores suggest that sustainable procurement practices are positively impacting the performance of County Governments. These findings suggest that the adoption of green procurement, sustainable logistics, waste disposal, and eco design is contributing to enhanced performance in County Governments.

Inferential Statistics

Pearson Correlation

Pearson's correlation coefficient (r) is a statistical measure that helps determine the strength and direction of a linear relationship between two variables. In this case, the study examined the relationship between the independent variables (green procurement, sustainable logistics, waste disposal, and eco design) and the dependent variable (performance of County Governments).

Table 6: Correlation

		Performance of County Governments
Green Procurement	Pearson Correlation	.52**
	Sig. (2-tailed)	.001
	N	82
Sustainable Logistics	Pearson Correlation	.63**
	Sig. (2-tailed)	.001
	N	82
Waste Disposal	Pearson Correlation	.47**
	Sig. (2-tailed)	.005
	N	82
Eco Design	Pearson Correlation	.59**
	Sig. (2-tailed)	.001
	N	82

The Pearson correlation analysis demonstrates that all the independent variables green procurement, sustainable logistics, waste disposal, and eco design have a positive relationship with the performance of County Governments. The strongest correlation is observed with sustainable logistics ($r = 0.63$), followed by eco design ($r = 0.59$), green procurement ($r = 0.52$), and waste disposal ($r = 0.47$). All these correlations are statistically significant ($p < 0.01$ or $p < 0.05$). These results suggest that the adoption of sustainable procurement practices, particularly sustainable logistics and eco design, positively affects the procurement performance of County Governments.

Regression Analysis

Regression analysis is used to examine the influence of independent variables on a dependent variable. In this study, the study examined how Green Procurement, Sustainable Logistics, Waste Disposal, and Eco Design influence the Performance of County Governments.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.738[a]	.545	.0521	.466

a. Predictors: (Constant), Green Procurement, Sustainable Logistics, Waste Disposal, and Eco Design

R (0.738): Shows a strong positive correlation between the combination of the independent variables and performance of County Governments.

R Square (0.545): Indicates that 54.5% of the variation in performance is explained by the model (i.e., the four independent variables).

Adjusted R Square (0.521): Adjusts for the number of predictors in the model, confirming that approximately 52.1% of the variance in County performance is accounted for by green procurement, sustainable logistics, waste disposal, and eco design. Std. Error: Indicates the average distance that the observed values fall from the regression line (lower is better).

Table 8: ANOVA (Analysis of Variance)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.753	4	4.668	22.09	.000[b]
	Residual	15.482	78	.212		
	Total	34.435	82			

a. Dependent Variable: Performance of County Governments
b. Predictors: (Constant), Green Procurement, Sustainable Logistics, Waste Disposal, and Eco Design

The F-statistic (22.09) and p-value (0.000) indicate that the model is statistically significant overall, i.e., at least one independent variable significantly predicts performance. Since $p < 0.05$, the model is a good fit for the data.

Table 9: Regression Coefficients

Predictor	Unstandardized B	Std. Error	Beta (β)	t	Sig. (p-value)
(Constant)	1.052	0.312	-	3.37	0.001
Green Procurement	0.231	0.088	0.219	2.63	0.010
Sustainable Logistics	0.312	0.092	0.293	3.39	0.001
Waste Disposal	0.174	0.085	0.172	2.05	0.044
Eco Design	0.269	0.082	0.258	3.28	0.002

$Y = 1.052+ 0.231X1 + 0.312X2+ 0.174X3+0.269X4$

Green Procurement had regression coefficient of 0.231, $p = 0.010$. This indicates that unit increase in green procurement practices is associated with a 0.231 increase in County Government performance, holding other variables constant. The relationship is statistically significant ($p < 0.05$). Testa et al. (2012) found that green procurement leads to cost savings and improved efficiency, which supports this positive contribution to performance.

Sustainable Logistics had regression coefficient of 0.312, $p = 0.001$ this shows that. Sustainable logistics has the strongest effect on performance. A unit increase in sustainable logistics increases performance by 0.312 units. The significance level ($p = 0.001$) shows a highly significant impact.

Srivastava (2007) emphasized the crucial role of logistics optimization in improving supply chain performance, confirming this result.

Waste Disposal had 0.174, p = 0.044. This implies that Waste disposal has a moderate positive effect on performance. A unit increase in proper waste disposal practices leads to a 0.174 increase in performance. The p-value = 0.044 confirms it is statistically significant. According to Mena et al. (2014), well-managed waste systems enhance operational environments and compliance, improving public service delivery.

Eco Design had regression coefficient of 0.269, p = 0.002. Eco design significantly improves performance, with a unit increase leading to a 0.269 improvement. The p = 0.002 confirms statistical significance. Bakker et al. (2014) showed eco design practices improve sustainability and long-term performance, supporting these findings.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the findings of the study, several key conclusions can be drawn regarding the influence of green supply chain practices on the performance of selected County Governments in the Lake Nyanza Region:

The study concludes that green procurement contributes positively to the performance of County Governments. Through the integration of environmentally friendly purchasing practices, such as working with sustainable suppliers and considering ecological impacts during procurement, counties are able to improve efficiency, reduce environmental harm, and uphold responsible governance.

Sustainable logistics was identified as a significant factor in improving procurement performance. The adoption of practices such as transportation optimization, sustainability assessments, and enhanced supplier collaboration ensures timely delivery, cost-effectiveness, and better service provision. Counties that invest in sustainable logistics experience more streamlined operations and improved outcomes in procurement.

Although waste disposal showed a moderate effect, it remains an important contributor to county performance. Effective waste management practices, including adherence to compliance agreements and structured disposal procedures, create cleaner work environments, reduce health risks, and promote responsible resource use, which collectively support better public service delivery.

The study further concludes that eco design is an essential component of sustainable procurement. County Governments that embrace eco labelling, support sustainable suppliers, and incorporate environmental thinking in design and distribution planning demonstrate improved long-term

performance. These practices embed sustainability into the core of procurement strategies, enhancing effectiveness and accountability.

The study concludes that green supply chain practices are not only relevant but crucial to enhancing the performance of County Governments. When integrated effectively, these practices lead to greater efficiency, sustainability, and improved public trust in procurement systems. Counties that prioritize these practices are better positioned to meet both environmental goals and service delivery objectives.

Recommendations

Based on the study findings and conclusions, the following recommendations are proposed to enhance the performance of County Governments through the adoption of green supply chain practices:

County Governments should strengthen and formalize their commitment to green procurement by developing and enforcing clear environmental procurement policies. These policies should mandate the consideration of sustainability criteria when selecting suppliers and products. Counties should also build the capacity of procurement officers through training and awareness programs on green procurement standards and best practices. Additionally, collaboration with suppliers that provide eco-friendly goods and services should be encouraged to promote a sustainable supply chain.

To enhance performance through logistics, County Governments should invest in sustainable logistics systems, including route optimization technologies and eco-efficient transportation methods. Stronger partnerships with logistics providers who prioritize environmental stewardship can improve efficiency and reduce the carbon footprint of supply chain activities. Counties should also establish performance benchmarks for logistics processes and continually assess their sustainability to ensure continuous improvement and cost savings.

The study recommends that County Governments implement comprehensive waste management frameworks tailored to procurement activities. These should include policies for safe disposal, recycling, and waste reduction at every stage of the supply chain. Public-private partnerships with waste management companies could be leveraged to improve disposal practices and compliance with environmental regulations. Additionally, regular training and monitoring should be done to ensure that procurement-related waste is handled responsibly.

Counties should actively promote eco design principles by supporting the adoption of environmentally friendly designs in procurement planning and distribution. This includes integrating eco-labelling requirements into tenders and encouraging suppliers to adopt cleaner production techniques.

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