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Green Procurement Practices and Supply Chain Performance of Hotels in Maasai Mara Game Reserve, Kenya

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Abstract

Purpose: this study sought to examine the influence of green procurement practices on performance of hotels at Maasai Mara. The specific objectives were to establish the influence of renewable energy use, supplier assessment, reverse logistics and recycling on performance of hotels in Maasai Mara.

Methodology: The study adopted the descriptive survey design. The study targeted 95 respondents from 17 major hotels at the Maasai Mara. Census sampling was used to consider the whole population. Data was collected using structured questionnaire administered through drop and pick method. Validity was achieved through content validity while reliability was achieved through Cronbach alpha. Descriptive statistics and inferential statistics were used during data analysis with aid of SPSS. The results are presented in tables and figures.

Findings: The study results showed that renewable energy use, supplier assessment, reverse logistics and recycling positively contributes to supply chain performance of hotels.

Unique Contribution to Theory Practice and Policy: The study recommends that hotel management should train staff on the value of renewable energy use as this may improve their environmental performance. Firms should also adopt reverse logistics practices in order to increase the performance of the supply chains. Supplier assessments are also necessary for sustainable supply chain performance. Lastly, hotels should deal with the main challenges in recycling to improve their environmental standing.

Keywords: *Green procurement practices, Sustainable sourcing, Eco-friendly purchasing, Environmental sustainability*

INTRODUCTION

Green procurement has emerged globally as a strategic response to environmental challenges such as climate change, hazardous waste, and ozone depletion, with developed economies embedding it into sustainability frameworks through life-cycle costing and supplier audits. The hospitality sector, particularly hotels, is a high-impact industry due to its intensive resource consumption, prompting global chains to adopt green procurement for both accountability and competitiveness. Regionally, African countries like Ghana and South Africa have initiated municipal-level green procurement efforts, though implementation remains uneven due to policy and capacity gaps. In Kenya, regulatory bodies such as NEMA and the Kenya Tourism Board have promoted green procurement in the hospitality sector, yet uptake remains limited, especially in carbon reduction and recycling. Despite the Tourism Regulatory Authority's sustainability-based hotel classification system, empirical evidence linking green procurement to supply chain performance particularly in ecologically sensitive areas like Maasai Mara is scarce. This study sought to fill that gap by examining the influence of green procurement practices on hotel supply chain outcomes in the Maasai Mara Game Reserve.

Problem Statement

Organizations increasingly expect improved Supply Chain Performance (SCP) to enhance competitiveness by reducing inefficiencies such as poor delivery times, low-quality outputs, and resource wastage (Lehyani et al., 2021; Flora, 2025). However, in Kenya's hospitality sector, rising energy and water demands, solid waste burdens, and environmental pollution especially around Lake Victoria, have escalated operational costs and threatened livelihoods dependent on natural resources (Kenya Tourism Board, 2017; GoK, 2017). Hotels failing to meet environmental standards risk losing business amid global climate advocacy. While prior studies have explored green procurement adoption and its conceptual contribution to performance (Islam et al., 2017; Nderitu & Ngugi, 2014; Omusebe et al., 2017), none have directly examined its impact on supply chain performance in the hotel industry, particularly in Kisumu or Maasai Mara. This study aimed to fill that gap by investigating how green procurement practices influence supply chain outcomes among hotels in Maasai Mara.

LITERATURE REVIEW

Theoretical Framework

The study's theoretical framework integrated three foundational perspectives to explain how green procurement influences supply chain performance in the hotel industry. The Natural-Resource-Based View (Hart, 1995) positions environmental capabilities like pollution prevention and eco-design as strategic tools for enhancing efficiency and sustainability. Bloom's Taxonomy of Learning (Bloom, 1956) highlights the role of staff training in developing the cognitive skills necessary to implement green initiatives effectively, reinforcing the importance of education in procurement outcomes. Institutional Theory (Scott, 2004) contextualizes the influence of external pressures such as regulatory bodies and societal expectations on organizational behavior, particularly in Kenya's hospitality sector. Together, these theories provide a comprehensive and contextually grounded framework for analyzing green procurement practices in hotels.

Conceptual Framework

A conceptual framework serves as a visual and narrative roadmap that outlines the relationship between the study's variables. This is the conceptual framework of the green procurement practices and organization performance. The segment comprises of independent variables (renewable energy use, supplier assessment, reverse logistics and recycling) as well as the dependent variable (Supply chain performance). The figure 1 below represents the conceptual.

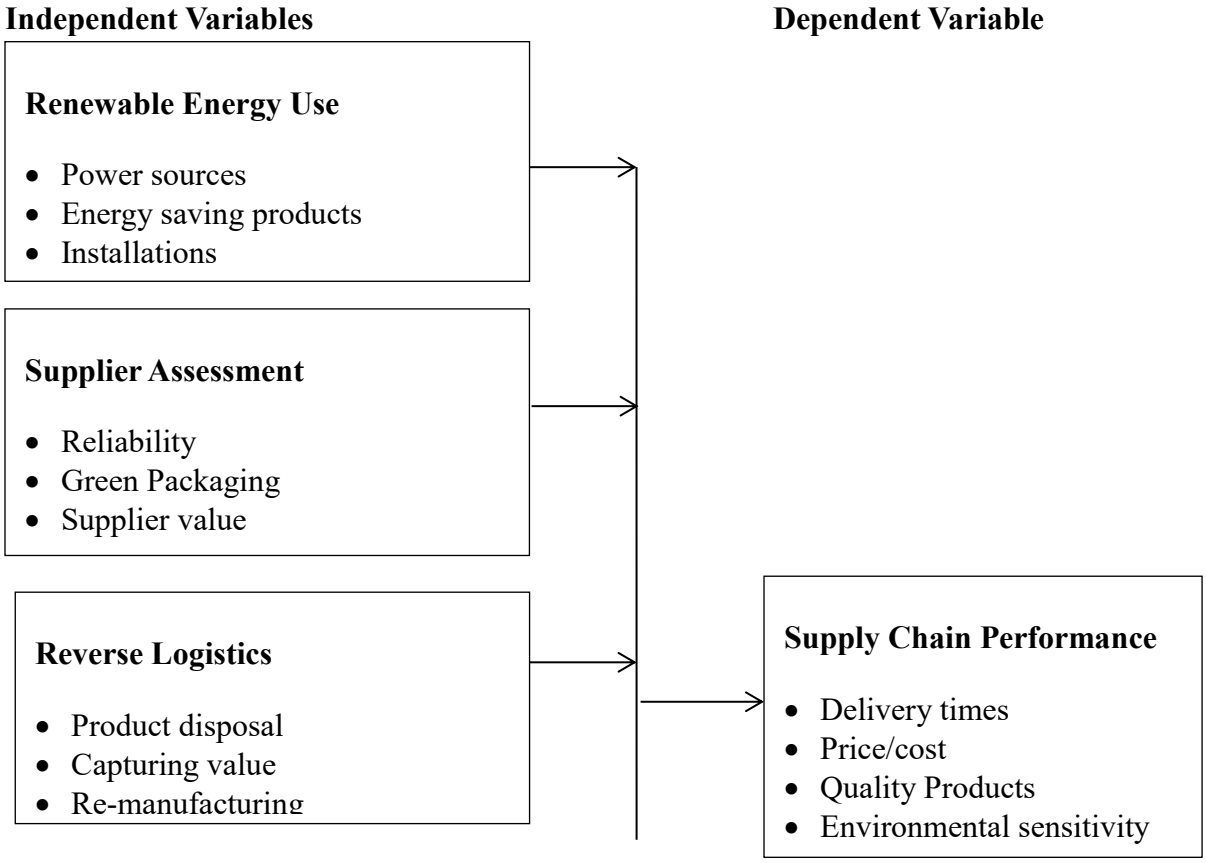

Figure 1: Conceptual Framework

Empirical Review

Malkus and Kozina (2023) asserted that the concept of the description of negotiations within reverse logistics cooperation is a preliminary approach to the issues under consideration, since they are relatively new, not fully recognized in theory and research, as well as in economic practice. Therefore, it is necessary strive to enrich and broaden his concept, mainly by searching for more precise characteristics of the considered features of the negotiations under consideration. It is also necessary planned to conduct comparative empirical research in order to verify the usefulness of the reverse logistics concept.

Chari, Zivanai, and Kandenga (2016) investigated the factors influencing successful implementation of green procurement within Zimbabwe's manufacturing sector, using a descriptive research design and data collected through questionnaires and business journals. Their

findings highlighted staff training as a critical enabler, though its impact varied across different organizational levels. While the study offers valuable insights into the role of human capacity in green procurement adoption, it was limited to the manufacturing context and did not explore how these practices affect supply chain performance. Moreover, it did not address the hospitality industry or environmentally sensitive regions such as Maasai Mara. This gap underscores the need for a sector-specific analysis that examines the influence of green procurement—particularly training, supplier assessment, reverse logistics, and recycling—on supply chain performance in Kenyan hotels.

Mishra and Singh (2023) emphasized the role of reverse logistics in recovering value from End-of-Life products, reducing pollution, and lowering raw material costs through reuse. While their study provided a strategic roadmap for environmentally responsible management, it focused on manufacturing and e-commerce contexts, not hospitality. This leaves a gap in understanding how reverse logistics affects supply chain performance in tourism-driven regions like Maasai Mara, which the current study aims to address.

Taken together, these studies provide foundational insights into green procurement but fall short of linking these practices to supply chain performance in the Kenyan hotel context. They either focus on financial metrics, manufacturing firms, or general adoption trends without delving into how green procurement influences operational efficiency, supplier relationships, and environmental compliance in tourism-driven regions. The current study addresses this gap by examining the influence of green procurement practices on supply chain performance among hotels in Maasai Mara, thereby contributing sector-specific, contextually grounded evidence to the literature.

METHODOLOGY

The study employed a descriptive survey design to ensure comprehensive and unbiased analysis of green procurement practices and their impact on supply chain performance. The target population comprised 95 senior management staff from 17 three-star and above hotels in Maasai Mara National Park, selected through census sampling. Key respondents included procurement officers, finance staff, and committee members with relevant expertise. Data was collected using structured questionnaires based on a Likert scale, following ethical clearance from Jomo Kenyatta University of Agriculture and Technology. A pilot study involving 9 respondents from Kisumu hotels tested the instrument's validity and reliability. Data was analyzed using SPSS through descriptive statistics and multiple regression to examine the relationship between green

procurement and organizational performance. In addition, multiple regression analysis was conducted to establish the relationship between green procurement practices and organization performance. The regression model was as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

RESULTS

Return Rate

A total of 79 respondents out of the sampled 95 respondents returned completely filled questionnaires representing a response rate of 83.2%, which supports Mugenda and Mugenda (2003) assertion that a response rate of 70 % and above is excellent especially when considering generalizability of study findings to a wider population.

Descriptive Analysis

Renewable Energy Use

This section analyzes and presents data relating to the first objective of the study; the influence of renewable energy use on supply chain performance of hotels in Maasai Mara.

Table 1: Renewable Energy Use

Renewable Energy Use	1	2	3	4	5	Mean	SD
My organization uses energy sources such as hydropower, solar energy or wind power	5.1%(4)	8.9%(7)	39.2%(31)	40.5%(32)	6.3%(5)	3.34	.918
My organization has adopted the use of energy saving equipment such as bulbs.	7.6%(6)	6.3%(5)	44.3%(35)	31.6%(25)	10.1%(8)	3.30	1.005
The hotel trains all staff on green energy and expects them to use these in their workstations	5.1%(4)	7.6%(6)	29.1%(23)	43%(34)	15.2%(12)	3.56	1.010
Employees are motivated to participate in energy conservation	7.6%(6)	19%(15)	41.8%(33)	26.6%(21)	5.1%(4)	3.03	.987
My organization has adopted green procurement learning framework and its regularly reviewed to reflect new policies	3.8%(3)	16.5%(13)	26.6%(21)	41.8%(33)	11.4%(9)	3.41	1.019
Environmental culture of the organization promotes environmental responsibility.	8.9%(7)	15.2%(12)	15.2%(12)	48.1%(38)	12.7%(10)	3.41	1.160
The organization promotes safer, cleaner purchasing	1.3%(1)	2.5%(2)	40.5%(32)	39.2%(31)	16.5%(13)	3.67	.828

The study assessed renewable energy use through six indicators, revealing generally neutral responses from hotel staff, with weighted means ranging from 3.03 to 3.67. The highest-rated item was the promotion of safer, cleaner purchasing (mean = 3.67), while the lowest was employee motivation toward energy conservation (mean = 3.03). This suggests that while institutional

messaging around green procurement is relatively strong, internal staff engagement remains weak highlighting the need for hotels to intensify employee sensitization on energy-saving practices.

Supplier assessment

This analyzes and presents data relating to the second objective of the study; influence of supplier assessment on performance of hotels at the Maasai Mara.

Table 2: Supplier Assessment

Supplier Assessment	1	2	3	4	5	Mean	SD
Our suppliers are assessed based on their ability to supply green products and hence safe environment	3.8%(3)	19%(15)	7.6%(6)	39.2%(31)	30.4%(24)	3.73	1.2
Green supplier evaluation system is necessary for firm productivity	11.4%(9)	19%(15)	12.7%(10)	43%(34)	13.9%(11)	3.29	1.2
Our suppliers are assessed based on their ability to control pollution and hence a safe environment	12.7%(10)	24.1%(19)	19%(15)	38%(30)	6.3%(5)	3.01	1.1
Our supplier selection and evaluation ensures they provides an effective green packaging	6.3%(5)	7.6%(6)	19%(15)	43%(34)	24.1%(19)	3.71	1.1
The hotel has supplier evaluation criteria in place for green procurement	15.2%(12)	13.9%(11)	29.1%(23)	27.8%(22)	13.9%(11)	3.11	1.2
Preference is given to the multidimensional methods during supplier assessment	10.1%(8)	13.9%(11)	34.2%(27)	34.2%(27)	7.6%(6)	3.15	1.0
The suppliers are always required to provide proof of their green practices in order to be considered for supply.	10.1%(8)	16.5%(13)	25.3%(20)	38%(30)	10.1%(8)	3.22	1.1

The findings indicate that a majority of respondents (69.6%) affirmed that suppliers are assessed based on their ability to supply green products, supported by a mean of 3.73 despite notable variability. While 56.9% agreed that a green supplier evaluation system is necessary for firm productivity (mean = 3.29), only a small majority assessed suppliers for pollution control, with a mean of 3.0 suggesting inconsistency. Supplier selection for green packaging was more positively

rated (mean = 3.71), yet uncertainty remained about the existence of formal evaluation criteria, with only partial agreement (mean = 3.11). Additionally, some suppliers are required to provide proof of green practices, reflected in a moderate mean of 3.22.

Reverse logistic

This analyzed data relating to the third objective of the study; the influence of reverse logistics on performance of hotels at the Maasai Mara.

Table 3: Reverse Logistics

Reverse Logistics	1	2	3	4	5	Mean	SD
My organization recovers materials that are harmful to environment	1.3%(1)	2.5%(2)	21.5%(17)	21.5%(17)	53.2%(42)	4.23	0.96
My organization returns back its products to suppliers for recycling, retaining of materials, or remanufacturing	2.5%(2)	25.3%(20)	16.5%(13)	43%(34)	12.7%(10)	3.38	1.08
My organization collects back used packaging from customers for reuse or recycling	1.3%(1)	8.9%(7)	13.9%(11)	51.9%(41)	24.1%(19)	3.89	0.92
My organization returns back its packaging to suppliers for reuse or recycling	1.3%(1)	13.9%(11)	10.1%(8)	51.9%(41)	22.8%(18)	3.81	0.99
My organization collects back used products from customers for recycling, reclamation of materials, or reuse	1.3%(1)	12.7%(10)	10.1%(8)	62%(49)	13.9%(11)	3.75	0.90
My organization recovers waste materials and used up materials	5.1%(4)	11.4%(9)	8.9%(7)	57%(45)	17.7%(14)	3.71	1.05

The findings show strong support for environmental recovery practices among hotels in Maasai Mara, with a majority (53.2%) strongly agreeing that harmful materials are recovered, reflected in a high mean of 4.23. However, fewer respondents strongly agreed that products are returned to suppliers for recycling or remanufacturing. Hotels were more consistent in collecting used packaging and products from customers for reuse or recycling, with mean scores ranging from 3.71 to 3.89. Overall, while recovery efforts are evident, variability in responses suggests room for improvement in supplier-related recycling practices.

Recycling

The fourth objective of the study was to assess the influence of recycling on supply chain performance of hotels at Maasai Mara Park.

Table 4: Descriptive Results on Recycling

Statements	SD	D	N	A	SA	Mean	Std. Dev.
The firm encourages proper waste collection through recycling systems that	22.2%	14.9%	2.7%	29.4%	30.8%	3.31	1.57
The firm allows for efficient processing to maximize resource recovery	20.4%	13.6%	4.1%	31.2%	30.8%	3.38	1.53
Sorting of waste is done to ensure that different types of recyclable materials (such as plastics, glass, paper, and metals)	22.6%	15.4%	9.5%	24.0%	28.5%	3.20	1.55
The firm has implemented procurement policies that prioritize products made from	21.3%	19.0%	6.3%	27.1%	26.2%	3.18	1.52
The firm fosters collaboration between manufacturers, recyclers, and other supply chain stakeholders	25.3%	23.1%	5.4%	26.2%	19.9%	2.92	1.51
The firm raises consumer awareness about the importance of recycling and the benefits of using recycled products.	21.3%	12.2%	0.5%	29.0%	37.1%	3.48	1.58
Average						**3.25**	**1.31**

The study assessed recycling practices using six statements, with respondents generally neutral on their influence on hotel supply chain performance, as indicated by weighted means ranging from 2.92 to 3.48. The highest-rated item was the firm's effort to raise consumer awareness about recycling (mean = 3.48), while the lowest was fostering collaboration among manufacturers, recyclers, and supply chain stakeholders (mean = 2.92), suggesting limited stakeholder engagement in recycling initiatives.

Supply Chain Performance

Supply Chain performance in this study was adopted as dependent variable. It was measured using customer satisfaction, market share, revenue, quality products, repeat and new purchase. The details of descriptive analysis are presented in the table below.

Table 5: Supply Chain Performance

Performance	1	2	3	4	5	Mean	SD
Level of customer satisfaction has increased due to green procurement practices	1.3%(1)	10.1%(8)	24.1%(19)	50.6%(40)	13.9%(11)	3.66	0.89
Level of market share has improved with introduction green procurement practices	2.5%(2)	7.6%(6)	40.5%(32)	36.7%(29)	12.7%(10)	3.49	0.90
Level of cost reduction has improved with introduction of green procurement	0.0	19%(15)	31.6%(25)	43%(34)	6.3%(5)	3.87	0.86
Green procurement enhances organizational operations improving organizational performance	0.0	13.9%(11)	39.2%(31)	41.8%(33)	3.8%(3)	3.83	0.81
The quality of procured products and services contributes to organizations performance	0.0	11.4%(9)	27.8%(22)	38%(30)	20.3%(16)	4.2	1.02
Green procurement has resulted to increase in repeat purchase of our products and services	0.0	6.3%(5)	45.6%(36)	31.6%(25)	8.9%(7)	3.88	0.99
Green procurement has resulted to new customers growth	0.0	17.7%(14)	40.5%(32)	25.3%(20)	8.9%(7)	3.80	1.05
Green procurement practices has led to staff growth	0.0	11.4%(9)	46.8%(37)	26.6%(21)	12.7%(10)	3.75	0.93

The findings indicate that green procurement practices have positively influenced several performance dimensions in hotels, with 64.5% of respondents affirming increased customer satisfaction (mean = 3.66) and 49.4% noting improved market share. Cost reduction was also

acknowledged by 49.3% of respondents, while 45.6% agreed that organizational operations had improved (mean = 3.83). The quality of procured goods and services was strongly linked to performance, supported by a high mean of 4.2. However, perceptions around repeat purchases, new customer growth, and staff expansion were more mixed, with significant portions of respondents undecided, though moderate agreement suggests emerging benefits in these areas.

Linear Regressions

Influence of Renewable Energy Use on Performance

The study's first objective examined the influence of renewable energy use on hotel supply chain performance, revealing that 18.5% of performance variation is explained by green trainings, with the remaining 81.5% attributed to other factors. The relationship was statistically significant ($F(1,78) = 17.470$, $p = 0.000$), and regression analysis showed a positive effect ($\beta = 0.459$, $p < .01$), indicating that a unit increase in renewable energy use leads to a 0.459 improvement in supply chain performance. The simple linear regression equation for direct influence of renewable energy use on supply chain performance of hotels is;

Supply chain Performance of hotels= ***1.879+ 0.459*** Renewable Energy Use

Table 6: Influence of Renewable Energy Use on Performance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430[a]	.185	.174	.5510459

a. Predictors: (Constant), Renewable Energy Use
b. Dependent Variable: Supply chain Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.305	1	5.305	17.470	.000[b]
	Residual	23.381	77	.304		
	Total	28.686	78			

a. Dependent Variable: Supply chain performance
b. Predictors: (Constant), Renewable Energy Use

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.879	.365		5.150	.000
	Green Training	.459	.110	.430	4.180	.000

a. Dependent Variable: Performance

Influence of Supplier assessment on Performance

The study's second objective examined the influence of supplier assessment on hotel performance in Maasai Mara, revealing that supplier assessments explain 33.2% of the variation in supply chain performance ($R^2 = 0.332$), with the remaining 66.8% attributed to other factors. The relationship was statistically significant ($F(1,78) = 38.345$, $p = 0.000$), indicating that supplier evaluation plays a meaningful role in enhancing hotel supply chain outcomes.

Table 7: Influence of Supplier assessment on performance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.577[a]	.332	.324	.4986954

a. Predictors: (Constant), Supplier Assessment

b. Dependent Variable: Performance of Hotels

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	9.536	1	9.536	38.345	.000[b]
Residual	19.150	77	.249		
Total	28.686	78			

a. Dependent Variable: Performance

b. Predictors: (Constant), Supplier Assessment

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.523	.305		4.986	.000
Supplier Assessment	.526	.085	.577	6.192	.000

a. Dependent Variable: Supply chain Performance

Further, regression results using unstandardized beta coefficients show that there exists a positive and significant effect of supplier assessment on supply chain performance of hotels in Maasai Mara. (*β=**0.526**); significant at p<.01*). This implies that a single increase in Supplier assessments leads to 0.526 increase in performance of hotels. The simple linear regression equation for direct influence of supplier assessment on performance of hotels is;

(ii) Supply Chain Performance of hotels= ***1.523*** + ***0.526*** Supplier assessment

Influence of Reverse logistics on Performance

The study's third objective assessed the influence of reverse logistics on hotel supply chain performance in Maasai Mara, revealing that 36.9% of performance variation is explained by reverse logistics ($R^2 = 0.369$), with the remaining 63.1% attributed to other factors. The effect was statistically significant ($F(1,78) = 38.345$, $p = 0.000$), and regression analysis showed a positive relationship ($\beta = 0.438$), indicating that a unit increase in reverse logistics leads to a 0.438 improvement in hotel performance.

The simple linear regression equation for direct influence of reverse logistic on performance of hotels is;

(iii) Supply Chain performance of hotels= ***1.935*** + ***0.438*** Reverse logistics

Table 8: Influence of Reverse logistics on performance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608[a]	.369	.361	.4847455

a. Predictors: (Constant), Reverse Logistic

b. Dependent Variable: Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.593	1	10.593	45.080	.000[b]
	Residual	18.093	77	.235		
	Total	28.686	78			

a. Dependent Variable: Performance

b. Predictors: (Constant), Reverse Logistic

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.935	.222		8.700	.000
Reverse Logistic	.438	.065	.608	6.714	.000

a. Dependent Variable: Organization Performance

Multiple Regression Analysis

Multiple Linear regression analysis was computed because regression model assumptions of normality, linearity, independence and multicollinearity were fulfilled. That is, multiple regression analysis was computed to assess the combined influence of four independent variables (renewable energy use, supplier assessment, reverse logistics and recycling) on supply chain performance of hotels in Maasai Mara.

Table 9: Model Summary and Significance of the Model

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.693[a]	.481	.460	.4456239	1.956

a. Predictors: (Constant), Renewable energy use, reverse Logistics, Supplier Assessment, recycling

b. Dependent Variable: Performance

ANOVA[a]

Model		Sum Squares	ofDf	Mean Square	F	Sig.
1	Regression	13.793	3	4.598	23.152	.000[b]
	Residual	14.894	75	.199		
	Total	28.686	78			

a. Dependent Variable: Performance

b. Predictors: (Constant), Reverse Logistics, Renewable Energy Use, Supplier Assessment, Recycling

From table 9, model 1 show combined regression results for influence of four independent variables on the dependent variable (supply chain performance of hotels.). The result show R^2 = 0. 481; which a good model, thus the model explains 48.1% of the variations in supply chain performance of hotels. The F statistic is 23.152 significant at $p<0.01$. This implies that the independent variables in the study model are indeed different from each other and therefore influence the dependent variable in varied ways, thus confirming the relevance of running multiple regressions.

Table 10: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.838	.350		2.392	.019
	Renewable Energy Use	.207	.097	.194	2.122	.037
	Supplier Assessment	.292	.092	.321	3.165	.002
	Reverse Logistic	.253	.076	.350	3.330	.001
	Recycling	.233	.078	.331	3.126	.003

a. Dependent Variable: Organization Performance

From the values of unstandardized regression coefficients (B) in Table 4.13, all the three independent variables (renewable energy use; β = .207 at $p<0.01$; Supplier assessment; β = 0.292 at $p<0.01$; Reverse logistics; β = 0.243 at $p<0.0$; *Recycling* β = 0.233 at $p<0.03$ were significant. Therefore, the multiple regression equation for overall influence of the four significant independent variables on supply chain performance of hotels in Maasai Mara is;

(vi) $Y= 0.838 +0.207X_1 + 0.292X_2 +0.243X_3 +0.233X_4$

Where;

Y= Supply Chain Performance of hotels in Maasai Mara, X_1= Renewable Energy Use, X_2= Supplier assessment, X_3= Reverse logistic, $X4$ = Recycling

The study found that green procurement practices significantly and positively influence supply chain performance in hotels, with a baseline performance score of 0.838 (p = 0.019) when all four factors are absent. Renewable energy use emerged as a key contributor, with a coefficient of B = 0.207 (p = 0.037), indicating that even when controlling for other variables, a unit increase in renewable energy use leads to a 0.207 improvement in performance. These findings align with prior research by Chari et al. (2016) and Nderitu and Ngugi (2014), all of whom emphasized the importance of staff training and competence in driving successful green procurement outcomes.

Supplier assessment also showed a strong positive effect on performance (B = 0.292, p = 0.002), reinforcing its strategic role in green supply chains. Reverse logistics followed closely with a significant coefficient of B = 0.253 (p = 0.001), confirming its impact on operational efficiency.

These results are consistent with studies by Muttimos (2014), Kabergey & Richu (2015), and Maeke (2017), which linked reverse logistics to improved performance in manufacturing and energy sectors. Supporting literature by Liao and Rittscher (2017) further validated the importance of supplier evaluation and green criteria in enhancing organizational outcomes and environmental compliance.

Testing Null Hypotheses

H_{01}: Renewable energy use has no significant influence on supply chain performance of hotels in Maasai Mara

B Unstandardized Coefficient results: ($B_1 = 207$; $p=0.000 < 0.05$)

Verdict: The null hypothesis **H_{01}** was rejected.

Results interpretation: H_A: Renewable energy use has significant influence on supply chain performance of hotels in Maasai Mara

H_{02}: Supplier assessment has no significant influence on supply chain performance of hotels in Maasai Mara

B Unstandardized Coefficient results: ($B_2 = 292$; $p=0.000 < 0.05$)

Verdict: The null hypothesis **H_{02}** was rejected.

Results interpretation: H_A: Supplier Assessment has no significant influence on supply chain performance of hotels in Maasai Mara

H_{03}: Reverse logistic has no significant influence on supply chain performance of hotels in Maasai Mara

B Unstandardized Coefficient results: ($B_3 = 253$; $p=0.000 < 0.05$)

Verdict: The null hypothesis **H_{03}** was rejected.

Results interpretation: H_{A3}: Reverse logistic has significant influence on supply chain performance of hotels in Maasai Mara

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Green procurement practices specifically renewable energy use, supplier assessment, reverse logistics, and recycling have a significant positive impact on supply chain performance in hotels within Maasai Mara. Renewable energy use and supplier assessment emerged as strong predictors of operational efficiency and environmental compliance, while reverse logistics contributed to cost reduction and sustainability through practices like product recovery and reuse. Although recycling showed positive influence, stakeholder collaboration appeared limited. These findings align with previous studies and validate the theoretical framework, offering practical insights for enhancing hotel performance through strategic green procurement integration.

Conclusions

The study concludes that renewable energy use significantly enhances hotel performance, yet many organizations lack a strong environmental culture and regular green training, limiting staff competence and the full potential of procurement improvements. Supplier assessment also emerged as a key performance driver, with hotels benefiting from evaluating suppliers based on their ability to deliver green products and packaging, though pollution control criteria are inconsistently applied. Reverse logistics practices such as recovering harmful materials and reusing packaging were found to positively influence performance, especially among hotels that have fully embraced these systems. Lastly, recycling was shown to contribute meaningfully to performance, though rising waste volumes and quality demands on secondary raw materials present growing challenges, highlighting the need for smarter, integrated supply chain solutions.

Recommendations

The study recommends that hotel management prioritize staff training on renewable energy use and recruit environmental experts to foster green awareness, supported by strategic training needs assessments. Adoption of reverse logistics particularly remanufacturing and recycling should be enhanced to optimize resource use, while supplier assessment must be guided by government policies that promote sustainability in the hospitality sector. To address recycling challenges such as waste impurities and poor disposal practices, hotels should collaborate with supply chain stakeholders to improve the quality and recovery of secondary raw materials.

Areas for further research

The study focused on green procurement and supply chain performance of service industry Kenya. Similar study should be done on green procurement practices and performance of other industries such as manufacturing industry. The study focused on performance against green procurement practices, however, due to global warming and climate change, it is imperative for future studies to examine relationship between green procurement practices and environmental performance.

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