

Green Product Practices and Organizational Performance among Five-Star-Rated Hotels in Kenya

Beatrice Nancy Jepchumba Chemurgor¹, Peter Mwaura², Stella Cheraisi Korir³

^{1,3}Faculty of Commerce, School of Business and Economics, Kabarak University, Private Bag -20157 Kabarak,- Kenya

²Faculty of Commerce, School of Business and Economics, Laikipia University, P.O. Box 1100 – 20300, Nyahururu, Kenya

Abstract: *The hospitality industry has increasingly adopted environmentally sustainable practices in response to growing environmental concerns, changing customer preferences, and the need to improve organizational performance. Green products, including biodegradable guest amenities, eco-friendly packaging, energy-efficient equipment, water-saving technologies, sustainable food products, and environmentally responsible materials, have emerged as important components of green innovation in hotels. However, despite increasing adoption of green practices, limited empirical evidence has established the specific contribution of green products to organizational performance among five-star-rated hotels in Kenya. This study therefore evaluated the effect of green products on the organizational performance of five-star-rated hotels in Kenya. The study was guided by Green Innovation Theory, which explains how organizations can adopt environmentally friendly innovations to reduce environmental impacts while enhancing efficiency, competitiveness, and performance. The study adopted a positivist research philosophy and a descriptive and correlational research design. The study used a quantitative approach, collecting data through structured questionnaires administered to respondents at five-star-rated hotels in Kenya. Of the 456 questionnaires issued, 392 were returned, for a response rate of 86.0%. Data were analyzed using descriptive and inferential statistics with the Statistical Package for the Social Sciences (SPSS). We used frequencies, percentages, means, and standard deviations for descriptive analysis, and Pearson correlation and simple linear regression to establish the relationship between green products and organizational performance. The descriptive findings indicated that green product practices were widely implemented, with an overall mean of 3.86 and a standard deviation of 1.19. Water-saving technologies had the highest mean score (3.98), followed by sustainability considerations in supplier selection (3.95), while the consistent availability of eco-friendly guest amenities had the lowest mean (3.67). Inferential findings showed a strong, statistically significant positive relationship between green product practices and organizational performance ($r = .741, p < .01$). Regression analysis further indicated that green product practices explained 54.9% of the variation in organizational performance ($R^2 = .549$). In contrast, the regression model was statistically significant, $F(1,390) = 474.900, p < .001$. The coefficient analysis showed that green product practices had a positive and statistically significant effect on organizational performance ($\beta = .741, t = 21.792, p < .001$). Consequently, the study rejected the null hypothesis that green product practices had no significant effect on organizational performance. The study concluded that adoption of green products significantly enhanced organizational performance among five-star-rated hotels in Kenya. It recommended that hotel managers strengthen investment in environmentally friendly products and integrate sustainability considerations into procurement and operational decisions. In contrast, policymakers should strengthen green hotel standards, incentives, and monitoring mechanisms.*

Keywords: Green products, green product practices, organizational performance, green innovation, five-star-rated hotels, hospitality industry, Kenya

1. Introduction

The hospitality industry has increasingly embraced sustainability as a key part of business strategy because of growing environmental concerns, changing consumer preferences, and increasing pressure on organizations to operate responsibly. Hotels consume significant amounts of energy, water, food, and other resources, so their operations are closely tied to environmental sustainability. Consequently, hotels are increasingly adopting green practices to reduce environmental impacts while improving operational efficiency, competitiveness, and long-term performance [1]. Sustainability is therefore shifting from being viewed solely as an environmental responsibility to becoming an important strategic consideration within the hospitality industry. One key dimension of sustainable hospitality is adopting green products. Green products are environmentally friendly products designed, produced, or used to minimize negative environmental impacts. In hotels, these may include biodegradable cleaning materials and toiletries, recyclable or reusable packaging, energy-efficient equipment, environmentally friendly furnishings, and

sustainably sourced products. Adopting such products can help hotels reduce waste and resource consumption while meeting customers' growing environmental expectations. [12], found that green product innovation improves green performance in the hotel industry, suggesting that environmentally oriented products can support broader organizational sustainability. Similarly, [23] found that environmental product innovation could strengthen hotels' green competitive advantage. Green products may also affect organizational performance by reducing costs, improving resource efficiency, increasing customer satisfaction, and enhancing corporate reputation. Hotels that adopt environmentally friendly products can potentially reduce operational waste and resource costs while differentiating themselves from competitors. [13], found that eco-innovation adoption positively influenced business performance in the hospitality sector. Similarly, [11] found that greening practices could improve hotel performance. These findings suggest that environmental initiatives can generate both ecological and economic benefits when effectively integrated into hotel operations.

In developing countries, green product adoption is becoming increasingly relevant as hospitality organizations seek to balance economic performance with environmental sustainability. Green innovation can help firms respond to market pressures, changing customer expectations, and competitive demands. [2] found that green product innovation could improve financial performance, especially when supported by innovation-oriented organizational capabilities. In the hospitality industry, [20] further showed that market and customer pressures encourage green product and process innovation, which can support sustainable organizational performance. In Kenya, sustainability has become an important consideration within the tourism and hospitality industry. Hotels increasingly adopt environmental practices related to waste management, resource conservation, energy efficiency, and environmentally responsible products. However, the adoption and effectiveness of such practices vary across hospitality establishments. Existing Kenyan research has established positive relationships between broader green practices and hotel performance. For example, [14] found that green procurement practices positively influenced organizational performance among star-rated hotels in Nakuru City, while [7] reported a positive relationship between green innovation adoption and sustainability performance among star-rated hotels in Nairobi. Despite these findings, few studies have examined green products and their effect on organizational performance among five-star-rated hotels in Kenya. Existing studies have largely examined green procurement, general green practices, or green innovation without isolating the contribution of green products. This creates a contextual and empirical gap, particularly within the five-star hotel segment, where high customer expectations, intense competition, and substantial resource consumption make sustainability strategically important. Therefore, this study examines the effect of green products on the organizational performance of five-star-rated hotels in Kenya. The study seeks to provide empirical evidence on whether adopting environmentally friendly products improves organizational outcomes in Kenya's premium hospitality sector.

1.2 Statement of the Problem

Kenya's hospitality industry has grown considerably in recent years, increasing the importance of maintaining strong organizational performance while addressing environmental sustainability challenges. International tourist arrivals increased from approximately 2.09 million in 2023 to 2.39 million in 2024, representing a 14.6% increase, while tourism earnings rose from Sh 377.49 billion to Sh 452.20 billion. Hotel bed-nights occupied also increased by approximately 16%, from 8.63 million in 2023 to 9.99 million in 2024 [21]. Despite this positive growth, hotel operations remain highly resource-intensive. A five-star hotel can consume about 130 megajoules of energy per guest per night, generate about 0.9 kg of waste per guest per day, and use between 170 and 440 liters of water per guest per day [21]. These resource demands create environmental pressures and operational costs, making green products potentially important for improving efficiency and organizational performance. The problem is further demonstrated by relatively modest hotel utilization despite growing tourism demand. In 2024, Kenya had approximately 35.54 million available hotel bed-nights but only 10.26

million occupied bed-nights, representing a national bed occupancy rate of about 28.9% [10]. This indicates that hotels continue to struggle to translate tourism growth into consistently high accommodation utilization and, consequently, sustainable organizational performance. For five-star-rated hotels, this challenge matters because they operate to high service standards and spend substantially on amenities, cleaning products, guest supplies, energy, and other operational inputs. Although adopting environmentally friendly products such as biodegradable toiletries, recyclable packaging, energy-efficient equipment, and environmentally safe cleaning materials could reduce resource wastage, improve efficiency, and strengthen hotels' environmental image, the extent to which these practices translate into improved organizational performance in Kenya remains insufficiently established.

Existing studies show that green practices and eco-innovation can improve hotel and business performance, while Kenyan studies have largely focused on broader green procurement or green innovation practices. For instance, [14] established a positive relationship between green procurement practices and organizational performance among star-rated hotels in Nakuru City, while [7] reported a positive relationship between green innovation adoption and sustainability performance among star-rated hotels in Nairobi. However, these studies do not specifically establish the effect of green products on organizational performance among five-star-rated hotels across Kenya. This creates an empirical and contextual gap, particularly given the resource-intensive nature of five-star hotel operations and the government's increasing emphasis on green certification and environmentally sustainable tourism practices. Therefore, the study seeks to determine the effect of green products on the organizational performance of five-star-rated hotels in Kenya.

1.3 Objective of the Study

To examine the effect of green product practice on the organizational performance of five-star-rated hotels in Kenya.

1.4 Research Hypothesis

H0₁: Green product has no statistically significant effect on the organizational performance of five-star-rated hotels in Kenya.

1.5 Significance of the Study

The study is significant to the management of five-star-rated hotels in Kenya because it provides evidence on how green products influence organizational performance. The findings enabled hotel managers to assess the value of adopting environmentally friendly products, such as biodegradable cleaning materials, recyclable packaging, energy-efficient equipment, and sustainable guest amenities, to improve efficiency, competitiveness, and overall performance. The study was significant to policymakers and regulatory agencies because it provided empirical evidence to support the development of policies, guidelines, and incentives that promote the adoption of green products in the hospitality industry. The findings also supported efforts to achieve environmental sustainability while maintaining the

competitiveness of Kenya's hotel sector. The study was significant to scholars and future researchers because it added to existing literature on green practices and organizational performance in the hospitality industry. It particularly addressed the limited empirical evidence on the specific effect of green products on organizational performance among five-star-rated hotels in Kenya. It provided a foundation for future research in sustainable hospitality management.

2. Literature Review

The literature review examined existing theoretical and empirical studies on green products and organizational performance. It explained how green products have influenced performance in the hospitality industry and identified gaps in previous studies that justified the current study.

2.1 Theoretical Review

Green Innovation Theory is rooted in [19] innovation perspective and was later developed to explain how organizations can use innovation to address environmental challenges while achieving economic benefits. The theory posited that organizations could create value by introducing new products, processes, and technologies that improved efficiency and reduced environmental harm [18]. In the hospitality industry, green innovation has included environmentally friendly products, energy-efficient equipment, waste-reduction systems, and sustainable operational processes [1]. Green products are therefore an important form of green innovation because adopting them can reduce waste, conserve resources, and improve operational efficiency. Recent studies show that green product and process innovation contribute to green performance and competitive advantage in hotels [12], [23]. Similarly, [13] found that adopting eco-innovation positively influenced business performance in the hospitality sector, while [11] found that greening practices could improve hotel performance. However, critics have argued that green innovation does not automatically guarantee improved organizational performance. Adopting environmentally friendly products may require substantial financial investment, specialized capabilities, and organizational commitment, while returns may take time to materialize [6]. The effectiveness of green innovation could also depend on market conditions, customer preferences, and organizational capabilities [1]. The theory was therefore considered suitable for the present study because it provided a basis for explaining how green products could influence organizational performance. It supported the study objective of evaluating the effect of green products on organizational performance of five-star-rated hotels in Kenya by suggesting that green products could improve resource efficiency, customer satisfaction, competitiveness, and ultimately organizational performance.

2.2 Empirical Review

2.2.1 Green Product and Organizational Performance

Green product practices have become increasingly important in the hospitality industry because they can enhance environmental sustainability while improving organizational

performance. These practices include using biodegradable guest amenities, eco-friendly packaging, energy-efficient equipment, water-saving technologies, sustainable food products, and environmentally responsible suppliers. Empirical evidence generally indicates that green product practices improve operational efficiency, customer satisfaction, competitiveness, and organizational performance, although the strength of these effects varies across hospitality contexts. At the global level, [17] examined green marketing practices and company performance in Vietnam using quantitative data collected from senior managers. The study assessed green product practices through eco-friendly service design, certified materials, and energy-efficient technologies, while measuring organizational performance through financial results, competitive strength, and customer satisfaction. Using structural equation modelling, the study found that green product practices positively and significantly affected company performance, with customer satisfaction and competitive advantage partially mediating the relationship. This finding showed that green products could generate organizational benefits both directly through improved operations and indirectly through stronger customer perceptions and competitive positioning. Similarly, [12] examined green performance in the hotel industry and found that management environmental concern significantly encouraged green product and process innovation. The study further established that green product and process innovation mediated the relationship between environmental concern and green performance. This suggested that introducing environmentally friendly products could translate environmental commitment into measurable improvements in hotel performance. [23] also established that environmental product innovation contributed to green competitive advantage among hotels. Their findings indicated that hotels could use environmentally friendly products as strategic resources for differentiation and improved competitiveness.

[20] examined green transition in the hospitality industry and found that market forces and customer dynamics encouraged green product and process innovation, providing further evidence. The study found that green innovation contributed to sustainable firm performance, showing that hotels could meet rising customer and market expectations for environmental responsibility while improving organizational outcomes. [15] Similarly, [16] found that green innovation positively influenced hotel performance, highlighting the importance of innovation-oriented environmental practices in achieving both organizational and environmental outcomes. These studies collectively suggest that green products are not merely environmental initiatives but can also constitute strategic resources that support efficiency, competitiveness, and long-term performance. Within the African context, [8] examined green innovation and environmental performance among hotels in Kano, Nigeria. Using hotel employee data and structural equation modelling, the study established a positive, significant relationship between green innovation and hotel environmental performance. The findings showed that environmental innovation could enhance hotel performance by encouraging more efficient, environmentally responsible operations. In Ghana, [3] examined green practices among star-rated hotels, including energy-saving appliances, water-efficient systems, eco-friendly amenities,

and sustainable food sourcing. The study found that green practices significantly improved customer satisfaction and hotel reputation, although their direct financial effect was relatively limited. This indicated that green products could influence organizational performance indirectly through customer and reputational outcomes. The relevance of green practices is also evident among high-end hotels in Africa. [5] examined green practice implementation among five-star hotels in Kampala, Uganda. The study demonstrated that five-star hotels were increasingly incorporating environmental practices into their operations to improve environmental sustainability. This study is particularly relevant to the current research because it focused on the same hotel classification. However, it did not specifically establish the effect of green products on organizational performance in Kenya.

In Kenya, empirical evidence has also demonstrated the importance of green practices within the hospitality sector. [7] examined the relationship between green innovation adoption and sustainability performance among star-rated hotels in Nairobi County. The study established a positive relationship between green innovation adoption and sustainability performance, suggesting that environmentally oriented innovations could improve hotel outcomes. [9] further examined green practice implementation strategies among hotels in Kenya's cities and found that effective implementation of green practices significantly contributed to hotel sustainability. The findings emphasized that the benefits of green practices depended not only on their adoption but also on effective implementation within hotel operations. Similarly, [22] investigated green practices and consumer buying behaviour in four- and five-star restaurants in Nairobi County. The study established a significant positive relationship between green practices and consumer buying behaviour. The findings suggested that environmentally responsible products and services could encourage repeat patronage and positive word-of-mouth, thereby creating indirect benefits for organizational performance. However, the study focused on restaurants and consumer behaviour rather than the organizational performance of five-star-rated hotels. Overall, the empirical literature shows that green product practices generally positively influence organizational outcomes through operational efficiency, customer satisfaction, loyalty, reputation, competitiveness, and sustainability performance. However, the evidence also indicates that the financial benefits of green products may not always be immediate and may depend on customer awareness, implementation capacity, market conditions, and the type of organization studied. In Kenya, existing studies have largely examined green practices broadly, hotel sustainability, or consumer behaviour, with limited empirical attention to the specific effect of green product practices on organizational performance among five-star-rated hotels. This study therefore sought to address this contextual and empirical gap by examining the effect of green products on organizational performance of five-star-rated hotels in Kenya.

2.3 Conceptual Framework

The conceptual framework illustrated the relationship between green products (the independent variable) and organizational performance (the dependent variable) among five-star-rated hotels in Kenya. Guided by Green Innovation

Theory and existing literature, it showed how adopting environmentally friendly products was expected to influence hotel performance through improved efficiency, customer satisfaction, profitability, and competitiveness.

3. Methodology

The study adopted a positivist research philosophy because it sought to objectively establish the effect of green products on organizational performance using measurable and quantifiable data. The study adopted a descriptive and correlational research design to describe existing green product practices and determine the relationship between green products and organizational performance among five-star-rated hotels in Kenya. The study employed a quantitative approach, enabling the researcher to collect numerical data and statistically test relationships between the study variables. The target population comprised five-star-rated hotels in Kenya; the unit of analysis was the selected five-star hotels, and the unit of observation was managers and other employees knowledgeable about hotel operations and sustainability practices. The study used purposive sampling to select respondents with relevant information on green products and organizational performance. The study collected primary data using structured questionnaires with closed-ended items measured on a five-point Likert scale ranging from strongly disagree to agree strongly. The researchers administered the questionnaires in person and/or electronically to the selected respondents. The researchers conducted a pilot study among respondents from hotels not included in the final study to establish the instrument's reliability and clarity. Reliability was assessed using Cronbach's alpha, with a coefficient of 0.70 or higher considered acceptable. Content validity was established through review by the research supervisor and experts in hospitality and research methodology. The study also observed ethical requirements, including informed consent, voluntary participation, confidentiality, anonymity, and the use of collected information strictly for academic purposes. The researchers coded and analyzed the collected data using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means, and standard deviations, summarized the data. Inferential analysis used Pearson correlation and simple linear regression to establish the relationship between green products and organizational performance. The regression model was specified as:

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

Where:

Y = Organizational Performance

β_0 = Constant

β_1 = Regression coefficient of green products

X_1 = Green Products

ε = Error term

The hypothesis was tested at a 5% level of significance, where a p-value less than 0.05 led to rejection of the null hypothesis.

4. Findings

This section presents the study findings on the effect of green products on the organizational performance of five-star-rated hotels in Kenya. The findings were presented based on the

study objective and analyzed using descriptive and inferential statistics. Descriptive statistics summarized respondents' views on green product practices and organizational performance, while correlation and regression analyses established the relationship and effect of green products on organizational performance.

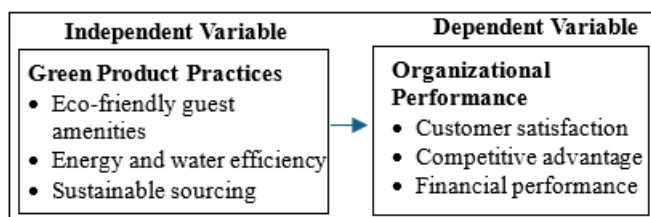


Figure 1: Conceptual Framework

4.1 Response Rate

The study issued 456 questionnaires to sampled respondents, including General Managers, Marketing Managers, Operations Managers, and hotel customers from five-star-rated hotels in Kenya. Of these, 392 questionnaires were completed and returned (86% response rate), while 64 were not returned (14%). Table 1 presents the response rate.

Table 5: Response Rate

Response Category	Frequency	Percentage (%)
Questionnaires Issued	456	100
Questionnaires Returned	392	86
Questionnaires Not Returned	64	14
Total	456	100

Table 1 shows that of the 456 questionnaires administered, 392 were completed and returned, yielding an 86% response rate. This response rate is considered highly satisfactory for statistical analysis. It provides a reliable basis for drawing valid conclusions regarding the effects of green marketing practices on the organizational performance of five-star-rated hotels in Kenya. The high response rate minimized non-response bias and improved the representativeness of the study sample. According to [4], a response rate of 70% or higher is considered very good for survey research, while [16] observes that response rates exceeding 80% are excellent and improve the credibility and generalizability of research findings. Therefore, the response rate achieved of 86% was considered adequate for subsequent descriptive and inferential statistical analyses.

4.2 Descriptive Statistics

Descriptive statistics summarized respondents' perceptions of green products and organizational performance among five-star-rated hotels in Kenya. The analysis focused on the mean and standard deviation of green product indicators, with higher mean scores indicating greater agreement with the statements. Table 2 presents the findings.

4.2.1 Descriptive Statistics in Technological Adoption

Respondents indicated their level of agreement with statements about green product practices implemented by five-star-rated hotels in Kenya using a five-point Likert scale. Descriptive statistics, including frequencies, percentages, means, and standard deviations, summarized respondents' perceptions. Table 3 presents the results.

Table 3: Descriptive Statistics for Green Product Practices (N = 392)

Statement	1 (SD) f (%)	2 (D) f (%)	3 (N) f (%)	4 (A) f (%)	5 (SA) f (%)	Mean	SD
The hotel provides environmentally friendly, biodegradable guest amenities.	20 (5.1%)	35 (8.9%)	58 (14.8%)	123 (31.4%)	156 (39.8%)	3.92	1.17
Single-use plastic items in guest amenities have been significantly reduced or eliminated by the hotel.	25 (6.4%)	45 (11.5%)	63 (16.1%)	116 (29.6%)	143 (36.5%)	3.78	1.23
Eco-friendly guest amenities are consistently available across all guest rooms and service areas.	30 (7.7%)	51 (13.0%)	68 (17.3%)	112 (28.6%)	131 (33.4%)	3.67	1.27
The hotel uses energy-efficient systems to reduce electricity consumption.	23 (5.9%)	34 (8.7%)	59 (15.1%)	121 (30.9%)	155 (39.5%)	3.90	1.19
Water-saving technologies are effectively implemented in guest rooms and hotel facilities.	18 (4.6%)	29 (7.4%)	55 (14.0%)	130 (33.2%)	160 (40.8%)	3.98	1.12
The hotel actively monitors and manages energy and water usage to minimize environmental impact.	22 (5.6%)	38 (9.7%)	51 (13.0%)	135 (34.4%)	146 (37.2%)	3.88	1.18
The hotel prioritizes sourcing products and materials from environmentally responsible suppliers.	25 (6.4%)	37 (9.4%)	32 (8.2%)	166 (42.3%)	132 (33.7%)	3.88	1.17
Food and beverage items are sourced using sustainable and ethical procurement practices.	30 (7.7%)	35 (8.9%)	48 (12.2%)	151 (38.5%)	128 (32.7%)	3.80	1.21
Sustainability considerations influence the hotel's supplier selection and purchasing decisions.	17 (4.3%)	36 (9.2%)	59 (15.1%)	119 (30.4%)	161 (41.1%)	3.95	1.15
Overall Mean and SD						3.86	1.19

Respondents generally agreed that five-star-rated hotels adopted green product practices, with an overall mean of 3.86 and a standard deviation of 1.19. The provision of environmentally friendly and biodegradable guest amenities had a mean of 3.92 (SD = 1.17), indicating general agreement that hotels commonly provided such products. The reduction or elimination of single-use plastics recorded a mean of 3.78 (SD = 1.23), showing substantial adoption, although implementation varied across hotels. Eco-friendly amenities

were consistently available but had the lowest mean (3.67; SD = 1.27), indicating that maintaining consistency across guest rooms and service areas remained a challenge. Energy-efficient systems had the highest mean (3.90; SD = 1.19), indicating widespread adoption of energy-saving measures. Water-saving technologies had the highest mean (3.98; SD = 1.12), indicating strong agreement on their implementation. Monitoring and managing energy and water use recorded a mean of 3.88 (SD = 1.18), suggesting that environmental

resource monitoring was commonly practiced. Sourcing products from environmentally responsible suppliers recorded a mean of 3.88 (SD = 1.17), while sustainable and ethical sourcing of food and beverage items recorded a mean of 3.80 (SD = 1.21). Finally, sustainability considerations in supplier selection and purchasing decisions recorded a mean of 3.95 (SD = 1.15), indicating that environmental considerations were important in procurement decisions. Overall, the findings indicated that five-star-rated hotels in Kenya widely implemented green product practices, particularly water-saving technologies, environmentally friendly amenities, energy efficiency, and sustainability-oriented procurement.

4.3 Correlation Analysis

Pearson correlation analysis was conducted to determine the strength and direction of the relationship between green product practices and organizational performance among five-star-rated hotels in Kenya. The analysis examined whether variations in green product practice adoption were associated with corresponding variations in organizational performance. Table 4 presents the results.

Table 4: Correlation between Green Product Practices and Organizational Performance

Variables	Green Product Practices	Organizational Performance
Green Product Practices	1	.741**
Organizational Performance	.741**	1
Sig. (2-tailed)	—	.000
N	392	392

The findings indicated that green product Practices had a strong, statistically significant positive relationship with organizational performance among five-star-rated hotels in Kenya ($r = .741$, $p < 0.01$). This implied that hotels with higher levels of green product practices tended to report higher levels of organizational performance. The strong correlation further suggested that environmentally friendly guest amenities, reduction of single-use plastics, energy-efficient systems, water-saving technologies, and sustainability-oriented sourcing were associated with improved organizational outcomes. Because the p-value was less than 0.01, the relationship was statistically significant, suggesting the observed association was unlikely to have occurred by chance. However, the correlation indicated an association, not causation.

4.4 Model Summary

With a Pearson correlation of $r = .741$ between green product practices and organizational performance, the corresponding coefficient of determination was $R^2 = .549$, meaning green product practices explained approximately 54.9% of the variation in organizational performance. A model summary consistent with the correlation was therefore presented as follows:

Table 5: Model Summary for Green Product Practices and Organizational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741	.549	.548	0.671

The model summary showed an R-value of .741, indicating a strong positive relationship between green product practices and organizational performance. The R^2 of .549 indicated that green product practices explained 54.9% of the variation in organizational performance, while other factors not included in the model explained the remaining 45.1%. The adjusted R^2 of .548 showed that the model retained almost the same explanatory power after adjusting for the number of predictors. Overall, the results suggested that green product practices substantially explained organizational performance among five-star-rated hotels in Kenya.

4.5 Analysis of Variance (ANOVA)

The analysis of variance (ANOVA) was conducted to determine whether the regression model significantly explained the variation in organizational performance based on green product practices among five-star-rated hotels in Kenya. Since the model contained one predictor, the degrees of freedom were 1 for regression and 390 for residual, giving a total of 391. Table 6 presents the ANOVA results.

Table 6: ANOVA for Green Product Practices and Organizational Performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	213.705	1	213.705	474.900	.000
Residual	175.295	390	0.449		
Total	389.000	391			

The ANOVA results showed that the regression model was statistically significant, $F(1, 390) = 474.900$, $p < 0.001$. This indicated that the model containing green product practices significantly explained variations in organizational performance among five-star-rated hotels in Kenya. The p-value of < 0.001 was below the 0.05 threshold, confirming that the regression model's relationship was statistically significant. The F-statistic of 474.900 further indicated that the explained variation in organizational performance was substantially greater than the unexplained variation. This suggested that green product practices meaningfully explained organizational performance. The result was consistent with the model summary, where the R^2 value of .549 showed that green product practices accounted for 54.9% of the variation in organizational performance. In comparison, other factors not included in the model explained the remaining 45.1%. Therefore, the findings provided strong statistical evidence that the regression model was appropriate for examining the effect of green product practices on organizational performance. The significant ANOVA result provided a basis for proceeding to the regression coefficient analysis to establish the magnitude and direction of the effect of green product practices on organizational performance.

4.6 Regression Coefficients

The regression coefficient analysis determined the magnitude and direction of the effect of green product practices on organizational performance among five-star-rated hotels in Kenya. The analysis complemented the correlation and ANOVA results by establishing whether green product practices significantly predicted organizational performance. Table 7 presents the results.

Table 7: Regression Coefficients for Green Product Practices and Organizational Performance

Model	Unstandardized B	Std. Error	Standardized Beta (β)	t	Sig.
(Constant)	0.000	0.046	—	0.000	1.000
Green Product Practices	0.741	0.034	0.741	21.792	.000

The regression results indicated that green product practices had a positive, statistically significant effect on organizational performance, as shown by a standardized beta coefficient of $\beta = .741$ and a significance level of $p < .001$. The positive coefficient indicated that adopting green product practices was associated with higher organizational performance among five-star-rated hotels in Kenya. The t-value of 21.792 further showed that the predictor contributed significantly to organizational performance. This finding was consistent with the Pearson correlation ($r = .741$) and the model summary, which showed that green product practices explained 54.9% ($R^2 = .549$) of the variation in organizational performance. The regression results therefore provided further evidence that green product practices were an important predictor of organizational performance. Consequently, the study rejected the null hypothesis that green product practices had no significant effect on the organizational performance of five-star-rated hotels in Kenya at the 5% level of significance.

4.7 Hypothesis Test Results

The study tested the hypothesis to determine whether green product practices had a statistically significant effect on organizational performance among five-star-rated hotels in Kenya. The decision was based on the regression coefficient and its corresponding significance level at the 5% significance level.

Table 8: Hypothesis Testing Results

Hypothesis	β	t-value	p-value	Decision
H ₀₁ : Green product practices had no significant effect on organizational performance of five-star-rated hotels in Kenya.	0.741	21.792	< 0.001	Reject H ₀₁

The results showed that green product practices had a positive, statistically significant effect on organizational performance ($\beta = .741$, $t = 21.792$, $p < 0.001$). Because the p-value was below the 0.05 significance level, the study rejected the null hypothesis (H₀₁). This indicated that green product practices significantly influenced organizational performance among five-star-rated hotels in Kenya. The positive beta coefficient further indicated that greater adoption of green product practices was associated with improved organizational performance. The finding was consistent with the correlation result ($r = .741$, $p < 0.01$) and the regression model, which showed that green product practices explained 54.9% of the variation in organizational performance. The study therefore concluded that green product practices were an important predictor of organizational performance among five-star-rated hotels in Kenya.

5. Summary of Findings

The study evaluated the effect of green product practices on organizational performance of five-star-rated hotels in Kenya. Descriptive findings showed that green product practices were widely implemented, with an overall mean of 3.86 (SD = 1.19). Water-saving technologies recorded the highest mean (3.98), followed by sustainability considerations in supplier selection and purchasing decisions (3.95) and environmentally friendly guest amenities (3.92). The lowest mean was recorded for the consistent availability of eco-friendly guest amenities (3.67). These results indicated that the surveyed hotels had generally embraced environmentally friendly amenities, energy- and water-efficient systems, sustainable sourcing, and responsible procurement practices. Inferential findings established a strong, statistically significant positive relationship between green product practices and organizational performance ($r = .741$, $p < 0.01$). The regression analysis further showed that green product practices explained 54.9% ($R^2 = .549$) of the variation in organizational performance. The ANOVA results confirmed that the regression model was statistically significant, $F(1, 390) = 474.900$, $p < 0.001$, indicating that green product practices significantly explained variations in organizational performance. Hypothesis testing showed that green product practices had a positive, statistically significant effect on organizational performance ($\beta = .741$, $t = 21.792$, $p < 0.001$). Because the p-value was below the 0.05 significance level, the study rejected the null hypothesis that green product practices had no significant effect on organizational performance. The study therefore established that greater adoption of green product practices was associated with improved organizational performance among five-star-rated hotels in Kenya.

5.1 Conclusion

The study concluded that green product practices significantly influenced organizational performance among five-star-rated hotels in Kenya. The high descriptive mean demonstrated that hotels had adopted various environmentally friendly products and sustainability-oriented practices, particularly water-saving technologies, environmentally friendly guest amenities, and sustainable procurement. The strong positive correlation and significant regression results further showed that green product practices were a key predictor of organizational performance. Therefore, integrating environmentally friendly products into hotel operations contributed not only to environmental sustainability but also to improved organizational outcomes.

5.2 Recommendations

5.2.1 Recommendations for Policy

Policy makers and tourism regulatory agencies should strengthen policies and guidelines that encourage five-star-rated hotels to adopt environmentally friendly products. Strengthen incentives such as tax reliefs, recognition schemes, and sustainability certification to encourage investment in biodegradable amenities, recyclable products, energy-efficient equipment, and water-saving technologies. Regulatory agencies should also strengthen monitoring of green product adoption and incorporate measurable green-

product standards into hotel sustainability and rating frameworks.

5.2.2 Recommendations for Practice

Management of five-star-rated hotels should increase investment in green products and integrate them into routine hotel operations and procurement decisions. Hotels should prioritize biodegradable guest amenities, reduce single-use plastics, adopt energy- and water-efficient products, and work with environmentally responsible suppliers. Management should also ensure that green amenities are consistently available across all guest rooms and service areas, since this indicator recorded the lowest mean. The organization should continuously monitor resource use and evaluate the performance benefits of green products to ensure sustainability investments contribute to operational efficiency, customer satisfaction, and overall organizational performance.

5.2.3 Recommendations for Further Studies

Future studies should examine other dimensions of green practices, including green processes, green human resource management, green marketing, and green supply chain management, to establish their individual effects on organizational performance. Further research should also cover other hotel categories, such as three- and four-star-rated hotels, and other counties in Kenya to determine whether the findings vary across hotel categories and geographical contexts. Future researchers could also use longitudinal designs and qualitative approaches to provide deeper insights into how adopting green products affects organizational performance over time.

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Author Profile

Beatrice Nancy Jepchumba Chemurgor, MBA, CS (K), MCIM, is an accomplished Kenyan public-sector leader, governance professional, administrator, and researcher with over two decades of experience in public administration, strategic leadership, financial management, policy implementation, and institutional development. She holds a Master of Business Administration (MBA) and is a Certified Secretary of Kenya (CS(K)) and a Chartered Institute of Marketing professional (MCIM). She currently serves as Chief Officer in the Department of Education and Vocational Training, County Government of Nandi, where she provides strategic leadership in education service delivery, vocational skills development, resource management, and implementation of county government policies and programmes. Beatrice has extensive experience in public-sector management, institutional leadership, stakeholder engagement, performance management, and governance. Her work focuses on strengthening Early Childhood Development and Education (ECDE), expanding access to vocational education and training, promoting equitable access to educational opportunities, and empowering young people through skills development. She has contributed to initiatives to improve education infrastructure, strengthen the ECDE workforce, expand vocational training opportunities, and enhance access to bursary support for learners. Her professional interests include public-sector governance, strategic management, public financial management, accountability, institutional performance, sustainable development, and leadership. She also conducts academic research, with a particular interest in green marketing practices, customer attitudes, sustainability, and organizational performance. Her doctoral research focuses on green marketing practices and organizational performance among five-star-rated hotels in Kenya, examining customer attitudes as a mediating variable. Beatrice's professional and academic journey reflects a strong commitment to ethical leadership, evidence-based decision-making, institutional transformation, mentorship, and community development. She aspires to advance public-sector governance, educational development, and sustainable organizational performance through effective leadership, research, professional practice, and knowledge sharing.