

# The Effect of Green Supply Chain Strategies on the Performance of food and Beverage Manufacturing Firms in Nairobi City County, Kenya

Reuben Mwove, Miriam Thogori, Rael Mwirigi, Anne Ngeretha

Faculty of Business Studies, Departments of Management Science and Business Studies, Chuka University, P O Box 109- 60400 Chuka

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## ABSTRACT

The literature on Green Supply Chain Management (GSCM) has extensively explored its potential for improving environmental performance, yet there remains a significant gap in understanding its direct impact on the economic performance of manufacturing firms, particularly in developing economies like Kenya. Previous studies have often focused on environmental and operational benefits, with limited attention to profitability, market share, and sales growth, especially within the context of Kenya's food and beverage manufacturing sector. Additionally, much of the research on GSCM strategies has been conducted in developed economies, making the applicability of findings in developing regions uncertain. This study addresses these gaps by examining the economic implications of GSCM strategies in a sector that contributes approximately 7.8% to Kenya's GDP but faces declining output due to economic challenges, competition, and rising operational costs. A descriptive cross-sectional design was employed to provide a snapshot of the current state of GSCM practices and their immediate effects on firm performance. This design was chosen for its ability to capture data from a diverse set of firms simultaneously, allowing for generalizable conclusions across the sector. Grounded in Closed Loop Supply Chain theory, the study surveyed a sample of 164 respondents from 138 food and beverage manufacturing firms in Nairobi City County, achieving a response rate of 90.9%. The data was analyzed using simple and multiple regressions, Pearson's product-moment correlation, and Spearman's Rank Correlation, with SPSS version 28. The results show that GSCM strategies have a moderate positive correlation with overall firm performance (correlation coefficient = 0.285, p-value = 0.000) and profitability (correlation coefficient = 0.243, p-value = 0.003). However, the strategies' impact on sales growth was not statistically significant (correlation coefficient = 0.135, p-value = 0.101), while their influence on market share was both positive and significant (correlation coefficient = 0.314, p-value = 0.000). These findings suggest that while GSCM strategies can enhance firm performance in terms of profitability and market share, their effect on sales growth remains limited. The study provides actionable insights for firms aiming to integrate GSCM practices to boost competitiveness and sustainability, with broader implications for policy formulation and industry standards in Kenya.

**Key words:** Green Supply Chain Management (GSCM), economic performance, manufacturing sector, environmental pressures, and sustainability.

## INTRODUCTION

In recent years, there has been an increasing emphasis on sustainability within supply chain management, driven by growing environmental concerns, regulatory pressures, and a need for businesses to align with sustainable development goals. Among the various approaches to sustainable supply chain management, Green Supply Chain Management (GSCM) strategies have gained prominence as a transformative approach that integrates environmental considerations into every aspect of the supply chain, from supplier selection to end-product delivery. Green supply chain strategies focus on reducing environmental impact while optimizing operational efficiency and profitability. This dual focus makes GSCM not only a key component of sustainability efforts but also a strategic tool for enhancing competitiveness in the global market (Kazancoglu et al., 2020).

GSCM strategies encompass several critical practices such as supplier selection criteria based on environmental

performance, assessing the environmental impact of materials, and ensuring regulatory compliance. These strategies aim to help industries reduce carbon emissions, minimize waste, and maximize profit by fostering a more sustainable approach to supply chain management (Kazancoglu et al., 2020). Tiwari and Mubarak (2019) describe GSCM as the strategic incorporation of environmental criteria into supplier selection and management processes, emphasizing a comprehensive evaluation of suppliers, materials, and processes aligned with sustainability goals. This conceptualization highlights the importance of embedding environmental considerations into core supply chain activities to achieve long-term environmental sustainability.

Moreover, the concept of a green supply chain is not limited to reducing negative environmental impacts but extends to promoting proactive environmental practices. Leal et al. (2023) define GSCM as an approach aimed at minimizing environmental impacts throughout the supply chain, which involves assessing suppliers' environmental performance and prioritizing those who adhere to environmentally friendly practices. This assessment is crucial in driving the overall sustainability of the supply chain, as it encourages suppliers to adopt green practices that reduce emissions, waste, and energy use. The positive connection between green supply chain strategies and overall sustainability is evident from their role in fostering environmental responsibility, resource efficiency, and resilience (Sarkis et al., 2021). By integrating GSCM, organizations can achieve a balance between economic and environmental performance, which is crucial for long-term sustainability.

Fernando et al. (2022) emphasize that the green supply chain contributes to reducing the overall environmental impact by meticulously selecting suppliers and materials with lower environmental footprints. Leal et al. (2023) further highlight that opting for environmentally sustainable suppliers and materials not only enhances resource efficiency but also promotes responsible and sustainable sourcing strategies. Furthermore, GSCM strategies play a critical role in ensuring regulatory compliance and fostering long-term sustainability. Aligning supply chain practices with environmental regulations and standards helps organizations reduce the risk of legal issues while establishing resilient and sustainable supply chains (Yang et al., 2022). Compliance with regulations not only protects the organization from potential legal penalties but also signals a strong commitment to sustainability and corporate social responsibility, enhancing the organization's reputation and competitive advantage (Lăzăroiu et al., 2020).

Key elements of GSCM strategies include the rigorous assessment and selection of suppliers based on their environmental performance, which involves evaluating factors such as waste management, emissions, and efficient resource use (Farooque et al., 2022). Additionally, the environmental impact of procured materials is a critical aspect, as it involves assessing their recyclability, biodegradability, and energy efficiency (Lau et al., 2023). Ensuring compliance with current environmental regulations and standards is imperative, as noted by Centobelli et al. (2021), as it signals an organizational commitment to sustainability and promotes long-term resilience in supply chain operations.

In this context, the study aims to provide a comprehensive assessment of the impact of green supply chain strategies on firm performance. By incorporating the measurement indicators discussed in recent literature by Farooque et al. (2022), Lau et al. (2023), and Centobelli et al. (2021), the research seeks to offer contemporary insights into the pivotal role of environmentally conscious supply chain strategies in fostering sustainable business operations. This study's findings are expected to contribute significantly to the understanding of how green supply chain strategies can be leveraged to achieve both environmental sustainability and competitive advantage in the dynamic business landscape.

## Statement of the Problem

The manufacturing sector in Kenya, particularly the food and beverage subsector, faces significant challenges due to declining market share, stagnant sales growth, and increasing operational costs. Over the past five years, the sector has experienced a decrease in market share by 5% and stagnation in sales growth at 2%, compounded by a 13.4% decline in overall sector output from 2017 to 2022. This downturn is attributed to economic downturns, heightened competition, and environmental challenges, highlighting a disconnect between current supply chain strategies and the growing imperative for sustainability. Specifically, the decline in performance within the food and beverage manufacturing subsector, marked by reduced net profit margins and market share, underscores the critical need for strategies that integrate environmental sustainability to enhance economic

resilience. Green Supply Chain Management (GSCM) strategies have emerged as a crucial approach to addressing these challenges by aligning supply chain operations with sustainability goals. However, despite their potential to reduce environmental impact, improve resource efficiency, and enhance firm performance, the adoption and impact of GSCM strategies in the Kenyan food and beverage manufacturing sector remain underexplored. Consumer sentiment surveys from 2020 to 2022 indicate a 15% reduction in trust and loyalty toward firms perceived as lacking sustainability strategies, emphasizing the importance of GSCM in fostering consumer trust and brand loyalty. Despite the strategic significance of GSCM, there is a notable gap in the literature regarding its impact on firm performance. Previous studies show disparities in variable selection, inconsistencies in findings, and diverse methodological approaches, which have impeded a comprehensive understanding of the relationship between GSCM strategies and performance outcomes. Furthermore, the nuanced role of GSCM in enhancing performance metrics such as profitability, market share, and sales growth has not been sufficiently explored in the context of Kenya's food and beverage sector. This study seeks to address these critical gaps by systematically exploring the relationship between green supply chain strategies and firm performance, offering insights into how environmentally sustainable practices can drive both economic and environmental benefits. By doing so, it aims to provide a clearer understanding of the strategic role of GSCM strategies in achieving sustainability goals and improving firm performance in the dynamic and competitive landscape of the manufacturing industry.

### **Objective of the Study**

The general objective of the study was to determine the effect of green supply chain strategies on the performance of food and beverage manufacturing firms in Nairobi City County, Kenya.

### **Research Hypothesis**

There is no statistically significant relationship between green supply chain strategies and performance of food and beverage manufacturing firms in Nairobi city county, Kenya.

### **Conceptual Framework**

A conceptual framework provides both a visual and theoretical structure that helps illustrate the relationships between variables under study, offering clarity on how these elements interact. As Orodho (2008) explains, such a framework enables researchers to articulate hypotheses and explore the dynamics of their investigation. In this context, the conceptual framework links the key independent variable; Green Supply Chain Management (GSCM) strategies with firm performance as the dependent variable, highlighting how GSCM strategies impact various performance metrics. Green Supply Chain Management strategies form the central focus of the study and are assessed using three primary indicators: supplier selection criteria, material environmental impact, and regulatory compliance. These indicators represent various dimensions of environmental sustainability embedded within supply chain operations and provide a comprehensive view of how sustainable practices influence organizational outcomes.

One critical aspect of GSCM strategies is the process of selecting suppliers based on environmental criteria. Firms prioritize suppliers who demonstrate strong environmental practices, such as minimizing waste, reducing emissions, and using eco-friendly materials. By choosing suppliers who meet these sustainability standards, companies align their operations with broader environmental goals while ensuring the sustainability of their supply chain inputs. This practice can yield dual benefits. On one hand, it enhances the company's reputation, potentially boosting market share and fostering consumer loyalty. On the other hand, it helps mitigate operational risks associated with working with non-compliant suppliers, which can otherwise result in penalties or supply chain disruptions. The environmental impact of materials used in production is another critical indicator of GSCM strategies. Companies that utilize environmentally responsible materials significantly reduce their ecological footprint, which can lead to cost savings by enhancing resource efficiency and minimizing waste. For example, the use of biodegradable or recyclable materials can lower disposal costs and improve a firm's overall cost efficiency. Such efforts not only contribute to sustainability but can also attract environmentally conscious consumers, indirectly driving sales growth. Firms that actively manage the environmental impact of their materials are often better positioned to align with global sustainability trends, thereby gaining a competitive

advantage in both local and international markets.

Regulatory compliance is another significant component of GSCM strategies. Beyond being a legal requirement, compliance with environmental regulations serves as a strategic approach for avoiding fines, reducing reputational risks, and improving operational efficiency. Firms that adhere to regulatory standards often experience smoother approval processes, allowing them to operate more effectively. Those that go beyond mere compliance by proactively adopting environmental initiatives are more likely to attract investments, thereby enhancing their profitability. Strong regulatory compliance can also unlock new market opportunities, particularly when the firms meet the requirements of environmentally conscious buyers or government contracts, leading to increased market share. The dependent variable in this study (firm performance) is measured through profitability, market share, and sales growth. Each of these performance metrics can be directly influenced by the implementation of GSCM strategies. Profitability, for instance, can be significantly enhanced through the adoption of sustainable practices. These practices help reduce waste, lower energy costs, and improve resource efficiency. Additionally, companies that meet growing demand for eco-friendly products can often command premium prices, further boosting their profitability.

Market share is also positively affected by GSCM strategies. Firms that position themselves as leaders in sustainability tend to enhance their reputations, which in turn attracts a broader customer base. As environmental concerns become increasingly important to consumers, governments, and other stakeholders, firms that implement GSCM strategies differentiate themselves from competitors, thereby gaining a larger share of the market. While the connection between GSCM strategies and sales growth may be less direct, firms that align with consumer preferences for sustainability are well-positioned for long-term growth. As demand for green products increases, companies that have adopted GSCM strategies are able to capitalize on this trend by offering environmentally responsible products, which could drive sales over time.

In conclusion, the conceptual framework presented in this study illustrates how GSCM strategies measured through supplier selection, material environmental impact, and regulatory compliance affect firm performance, including profitability, market share, and sales growth. By adopting GSCM strategies, firms can not only enhance their environmental responsibility but also align themselves with shifting market trends and reduce operational risks, all of which contribute to improved performance. The framework underscores the potential of GSCM strategies to drive sustainable business success, particularly within Kenya’s food and beverage manufacturing sector.

Figure 1: Conceptual Framework



Source: Researcher (2024)

## LITERATURE REVIEW

### Theoretical Literature Review

#### Resource Based View (RBV) Theory

This study is grounded in the Resource-Based View (RBV) theory, which explains how a firm's internal resources and capabilities, if they are rare, valuable, difficult to imitate, and non-substitutable, provide a

competitive advantage and enhance performance. Originally proposed by Edith Penrose (1959) and developed further by Barney (1991), the RBV theory highlights the importance of leveraging unique resources to outperform competitors. In the context of green supply chain management (GSCM) strategies, these practices are viewed as strategic assets that can improve operational efficiency, reduce costs, and foster innovation. By integrating environmental sustainability into supply chain operations, firms can differentiate themselves in the market. GSCM strategies, such as collaborating with environmentally responsible suppliers, allow firms to combine resources, leading to competitive advantages. However, the RBV theory's focus on internal resources has limitations, as it may overlook the influence of external factors like market dynamics and environmental regulations. Critics argue for complementary frameworks, such as Relational View or Network Theory, which provide a broader understanding of how external collaborations impact firm performance. Despite its limitations, the RBV theory emphasizes the value of supplier collaboration in enhancing green supply chain effectiveness and achieving mutual environmental and economic benefits.

### **Empirical Literature Review**

Sahoo and Vijayvargy (2021) examined the impact of green supply chain management (GSCM) strategies on organizational performance among Indian manufacturers, focusing on five GSCM dimensions: internal environmental management, green purchasing, cooperation with customers, eco-design, and investment recovery. Using a cross-sectional survey of managers from 160 manufacturing firms, data were analyzed with factor analysis, confirmatory factor analysis, and structural equation modeling (SEM). The findings showed that GSCM practices indirectly enhanced economic performance, though there was no direct effect. The study suggested that future research should use longitudinal data and incorporate both subjective and objective data from various supply chain stakeholders to provide a more comprehensive analysis.

Abdallah and Al-Ghwayeen (2020) explored the influence of GSCM on environmental, operational, and business performance in Jordanian manufacturing firms. The survey-based study involving 215 firms found that GSCM positively affected environmental and operational performance. However, the direct effect of GSCM on business performance was not significant, indicating that its impact was mediated through environmental and operational performance. The authors recommend broadening future research to include a wider range of GSCM strategies and focusing on specific sectors for more targeted insights.

Namagembe et al. (2019) investigated the adoption of green supply chain strategies among manufacturing SMEs in Uganda, evaluating the relationship between five green practices; green purchasing, customer cooperation, investment recovery, internal environmental management, and eco-design, and firm performance. The study found that eco-design and internal environmental management significantly influenced firm performance, while green purchasing impacted economic benefits. The authors suggest more research in Africa to understand the costs and benefits of adopting green strategies and the role of international markets in encouraging green practices.

Cousins et al. (2019) studied the impact of GSCM strategies on business performance, with a focus on supply chain traceability as a moderating factor, using a survey of 248 UK manufacturing firms. Their analysis revealed that GSCM strategies positively influenced environmental and cost-based performance, but supply chain traceability had a negative moderating effect on the relationship between GSCM and environmental performance. The study suggests future research should explore additional moderators and extend the theoretical framework to different contexts.

Yildiz and Sezen (2019) assessed the effects of various GSCM dimensions; such as green purchasing, manufacturing, distribution, packaging, marketing, environmental education, internal environmental management, and investment recovery on sustainability performance among Turkish manufacturing firms. The study, conducted via a cross-sectional survey and analyzed using SEM, found positive relationships between most GSCM dimensions and sustainability performance, except for green purchasing. The authors recommend expanding future research to include different types of organizations and potential moderator effects.

Choi and Hwang (2015) focused on the relationship between GSCM strategies and firm performance in Pakistan's manufacturing industry, considering the mediating role of collaborative capability. Their survey of

317 supply chain managers identified significant impacts of four out of five GSCM practices excluding green purchasing on firm performance. The study suggests further investigation into the specific impact of green purchasing and environmental concerns in supply chains, as well as the applicability of GSCM strategies in diverse regional contexts.

## RESEARCH METHODOLOGY

The research employed a descriptive cross-sectional design (Bryman & Bell, 2018) to examine the link between sustainable supply chain management strategies and firm performance within the food and beverage manufacturing sector. This design was chosen for its ability to effectively capture current strategies and performance metrics at a single point in time. The study focused on 138 food and beverage manufacturing firms in Nairobi City County, Kenya (KAM, 2023). Data was collected using a structured questionnaire, which facilitated detailed data collection, descriptive analysis, and allowed for correlation and prediction (Creswell, 2014). A stratified sampling method was applied, encompassing all 138 firms, with the Yamane formula used to determine a sample size of 164 respondents. A pilot study involving 14 procurement managers and 14 finance managers from 14 companies was conducted to test the reliability of the instrument. Cronbach's Alpha coefficients ranged from 0.770 for Material Environmental Impact to 0.902 for Supplier Selection Criteria, well above the acceptable minimum threshold of 0.50 and the recommended benchmark of 0.70, demonstrating strong reliability.

### Data Processing and Analysis

Correlation analysis was used to evaluate the strength of the relationships between the independent and dependent variables. To further explore these relationships, regression analysis was conducted. The regression model applied in the study is given by:

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

In this model, Y represents the dependent variable (firm performance in the food and beverage manufacturing sector),  $X_1$  denotes the independent variable (green supply chain strategies),  $\beta_0$  and  $\beta_1$  are the coefficients, and  $\epsilon$  represents the error term.

## RESEARCH FINDINGS

The analysis was conducted using the completed and promptly returned questionnaires. Out of the 164 distributed, 149 questionnaires were returned and utilized for the study. All returned questionnaires were fully completed and included in the data analysis, resulting in a response rate of 90.85% based on the sample size.

Table 1: Respondents Response Rate

Response Rate	Frequency	Percentage
Returned	149	90.85%
Non-Responded	15	9.15%
Total	164	100%

Source: Primary data (2024)

### Green Supply Chain Strategies and Firm Performance

Table 2 summarizes the responses related to various indicators of green supply chain strategies. The data reveals that respondents strongly agree on the importance of these strategies. For supplier selection criteria, the mean score is 4.389, indicating a high level of agreement. The analysis shows that this value is significantly different

from 0, suggesting that supplier selection is a crucial aspect of green supply chain practices. Similarly, the indicator for material environmental impact has a mean score of 4.339. This high score, along with a significant t-value, indicates that respondents also strongly value the environmental impact of materials. The result is significantly different from 0, emphasizing the importance placed on reducing the environmental impact of materials in green supply chain strategies. Regulatory compliance scores the highest among the indicators, with a mean of 4.458. This score reflects a strong agreement on the importance of adhering to regulations. The significance tests confirm that this mean is significantly different from 0, highlighting regulatory compliance as a key element in green supply chain strategies. Finally, the overall mean score for green supply chain strategies is 4.395. This result, supported by a very high t-value and a significance level far below 0.05, demonstrates that respondents widely acknowledge the effectiveness of green supply chain strategies. Overall, the data indicates a strong endorsement of these practices, with all indicators showing significant importance and support from the respondents.

Table 2: Summary of Green supply chain strategies indicators

	N	Mean	SD	t	df	Sig. (2-tailed)
Supplier selection criteria	149	4.389	0.505	106.194	148	0.000
Material environmental impact	149	4.339	0.442	119.888	148	0.000
Regulatory compliance	149	4.458	0.464	117.166	148	0.000
Green supply chain strategies	149	4.395	0.338	158.686	148	0.000

N is Number of respondents, SD is standard deviation, SE is standard error of the mean, T is test for equality of means: test value = 0, Ho: mean is not significantly different from 0 at  $\alpha=0.05$ . Reject Ho if  $p < 0.05$ , df is degrees of freedom.

Source: Primary data (2024)

### Correlation of Green Supply Chain Strategies and Performance

Table 3 presents the correlations between firm performance and various green supply chain strategy indicators. Profitability is strongly correlated with both sales growth and market share, with correlation coefficients of 0.856 and 0.772, respectively. This suggests that firms with higher profitability tend to experience greater sales growth and larger market share. The significance levels ( $p < 0.01$ ) indicate that these correlations are statistically significant. Sales growth also shows a significant positive correlation with market share ( $r = 0.505$ ), highlighting that firms with higher sales growth often enjoy a larger market share. This relationship is also statistically significant ( $p < 0.01$ ). Regarding green supply chain strategies, supplier selection criteria have a moderate positive correlation with firm performance ( $r = 0.346$ ), profitability ( $r = 0.291$ ), sales growth ( $r = 0.221$ ), and market share ( $r = 0.313$ ). These correlations are statistically significant ( $p < 0.01$  for firm performance, profitability, and market share, and  $p < 0.05$  for sales growth), suggesting that effective supplier selection contributes to better overall firm performance. Material environmental impact shows weaker correlations with the performance indicators. The correlation with firm performance and other metrics like profitability, sales growth, and market share are not statistically significant ( $p > 0.05$ ), indicating a lesser impact on these aspects. Regulatory compliance has a small but significant positive correlation with firm performance ( $r = 0.165$ ,  $p < 0.05$ ) and market share ( $r = 0.220$ ,  $p < 0.01$ ). It also has significant correlations with supplier selection criteria ( $r = 0.269$ ,  $p < 0.01$ ) and material environmental impact ( $r = 0.272$ ,  $p < 0.01$ ). These findings suggest that while regulatory compliance has a weaker overall effect, it still positively influences several aspects of firm performance and green supply chain strategies. The data indicate that while supplier selection criteria play a notable role in enhancing firm performance, the material environmental impact's effect is less pronounced. Regulatory compliance contributes positively but to a lesser extent, with significant relationships observed mainly with supplier selection and material impact.

Table 3: Correlation between Firm Performance and Green Supply Chain Strategies

		Firm performance	Profitability %	Sales growth %	Market Share %	Supplier selection criteria	Material environmental impact
Profitability %	r	.813**	1.000				
	Sig. (2-tailed)	.000	.				
Sales growth %	r	.856**	.604**	1.000			
	Sig. (2-tailed)	.000	.000	.			
Market Share %	r	.772**	.408**	.505**	1.000		
	Sig. (2-tailed)	.000	.000	.000	.		
Supplier selection criteria	r	.346**	.291**	.221**	.313**	1.000	
	Sig. (2-tailed)	.000	.000	.007	.000	.	
Material environmental impact	r	.128	.152	.044	.128	.323**	1.000
	Sig. (2-tailed)	.120	.064	.591	.120	.000	.
Regulatory compliance	r	.165*	.142	.045	.220**	.269**	.272**
	Sig. (2-tailed)	.045	.084	.585	.007	.001	.001
	N	149	149	149	149	149	149

r= Correlation Coefficient. \*\*. Correlation is significant at the 0.01 level (2-tailed). \*. Correlation is Significant at the 0.05 level (2-tailed)

Source: Primary data (2024)

### Regression Analysis for Green Supply Chain Strategies and Performance

Table 4 provides correlations between firm performance and various aspects of green supply chain strategies. The correlation between firm performance and green supply chain strategies is 0.285, which is statistically significant ( $p < 0.01$ ). This indicates a moderate positive relationship, suggesting that as firms improve their green supply chain strategies, their overall performance tends to improve as well. Profitability shows a significant positive correlation of 0.243 with green supply chain strategies, with a significance level of  $p = 0.003$ . This implies that better implementation of green supply chain strategies is associated with higher profitability, although the correlation is weaker compared to firm performance.

The correlation between sales growth and green supply chain strategies is 0.135, which is not statistically significant ( $p = 0.101$ ). This indicates that there is no strong evidence to suggest that green supply chain strategies have a direct impact on sales growth in this study. Market share has a significant positive correlation of 0.314 with green supply chain strategies, with a significance level of  $p < 0.01$ . This suggests a moderate to strong positive relationship, indicating that firms with more robust green supply chain strategies are likely to have a larger market share. The data suggest that green supply chain strategies have a notable positive impact on firm performance and market share, with profitability also showing a positive but weaker relationship. Sales growth does not show a significant correlation with green supply chain strategies in this context.



Table 4: Correlations between firm performance and Green supply chain strategies

		Green supply chain strategies
Firm performance	Correlation Coefficient	0.285**
	Sig. (2-tailed)	0.000
Profitability %	Correlation Coefficient	0.243**
	Sig. (2-tailed)	0.003
Sales growth %	Correlation Coefficient	0.135
	Sig. (2-tailed)	0.101
Market Share %	Correlation r	0.314**
	Sig. (2-tailed)	0.000
	N	149

N is the number of respondents, \*\*. Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data (2024)

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### Summary

The study on the impact of green supply chain strategies on the performance of food and beverage manufacturing firms in Nairobi City County, Kenya, provides crucial insights into the adoption of eco-friendly practices within the supply chain. The analysis revealed a strong emphasis on regulatory compliance, supplier selection criteria, and material environmental impact as key components of green supply chain strategies. These strategies are associated with environmentally responsible practices, including minimizing the environmental impact of materials, prioritizing suppliers with sustainability certifications, and ensuring compliance with environmental regulations. However, the study found that while green supply chain strategies strongly correlate with regulatory compliance and environmentally-focused operational practices, they do not have a significant direct impact on financial performance metrics such as profitability, sales growth, or market share in the short term.

### Conclusions

The findings suggest that while the adoption of green supply chain strategies contributes significantly to regulatory compliance and environmental stewardship, the immediate financial benefits may not be as pronounced. This indicates that firms in the food and beverage manufacturing sector may need to consider the long-term advantages of green practices, such as enhanced sustainability, reputation, and future profitability, rather than expecting short-term financial gains. The study underscores the importance of aligning supply chain practices with environmental goals to achieve long-term business success and sustainability, even if the immediate financial impact appears limited.

### Recommendations

Based on the study's findings, it is recommended that food and beverage manufacturing firms in Nairobi City County, Kenya, should prioritize the integration of green supply chain strategies with a long-term perspective. While the immediate financial benefits of these strategies may be limited, the focus should be on enhancing regulatory compliance, reducing environmental impacts, and building a strong reputation for sustainability.

Firms should invest in training and development programs to better understand and implement eco-friendly practices, engage in continuous improvement of their green supply chain processes, and communicate their environmental achievements to stakeholders. Additionally, companies should consider establishing partnerships with suppliers who are committed to sustainability and explore opportunities to leverage green practices for future competitive advantage. Emphasizing the strategic alignment of environmental goals with business objectives can help firms achieve sustained success and potentially unlock financial benefits over time.

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