

**INFLUENCE OF ENVIRONMENTALLY SUSTAINABLE SUPPLY CHAIN
PRACTICE ON OPERATIONAL PERFORMANCE OF HOTELS IN KENYA:
A CASE OF FIVE-STAR HOTELS IN NAIROBI COUNTY**

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ABSTRACT

Purpose: This study examined the influence of environmentally sustainable supply chain practice on the operational performance of five-star hotels in Nairobi County, Kenya.

Problem Statement: Environmental sustainability has become a strategic priority in the hospitality industry due to increasing regulatory pressures and heightened environmental awareness. Hotels are increasingly compelled to integrate sustainable practices within their supply chains to reduce environmental impacts, enhance efficiency, and support long-term competitiveness.

Methodology: The study adopted a descriptive-survey research design. The target population consisted of procurement and supply chain professionals and employees from hotel operations departments drawn from 21 five-star hotels in Nairobi County, giving a total target population of 84 respondents. Census sampling was adopted, and primary data were collected using structured questionnaires administered through a drop-and-pick method. Instrument reliability was assessed using Cronbach's alpha, while face validity was established through expert review. Data were analyzed using descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) version 31. Diagnostic tests confirmed that the assumptions of linear regression were satisfied, including linearity, normality, and absence of multicollinearity.

Results: A response rate of 71.42% was achieved. Descriptive results indicated moderate adoption of environmentally sustainable supply chain practice ($M = 3.51$, $SD = 0.70$). Pearson correlation analysis revealed a moderate and statistically significant positive relationship between environmentally sustainable supply chain practice and operational performance ($r = .522$, $p < .001$). Regression analysis further demonstrated that environmentally sustainable supply chain practice significantly predicted operational performance ($\beta = .522$, $p < .001$). The regression model explained 27.3% of the variance in operational performance ($R^2 = .273$). The findings suggest that practices such as green procurement, sustainable packaging, waste reduction, resource conservation, and environmentally responsible supply chain activities are associated with improved operational outcomes.

Conclusion: The study concludes that environmental sustainability practices such as green procurement, waste reduction, energy efficiency, environmentally friendly packaging, and compliance with environmental regulations positively contribute to operational efficiency, effectiveness, and productivity in five-star hotels.

Recommendations: The study recommends that hotel management strengthen environmental sustainability initiatives through enhanced green procurement policies, supplier environmental compliance assessment, and investment in sustainable operational technologies.

Keywords: *Environmental Sustainability, Environmentally Sustainable Supply Chain Practice, Operational Performance, Five-star hotels, Nairobi County*

1. INTRODUCTION

Environmental sustainability has become a major concern for organizations globally due to increasing climate change challenges, environmental degradation, stakeholder pressure, and stricter environmental regulations. Organizations are increasingly expected to integrate environmentally sustainable practices into their operational and supply chain systems to minimize environmental impact while enhancing organizational performance. According to Elkington (1998), organizations can no longer focus solely on economic gains but must balance environmental, social, and economic responsibilities to achieve sustainable competitiveness.

Within the hospitality industry, environmental sustainability has become particularly important because hotel operations are resource-intensive and generate significant environmental impacts through energy consumption, waste generation, water usage, transportation, and procurement activities. Hotels are therefore increasingly adopting environmentally sustainable supply chain practices such as green procurement, sustainable sourcing, environmentally friendly packaging, waste reduction, recycling systems, and energy conservation initiatives to improve operational performance and competitiveness (Zhu & Sarkis, 2004; Kumar & Rahman, 2016).

Globally, environmentally sustainable supply chain practices have been associated with improved operational efficiency, cost reduction, enhanced customer satisfaction, regulatory compliance, and stronger organizational reputation (Liu *et al.*, 2024). The hospitality industry has particularly experienced increasing demand from environmentally conscious customers

who prefer hotels that demonstrate sustainability commitment through eco-friendly operational practices. As a result, hotels increasingly integrate sustainability principles within procurement and supply chain management systems.

In Africa and other developing economies, environmental sustainability within hospitality operations continues to gain momentum due to increasing environmental awareness and government policy interventions. Studies indicate that sustainable supply chain practices improve operational effectiveness through resource optimization, waste minimization, and environmentally responsible procurement systems (Bilala & Odari, 2018; Barakagira & Paapa, 2023).

In Kenya, the hospitality industry plays a significant role in economic development, employment creation, and tourism growth. Nairobi County hosts a substantial concentration of five-star hotels, which are expected to maintain high operational standards and respond to increasing sustainability expectations. Despite increased emphasis on sustainability within the hospitality industry, empirical evidence on the influence of environmentally sustainable supply chain practices on operational performance among five-star hotels in Nairobi County remains limited. Most previous studies in Kenya have examined green supply chain management or sustainability practices more broadly rather than isolating environmentally sustainable supply chain practices and their relationship with operational performance in five-star hotels. This study therefore sought to assess the influence of environmentally sustainable supply chain practice on operational performance among five-star hotels in Nairobi County, Kenya.

2. STATEMENT OF THE PROBLEM

The hospitality industry is increasingly under pressure to reduce its environmental footprint while maintaining operational efficiency, service quality, and competitiveness. Five-star hotels consume substantial quantities of energy and water and generate waste through procurement, food and beverage operations, packaging, transportation, and other supply chain activities. Although hotels in Nairobi County have adopted various environmentally sustainable practices, evidence on whether and to what extent these practices translate into measurable operational performance remains limited. Existing Kenyan studies have examined green operations, procurement, and broader supply chain sustainability, but relatively little empirical attention has been given to the specific relationship between environmentally sustainable supply chain practices and operational performance among five-star hotels in Nairobi County. This study therefore addressed this contextual and empirical gap by examining whether environmentally sustainable supply chain practice significantly influence operational performance in five-star hotels in Nairobi County.

3. RESEARCH OBJECTIVE

To assess the influence of environmentally sustainable supply chain practice on operational performance of five-star hotels in Nairobi County, Kenya.

4. RESEARCH HYPOTHESIS

H0₁: There is no statistically significant influence of environmentally sustainable supply chain practice on operational performance of five-star hotels in Nairobi County, Kenya.

5. THEORETICAL REVIEW

The study was anchored on Closed-Loop Supply Chain Theory, developed by Guide Jr. and Van Wassenhove (2009), explains how organizations integrate forward and reverse material flows to recover value, reduce waste, and improve resource efficiency. Closed-loop supply chains incorporate activities such as reuse, recycling, recovery, remanufacturing, and responsible disposal, thereby extending the useful life of resources and reducing environmental impacts (Sarkis, 2003; Guide & Van Wassenhove, 2009). The theory is relevant to this study because environmentally sustainable supply chain practice in hotels similarly seek to minimize waste and improve the efficient use of resources across procurement, logistics, packaging, consumption, and disposal activities.

From a hotel operations perspective, closed-loop principles provide a mechanism through which environmental practices can generate operational benefits. Green procurement can encourage the selection of products with lower environmental impacts; sustainable packaging and recycling can reduce waste; and resource conservation can lower unnecessary consumption. Reverse logistics and recovery systems can also support the return, reuse, recycling, or responsible disposal of materials. These mechanisms suggest that environmental sustainability need not be viewed only as a compliance requirement but can also support efficiency, continuity, and productivity. However, the implementation of closed-loop systems may involve coordination challenges, technological requirements, and additional costs, particularly where recovery infrastructure and supplier capabilities are limited (Govindan *et al.*, 2015; Fleischmann *et al.*, 1997).

The theory is particularly applicable to five-star hotels because hotel supply chains involve continuous flows of food, beverages, packaging materials, cleaning supplies, water, energy, and other consumables. Integrating environmental considerations into supplier selection, procurement, packaging, resource use, waste management, and logistics can reduce resource losses and improve operational processes. Thus, Closed-Loop Supply Chain Theory provides a logical explanation for the expected positive relationship between environmentally sustainable supply chain practices and operational performance in five-star hotels.

The theory further recognizes that effective closed-loop systems require coordination among supply chain actors and organizational commitment to resource recovery and circularity. This study therefore uses the theory to explain how environmentally sustainable supply chain practices may contribute to operational performance through improved resource utilization, waste reduction, and more efficient supply chain processes. The theoretical expectation is that greater adoption of environmentally sustainable practices should be associated with better operational efficiency, effectiveness, and productivity.

6. EMPIRICAL REVIEW

Studies within the hospitality industry have equally demonstrated positive operational outcomes resulting from environmental sustainability initiatives. Kassim (2024) reported that hotels adopting environmentally sustainable operational systems experience improved customer satisfaction, reduced operational costs, and enhanced operational efficiency. Similarly, Barakagira and Paapa (2023) established that environmental sustainability practices contribute significantly to operational productivity and regulatory compliance within hospitality organizations. Environmentally sustainable supply chain practices such as sustainable sourcing, waste reduction, green procurement, energy efficiency, environmentally friendly packaging, recycling systems, and environmental compliance therefore remain important operational strategies for enhancing organizational performance within the hospitality industry.

Empirical studies have generally reported positive associations between green or sustainable supply chain practices and organizational performance. Zhu and Sarkis (2004) found that green supply chain management practices were associated with improved operational and environmental performance among early adopters. Kumar and Rahman (2016) further showed that buyer–supplier relationships and sustainability-oriented supply chain practices can support sustainability outcomes. More recent evidence also indicates that green procurement and supply chain sustainability are linked to improved firm performance (Liu *et al.*, 2024).

Within Kenya, Kimeu (2015) found that waste management practices were associated with improved operational performance in hotels in Mombasa County, while Bilala and Odari (2018) reported positive performance implications of sustainable supply chain management practices in a Kenyan manufacturing context. Kinyanjui (2014) similarly found that green supply chain management practices among hotels in Nairobi were associated with resource-saving outcomes. These studies provide contextual support for examining environmentally sustainable supply chain practices as a potential contributor to hotel operational performance.

Hospitality-focused evidence also supports the operational relevance of environmental sustainability. Kassim (2024) reported that environmental sustainability practices in hotels can support efficiency and other organizational outcomes, while Barakagira and Paapa (2023) found that green practices implemented by five-star hotels were relevant to environmental sustainability. Studies examining broader sustainability and operations management similarly indicate that sustainability-oriented practices can be linked to performance outcomes (Magon *et al.*, 2018; Yuanhao, 2024; Mwendwa, 2023). However, the available evidence remains fragmented across sectors and sustainability dimensions, creating a need for focused evidence on environmentally sustainable supply chain practices among five-star hotels in Nairobi County.

Taken together, prior studies suggest that green procurement, sustainable sourcing, waste reduction, recycling, resource conservation, environmentally friendly packaging, and responsible logistics can create operational benefits. Nevertheless, the literature provides

limited evidence that isolates environmentally sustainable supply chain practices and statistically tests their influence on operational performance within the five-star hotel context in Nairobi County. This study addresses that gap by examining the relationship using primary data from five-star hotels in the county.

7. CONCEPTUAL FRAMEWORK

The conceptual framework illustrates the relationship between environmentally sustainable supply chain practice and operational performance among five-star hotels in Nairobi County



Figure 1. Conceptual framework

8. RESEARCH METHODOLOGY

The study adopted a descriptive-survey research design. The target population comprised employees working within procurement, supply chain, and hotel operations departments in 21 five-star hotels located in Nairobi County. Census sampling was adopted, resulting in a target population of 84 respondents.

Primary data were collected using structured questionnaires utilizing a five-point Likert scale. Instrument reliability was assessed using Cronbach's alpha, with environmentally sustainable supply chain practice recording $\alpha = 0.84$ and operational performance recording $\alpha = 0.85$, indicating acceptable internal consistency. Face validity was established through expert review.

Data analysis involved descriptive statistics including means and standard deviations, while inferential statistics included Pearson correlation and linear regression analysis using SPSS version 31.

Several diagnostic tests were conducted to assess the robustness of the regression model. Linearity and homoscedasticity were assessed using the residuals-versus-fitted values plot. The residuals were randomly distributed around the zero line, with no discernible pattern, indicating that the assumptions of linearity and homoscedasticity were satisfied. Normality was assessed using the Normal P–P plot, where the points closely followed the diagonal line, suggesting that the residuals were approximately normally distributed. Independence of errors was assessed using the Durbin–Watson statistic, which was 2.265, indicating that the residuals were sufficiently independent. Multicollinearity was assessed using the Variance Inflation Factor (VIF) and tolerance values. The VIF value was 1.000, which is well below the commonly accepted threshold of 10, while the corresponding tolerance value 1.00 indicated no evidence of problematic multicollinearity. The diagnostic results confirmed that the assumptions underlying the regression analysis were adequately met.

The regression model adopted was:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where:

Y- Operational Performance (Efficiency, effectiveness, productivity)

X_1 - Environmentally sustainable supply chain practice

ε - Error term

β_0 = constant/intercept, representing the expected value of operational performance when environmentally sustainable supply chain practice is zero.

β_1 = regression coefficient, representing the expected change in operational performance associated with a one-unit change in environmentally sustainable supply chain practice.

9. RESULTS

Response Rate

The rate of response to the study was as follows, *Table 1* below.

Table 1. Response rate

Response rate	Sample size	Percentage
Returned questionnaires	60	71.42.%
Unreturned questionnaires	24	28.58%
Total	84	100%

The study achieved a response rate of 71.42%, where 60 out of 84 questionnaires were returned and considered adequate for analysis.

Descriptive Statistics

Environmentally Sustainable Supply Chain Practice

The descriptive findings for environmentally sustainable supply chain practice were as follows.

Table 2. Environmentally Sustainable Supply Chain Practice

STATEMENT	1	2	3	4	5	Mean	S.D
Environmental considerations are integrated into procurement decisions.	2 3.33%	6 10%	34 56.67%	16 26.67%	2 3.33%	3.17	0.78
The hotel encourages suppliers to use environmentally friendly packaging.	1 1.67%	3 5%	19 31.67%	29 48.33%	8 13.33%	3.67	0.84
Effective waste reduction and recycling practices are implemented in supply chain operations.	1 1.67%	3 5%	21 35%	32 53.33%	3 5%	3.55	0.75
Energy and water conservation practices are emphasized in handling supplies.	2 3.33%	3 5%	22 36.67%	28 46.67%	5 8.33%	3.52	0.85
The hotel gives preference to eco-friendly products and services.	1 1.67%	4 6.67%	20 33.33%	24 40%	11 18.33%	3.67	0.91
Average						3.51	0.70

Key: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

The results indicate a moderate level of adoption of environmentally sustainable supply chain practice among five-star hotels, with an overall mean of 3.51 (SD = 0.70). This suggests that environmental sustainability is incorporated into supply chain operations to a meaningful extent, particularly at the operational and supplier-practice level. Waste reduction and recycling (M = 3.55), energy and water conservation (M = 3.52), encouragement of environmentally friendly packaging among suppliers (M = 3.67), and preference for eco-friendly products and services (M = 3.67) recorded relatively higher ratings. However, the integration of environmental considerations into procurement decisions recorded the lowest mean (M = 3.17, SD = 0.78), with a substantial proportion of respondents remaining neutral. This indicates that formal integration of environmental criteria into procurement decision-making may be less developed than the implementation of operational environmental practices.

These findings align with studies indicating that environmental sustainability practices, including green procurement, energy efficiency, and compliance with local and international environmental standards, enhance operational performance by reducing costs, improving resource efficiency, and supporting regulatory compliance (Kimeu, 2015; Liu *et al.*, 2024;

Ngubane, 2024; Bilala & Odari, 2018). Moreover, adopting environmental practices such as sustainable sourcing and packaging contributes to operational effectiveness and customer satisfaction, consistent with evidence from the hospitality sector in Kenya and other regional studies (Kassim, 2024; Barakagira & Paapa, 2023).

These findings are consistent with the logic of Closed-Loop Supply Chain Theory, which emphasizes resource efficiency, recovery, waste reduction, reuse, and lifecycle thinking. The relatively low standard deviations indicate limited variation in respondents' perceptions and suggest relatively consistent views regarding the implementation of environmentally sustainable supply chain practices. However, the descriptive results should be interpreted as evidence of respondents' perceptions rather than proof that sustainability has become a normative expectation across all five-star hotels.

Operational Performance

The study assessed respondents' perceptions of operational performance in relation to sustainable supply chain management practices, and the descriptive results were as follows.

Table 3. Operational Performance

STATEMENT	1	2	3	4	5	Mean	S.D
Sustainable supply chain management practices contribute to achievement of operational objectives	1 1.67%	8 13.33%	30 50%	17 28.33%	4 6.67%	3.25	0.84
Sustainable supply chain practices have improved cost and operational efficiency through reduced costs, time, and resource wastage.	1 1.67%	7 11.67%	30 50%	16 26.67%	6 10%	3.32	0.87
Sustainable supply chain practices have improved service quality, flexibility, and customer satisfaction.	1 1.67%	7 11.67%	27 45%	19 31.67%	6 10%	3.37	0.88
Sustainable supply chain practices have supported smooth and uninterrupted operations, and the supplies are delivered on time without frequent disruptions	0 0%	9 15%	26 43.33%	21 35%	4 6.67%	3.33	0.74
Sustainable supply chain practices have enhanced operational productivity and overall organizational output.	1 1.67%	6 10%	29 48.33%	20 33.33%	4 6.67%	3.33	0.82
Average						3.32	0.83

Key: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Table 3 presents respondents' perceptions of operational performance in five-star hotels in Nairobi County. The findings indicate a generally positive perception, with an overall mean score of 3.32 (SD = 0.83), suggesting moderate agreement that sustainable supply chain practices contribute to operational outcomes. Improvement in service quality, flexibility, and customer satisfaction recorded the highest mean (M = 3.37, SD = 0.88), followed by operational continuity and productivity (M = 3.33, SD = 0.74 and M = 3.33, SD = 0.82, respectively). Improvement in cost and operational efficiency recorded a mean of 3.32 (SD = 0.87), while contribution to achievement of operational objectives recorded the lowest mean (M = 3.25, SD = 0.84). Overall, the responses suggest that respondents perceive sustainable supply chain practices as contributing positively to efficiency, service quality, continuity, and productivity.

These results are supported by prior studies in both local and regional contexts, which demonstrate that sustainability initiatives contribute to enhanced operational outcomes in the hospitality sector (Magon *et al.*, 2018; Yuanhao, 2024; Mwendwa, 2023). By integrating social, environmental, and economic sustainability practices, hotels not only improve operational efficiency and effectiveness but also enhance productivity and profitability, reflecting a holistic approach to operational performance (Murutu, 2016; Kariuki, 2014; Kinyanjui, 2014).

These results suggest that sustainable supply chain practices are perceived to contribute positively to several dimensions of operational performance, including efficiency, effectiveness, productivity, and achievement of operational objectives. The moderate rather than very high mean scores also suggest that the operational benefits are present but not uniformly strong across all indicators. This finding is important because it indicates room for hotels to strengthen the integration of sustainability practices into operational decision-making and performance management. Operational performance recorded an overall mean score of 3.32 (SD = 0.83), indicating a moderate level of perceived operational performance associated with sustainable supply chain practices.

Correlation Analysis

The Pearson correlation analysis was conducted to examine the relationships between environmentally sustainable supply chain practice and operational performance. The results are presented in Table 4 below.

Table 4. *Pearson Correlation*

		Correlations	
		Environmentally Sustainable Supply Chain Practice	Operational Performance
Environmentally Sustainable Supply Chain Practice	Pearson Correlation	1	.522**
	Sig. (2-tailed)	.	.000
	N	60	60
Operational Performance	Pearson Correlation	.522**	1
	Sig. (2-tailed)	.000	.
	N	60	60

Pearson correlation analysis established a positive and statistically significant relationship between environmentally sustainable supply chain practice and operational performance ($r = .522$, $p < .001$). The result indicates that hotels reporting greater adoption of environmentally sustainable supply chain practices also tended to report better operational performance. The relationship is moderate in magnitude, suggesting that environmental sustainability is an important operational factor while other organizational and contextual factors also contribute to performance.

Regression Analysis

Model Summary

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.522 ^a	.273	.260	.71241
a. Predictors: (Constant), Environmentally Sustainable Supply Chain Practice				
b. Dependent Variable: Operational Performance				

The regression model revealed $R = .522$, indicating a moderate positive relationship between environmentally sustainable supply chain practice and operational performance. The coefficient of determination ($R^2 = .273$) indicates that environmentally sustainable supply chain practice explained 27.3% of the variance in operational performance. The adjusted R^2 of .260 indicates that approximately 26.0% of the variance remained explained after adjustment for model degrees of freedom. Thus, although environmental sustainability represents a meaningful predictor, a substantial proportion of variation in operational performance is attributable to factors outside the single predictor included in this model.

ANOVA Results

Table 6. Anova^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.047	1	11.047	21.767	<.001 ^b
	Residual	29.436	58	.508		
	Total	40.483	59			

a. Dependent Variable: Operational Performance

b. Predictors: (Constant), Environmentally Sustainable Supply Chain Practice

The regression model was statistically significant, $F(1, 58) = 21.767$, $p < .001$, indicating that the model provided a statistically significant prediction of operational performance from environmentally sustainable supply chain practice.

Regression Coefficients

Table 7. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients Beta	Collinearity Statistics			
	B	Std. Error		T	Sig.	Tolerance	VIF
1 (Constant)	1.130	.478		2.365	.021		
Environmentally Sustainable Supply Chain Practice	.622	.133	.522	4.665	<.001	1.000	1.000

a. Dependent Variable: Operational Performance

The regression coefficient for environmentally sustainable supply chain practice was positive and statistically significant ($\beta = .522$, $p < .001$). The unstandardized coefficient ($B = .622$) indicates that a one-unit increase in the environmentally sustainable supply chain practice score was associated with an estimated 0.622-unit increase in operational performance, holding the model specification constant.

The regression equation was:

$$Y = 1.130 + 0.622X_1 + \varepsilon$$

The findings demonstrate a statistically significant positive association between environmentally sustainable supply chain practice and operational performance among five-star hotels in Nairobi County.

Hypothesis Testing

The hypothesis was tested and from the findings the following decision was made:

Table 8. Hypothesis Testing results

Hypothesis	Decision Rule	Conclusion
H0₁: There is no statistically significant influence of environmentally sustainable supply chain practices on the operational performance of 5 star-rated hotels in Nairobi County	Since $p < .001$, the relationship is statistically significant. Therefore, the null hypothesis ($H0_1$) is rejected.	Environmentally sustainable supply chain practice had a positive and statistically significant influence on operational performance among 5-star hotels in Nairobi County.

The null hypothesis was therefore rejected in favor of the alternative hypothesis.

10. DISCUSSION

The finding of a positive and statistically significant relationship between environmentally sustainable supply chain practices and operational performance supports Closed-Loop Supply Chain Theory. The theory proposes that resource recovery, recycling, reuse, waste reduction, and more efficient material flows can improve resource utilization and reduce avoidable losses. In the hotel context, practices such as green procurement, environmentally friendly packaging, waste reduction, and conservation of energy and water can therefore provide an operational pathway through which environmental sustainability is associated with better performance.

The magnitude of the explained variance is also noteworthy. The R^2 of .273 indicates that environmentally sustainable supply chain practice account for 27.3% of the observed variation in operational performance in the sample. This is a meaningful contribution for a model containing a single explanatory variable, but it also indicates that operational performance is multidimensional and is influenced by additional factors not examined in this study. Consequently, the results should not be interpreted as suggesting that environmental sustainability alone determines hotel performance. Rather, the findings indicate that strengthening environmentally sustainable supply chain practices may form one important component of a broader operational performance strategy.

The findings are also consistent with empirical evidence from previous studies. Zhu and Sarkis (2004) linked green supply chain practices with performance outcomes, while Liu et al. (2024) found that green procurement and green supply practices can contribute to firm sustainability performance. The findings also correspond with Kenyan and hospitality-sector evidence reported by Kimeu (2015), Kinyanjui (2014), Kassim (2024), and Barakagira and Paapa (2023), which indicates that environmental and green supply chain practices can support resource efficiency and organizational outcomes. The present study extends this evidence by providing quantitative evidence from five-star hotels in Nairobi County and by directly estimating the strength of the relationship with operational performance.

11. CONCLUSION

The study concludes that environmentally sustainable supply chain practices have a positive and statistically significant relationship with operational performance among five-star hotels in Nairobi County, Kenya. Hotels reporting stronger adoption of environmental sustainability practices also report better operational efficiency, effectiveness, and productivity. The regression results further indicate that environmentally sustainable supply chain practices explain 27.3% of the variation in operational performance in the study sample.

The study further concludes that green procurement, environmentally friendly packaging, waste reduction and recycling, resource conservation, sustainable logistics, and environmental compliance are important components of environmentally sustainable supply chain management. However, the relatively lower rating for integrating environmental

considerations into formal procurement decisions suggests that hotels have an opportunity to strengthen the institutionalization of environmental criteria within procurement governance.

12. RECOMMENDATIONS

The study recommends that management of five-star hotels in Nairobi County strengthen environmentally sustainable supply chain practices by institutionalizing comprehensive green procurement policies that incorporate environmental criteria into supplier selection and purchasing decisions. Hotels should also invest in technologies and operational systems that support energy and water conservation, waste reduction, recycling, and efficient resource utilization. These measures should be integrated into operational performance monitoring so that management can assess both environmental and operational outcomes.

The study further recommends that hotel management continuously evaluate suppliers against environmental sustainability standards and strengthen supplier engagement on environmentally friendly packaging, sourcing, logistics, and waste-management practices. Employee training and awareness programmes should also be enhanced to improve implementation and ensure that environmental sustainability is incorporated into routine operational decisions.

Policymakers and regulatory agencies should continue strengthening environmental sustainability regulations and support frameworks within the hospitality sector while promoting practical guidance and compliance mechanisms that are feasible for hotels. Future studies should examine additional organizational and contextual variables that may explain the remaining variation in operational performance and should consider larger samples, longitudinal designs, or comparative studies across hotel categories and counties.

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