

Green Procurement Practices and Supply Chain Performance of Food and Beverage Processing Firms in Nairobi City County, Kenya

¹Wambui Sinaida Mary, ²Dr. Perris Chege, PhD

^{1,2}Department of Management Science, Kenyatta University

Corresponding Email: wambui.smary@gmail.com

How to cite this article: Wambui, S. M., & Chege, P. (2024). Green Procurement Practices and Supply Chain Performance of Food and Beverage Processing Firms in Nairobi City County, Kenya. *Journal of Procurement and Supply Chain*, 4(2), 16-27.

Abstract

The primary aim of this study was to establish the relationship between green procurement practices and food and beverage processing firms' supply chain performance in Nairobi City County, Kenya. This research employed cross-sectional descriptive research designs. A total of 217 food and beverage processing businesses in Nairobi City County, Kenya, was the target. Stratified random sampling was used to choose a representative sample of 108 companies. Using a drop and pick-later approach, a structured questionnaire was used to collect the primary data. 15 processing companies from nearby Kiambu County participated in a pilot study that the researcher used to evaluate the validity and dependability of the research tool. An internal consistency method with a coefficient of 0.7 or above was considered reliable using Cronbach's Alpha. A diagnostic examination was conducted. Both descriptive and inferential statistics were applied to the data analysis. The mean, percentage, and standard deviations of the data were displayed. To analyze the data, inferential statistics were employed. There is a strong and positive correlation between green procurement methods and supply chain performance. The results confirmed that the variable's P-value was 0.000, $R^2 = 0.446$, $\beta = 0.152$, and $t = 2.503$. According to the study's findings, the majority of Nairobi City County's food and beverage processing companies have embraced green procurement strategies. The research indicates that the processing industry used green procurement extensively in a number of ways, including green specification, cost-cutting, eco-friendly products, environmental policy, green-designed products, environmental impacts, environmental awareness seminars, and the purchase of hard-to-dispose-of items. Therefore, the study concluded that processing firms must heavily invest in green procurement methods with regard to sustainable procurement practices to improve supply chain performance. Organizations should implement rules that prioritize the best green procurement practices. These include procuring products with green specifications and are eco-friendly, the firm to develop an environmental policy, the firm to reduce its environmental impacts in terms of energy conservation and conduct environmental awareness seminars.

Keywords: *Green procurement, supply chain performance, food and beverage processing businesses*

First submission received: 10th June 2024

Revised submission received: 8th July 2024

Published: 11th July 2024

1.0 Introduction

The food and beverage sector is evolving on a global scale as a result of growing customer demands, concerns about sustainability, and demands for greater efficiency. In the modern economy, supply chain performance is the new yardstick of competition rather than the performance of individual companies. The efficiency of a company's supply chain determines its long-term viability (Njenga, 2018). Establishing and sustaining supply chain performance assessment systems is more expensive than it is worthwhile. This is especially true for small enterprises, which may require additional resources—such as time, money, or expertise—to do the analysis that would enhance supply chain efficiency and promote environmentally friendly purchasing methods (Berut, 2020).

Quesada, Gazo, and Sanchez (2017) assert that three critical factors impacting supply chain performance in US food and beverage companies are supplier selection, customer satisfaction, and green procurement methods. Green procurement practices, e-procurement practices, green supplier selection, and reverse logistics practices are critical to the supply chain, not only by reducing paperwork and lead times but also by ensuring a coordinated information flow, which benefits inventory management in the food and beverage industry. Information sharing, supplier selection, and green procurement guidelines, according to Green and Shaw (2020), play critical roles in supply chain performance, including inventory reduction, effective inventory management, enhancing social links, and speedier delivery.

Bor (2021) identified sustainable procurement practices as green procurement, reverse logistics, green manufacturing, and green packaging. Nyile (2016) agrees that supplier involvement, electronic procurement, green procurement, and procurement preferences and reservations are all examples of sustainable procurement methods. According to Epoh and Mafini (2018), there are four key components of sustainable procurement practices: e-procurement, reverse logistics, green supplier selection, and green procurement. The current study used green procurement practices, and e-procurement practices.

Green procurement entails buying products and services that, in comparison to their standard equivalents, have a smaller total environmental impact (Pembere, 2016). This involves investing in goods that have been created with an eye on environmental goals and impacts. The procedure includes waste management, cost-cutting, and green specification. According to Ottere et al. (2017), green procurement comprises choosing goods and services that are more environmentally friendly overall than their regular equivalents. Green procurement, according to Abdul-Rashid et al. (2017), is a thorough strategy that considers organization, people, processes, and technology.

It was discovered that hotels in the United Kingdom partnered with regional vendors. These collaborative efforts entail providing guidance, teaching, and technical assistance in addition to encouraging long-term commitment. Collaborating with supply chain partners improved supply chain efficiency by facilitating the delivery of the required quantity and quality of goods (Font et al., 2008). In the food industry, on-time delivery, schedule modifications, and price variance are the primary metrics used to assess supply chain performance. The selection of suppliers and products is frequently influenced by price competition and environmentally friendly purchasing, with reliability and quality receiving little consideration (Satish & Vivek, 2019). Supply chain performance across industries in the U.K. has taken into account customer service goals, on-time supplier delivery, material availability, inventory investment, and overall profitability using an effective sales and operations planning process (León-Bravo *et al.*, 2017).

Chinese manufacturing companies balance their environmental and economic performance. Chinese companies are increasingly using sustainable procurement as a significant method to improve performance, perhaps in both directions (Zhu & Sarkis, 2004). The Chinese ministry has been developing strategies for managing the environment, such as tightening environmental regulations, promoting ISO 14001 certification, and supporting cleaner production (Zhu & Geng, 2003). These have evolved into a key informational resource for businesses trying to maximize revenues and market share by reducing environmental risks and effects while concurrently improving environmental performance (Van Hock & Erasmus, 2000). Chinese businesses have made some strides toward implementing GSCM procedures. Chinese businesses have switched their attention away from single-plant improvements and toward the entire supply chain in response to demands for sustainable growth and economic globalization.

The Banking Association of South Africa, 2017, provides thorough documentation of the economic contributions made by SMEs in South Africa. Nevertheless, despite the fact that SMEs have helped South Africa's economy grow, a number of supply chain performance issues could be resolved to increase their success (Kengne, 2016). The failure rate of S.M.E.s in South Africa is around an alarming rate of 71%, according to the Small Enterprises Development Agency (2016), suggesting that these businesses need to embrace other techniques to disrupt this negative trajectory and promote growth. They must put the following ideas into practice to enable improved performance of the supply chain: eco-design, reverse logistics, green purchasing, and eco-design (Epho & Mafini, 2018).

The Nigerian food industry's supply chain performance varies depending on the type of business, but the principles and responsibilities are generally the same. Furthermore, supplier selection, e-procurement, and green procurement rules are among the key elements affecting supply chain performance that are linked to sustainable procurement practices (Walker et al., 2022). According to Njoku and Kalu (2017), companies in Nigeria are having trouble deciding on an appropriate performance strategy and identifying the key factors that affect supply chain performance. These incidents include shrinking market share, slow or no sales growth, customer dissatisfaction, declining profitability, layoffs, and declining gross domestic product. Complex food and beverage supply chains are vulnerable to hazards, ineffective procurement processes, logistical challenges, and stockouts as an outcome of both external and internal reasons (Samir & Aman, 2017).

Regionally, Lemma, Singh, and Kaur (2015) conducted a study in Ethiopia and found that a more advanced and efficient supply chain management is best for consistency in performance and financial prosperity. They emphasized that coordination among supply chain participants is unquestionably important to determining the success of the supply chain as a whole, even when the goals and interests of various supply chain participants differ. This indicates that strategic adoption of novel ideas like sustainable procurement methods, whose development greatly facilitated the formation of fruitful connections throughout the supply chain, is required to accomplish the food and beverage processing enterprises' execution.

In relation to food and beverage processing, Kenya is one of the top nations in East Africa. Many food and beverage processing businesses, many of which are located in Nairobi City County, are essential to the Kenyan economy. Despite the rising importance of sustainable procurement methods in the food and beverage processing business, there is still more to learn about the connection between supply chain performance in Nairobi City County, Kenya, and sustainable procurement practices.

According to the World Bank's ESMS implementation handbook (2014), food and beverage companies in Kenya must effectively address and manage several critical environmental and supply chain performance issues to protect the firm's core business operations and profitability. Information sharing, collaboration, supply chain integration, supplier assessment, and environmentally friendly purchasing contribute to Kenya's food supply chain's efficiency.

1.1 Problem Statement

According to information from the KNBS (2018), food and beverage processing firms performed appallingly in their supply chains, resulting in a decline in sales of 7%, an operating income decline of 42%, and a decline in return on assets of 35%, all of which led to a reduction in shareholder return of 7% to 8%. According to K.A.M. (2020), the food and beverage processing companies were ending up at remarkable percentage indices, varying between 49 and 58 percent.

The performance of supply chains has been the subject of extensive research. Still, not much research has been done on how supply chains function in food and beverage industries and how sustainable procurement practices impact them. According to Khisa's (2017) research, adopting green supply chain strategies has a big impact on how Kenyan businesses operate. This is because the study focused on the effect of green procurement methods on corporate execution. Kenyan parastatals supplied the study's qualitative data. The study highlighted the contextual inadequacies that make concentrating on the food and beverage sector necessary. There has to be a conceptual gap to operationalize the study variables based on the green procurement practices indicators proposed by (Bor, 2021) and Epoh and Mafini (2018).

Green procurement techniques at Kenya Pipeline Company were the subject of a study by Nasiche and Ngugi (2018), who discovered that they substantially impacted organizational performance. There was a methodological flaw in the study since the inferential statistics relating to the outcomes of the correlation and regression were not presented. The contextual gap was evident in the need to focus on Kenya's food and beverage industries.

The concentration on green supply chain practices presents the conceptual gaps in operationalizing green procurement and supply chain performance based on food and beverage sector indicators. Therefore, this research was conducted to analyze the influence of green procurement practices on supply chain performance in food and beverage processing firms in Nairobi City County, Kenya.

1.2 Research Objective

The study sought to establish the relationship between green procurement practices and food and beverage processing firms' supply chain performance in Nairobi City County, Kenya.

2.0 Literature Review

2.1 Theoretical Review

This study will be informed by institutional theory. Institutional theory was developed by Berger and Luckmann (1967). It recognizes the significance of resources while taking into account aspects like culture, social context, regulation (including legal context), tradition and history, and economic incentives. Theoretically, institutional theory provides a way for researchers to identify and study the impact that sustains and legitimizes organizational practices (Brunton et al., 2010). It allows for the adoption of sustainable practices that stakeholders consider appropriate and appropriate in such circumstances (Dimaggio & Powell, 1983).

According to institutional theory, organizations maintain their standing and legitimacy by adhering to the rules and regulations of the institutional setting (DiMaggio & Powell, 1983; Scott, 2007). Regulatory frameworks, political entities, laws, courts, professions, scripts, and other social and cultural norms and standards that put pressure on conformity are examples of institutional norms and standards. The goal of institutional theory has been to compel ethical behaviour or to promote it in the eyes of other interested parties, which has a negative impact on corporate strategy and decision-making within organizations (Jennings, 1995; Zanderbergen, 1990).

The foundations of this theory include that a corporation should create sustainable procurement processes in response to external conditions that compel enterprises to adopt particular green practices (Sarkis et al., 2010; Lee et al., 2013). If companies truly care about the environment and there is support from the public, environmental practices must be applied more quickly throughout the supply chain (Tritos et al., 2013). Because of increased external demand to be sustainable—which entails adhering to environmental laws that are closely related to SSP—processing industries are under pressure to go green (Lee et al., 2013).

The critique of the institutional theory is relabeled as the embedded agency paradox (Battilana, 2006; Edwards, 2013). In this sense, Holm (1995) describes the problem of structure-agency as the question of “how can actors transform institutions if their behavior, intentions, and rational thought are conditioned by the institution they wish to transform?”

Theoretically, institutional theory provides a way for researchers to identify and study the impact that sustains and legitimizes organizational practices (Brunton et al., 2010). It allows for the adoption of sustainable practices that stakeholders consider appropriate and appropriate in such circumstances. The current study assessed how adoption of sustainable procurement practices including green procurement practices, green supplier selection, e-procurement practices and reverse logistics practices influences supply chain performance. As such, the theory was applicable in this case because it provided a link between sustainable procurement practices and supply chain performance.

2.2 Empirical Review

Nyile (2016) conducted a study on how Kenya's industrial sector's supply chain performance is affected by sustainable procurement methods. The research's goals include green procurement, supplier involvement, electronic procurement, and preferences and hesitations in purchasing. The East African Portland Cement Company case study research design was used for the investigation, and at the EAPCC headquarters in Machakos County, 60 staff members served as the study's sample size. EAPCC's supply chain performance was positively and significantly impacted by green procurement techniques by 35.7%. The study further revealed that EAPCC had significantly included green techniques in its supply chain management operations. The study, however, employed an EAPCC case study research approach, whereas the current study will concentrate on a wider range of processing enterprises. The methodological gap was identified in that study. The design for the research was an EAPCC case study therefore making the results challenging to verify.

Pembere (2016) investigated the supply chain performance in relation to green procurement practices of firms listed on the NSE. E-procurement, Supplier development, lean supply, and supplier selection are among the goals of the research. The study design employed was descriptive. The study's conclusions showed that supply chain performance is enhanced by green procurement strategies. The contextual gap identified in this case is the methodological gap. The research focussed on a small sample size, i.e., companies listed at the Nairobi

Securities Exchange. A small sample size leads to unreliable results. The current study concentrated more on food and beverage processing firms, allowing a more precise estimate and generalizing the results.

Ochieng (2019) examined the effect of green purchasing techniques on the operations of Kenyan chemical-producing companies. The survey's objectives included; purchase of environmentally friendly products, green manufacturing, green distribution, and reverse logistics. By a mean of 4.36, the research discovered that green procurement methods had a big effect on how well-performing big chemical manufacturing companies in Kenya were. The gap identified in this study was contextual. The research aimed at the overall execution of manufacturing firms.

One of the most acknowledged components of sustainable procurement practices is the adoption of green procurement techniques. Bor (2021) investigated the execution of food and beverage processing industry as well as green supply chain management techniques. The study's objectives include packaging, reverse logistics, green manufacturing, and procurement. The target audience for the survey consisted of one senior manager from each organization who might be connected to the supply chain, production, or safety & environment departments. Questionnaires were used to acquire the data. The research's conclusions showed supply chain performance was directly impacted by green procurement techniques. The gap identified in the survey was the methodological gap. Census was used in the research. This study used a stratified random sampling method since it captured important characteristics of the population in the sample and reduced cost in monetary terms and staffing requirements.

2.3 Conceptual Framework

The connection between dependent and independent variables serves as the basis for figuring out predicted results.

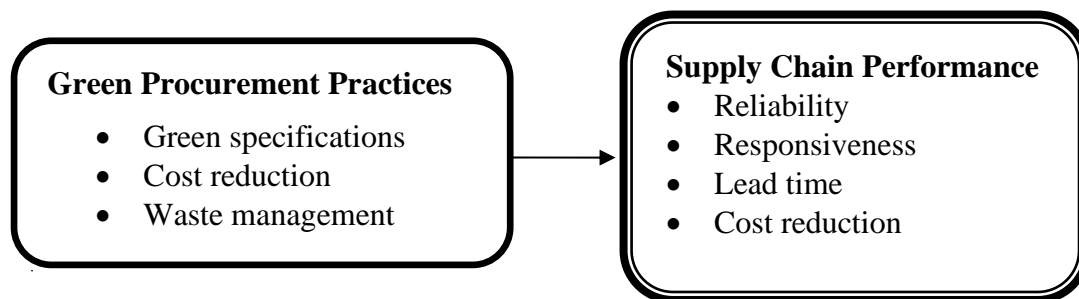


Figure 1: Conceptual Framework

3.0 Methodology

This research employed cross-sectional descriptive research designs. A total of 217 food and beverage processing businesses in Nairobi City County, Kenya, was the target. Stratified random sampling was used to choose a representative sample of 108 companies. Using a drop and pick-later approach, a structured questionnaire was used to collect the primary data. 15 processing companies from nearby Kiambu County participated in a pilot study that the researcher used to evaluate the validity and dependability of the research tool. An internal consistency method with a coefficient of 0.7 or above was considered reliable using Cronbach's Alpha. A diagnostic examination was conducted. Both descriptive and inferential statistics were applied to the data analysis. The mean, percentage, and standard deviations of the data were displayed. To analyze the data, inferential statistics were employed.

4.0 Results and Discussion

4.1 Descriptive Statistics

4.1.1 Descriptive for Green Procurement Practices

This study's objective was to determine how Kenya's Nairobi County's food and beverage processing companies' supply chains performed in relation to green procurement methods. Using a five-point Likert scale, the respondents were asked to rank particular facets of their companies' green buying policies.

Table 1: Green Procurement Practices

Statements	N	Mean	Std
The company procures products with green specifications	140	4.14	1.38
The products procured are eco-friendly	141	3.32	0.91
The company has an environmental policy	141	3.79	1.43
The Green designed products are expensive	134	2.5	1.18
The firm has tried to reduce its environmental impacts in terms of energy conservation	137	3.48	1.42
An environmental criterion is applied when making purchasing decisions	141	3.78	1.36
The business has been holding lectures on environmental awareness.	141	3.64	0.89
The business has bought fewer things that are challenging to get rid of.	139	3.84	0.95
Average score		3.561	1.19

Source: Field data, 2024

Green procurement procedures are used sparingly, according to the results shown in the above table, which have an average mean of 3.561 and an average standard deviation of 1.19. Table 1 presents the findings, which show that most respondents practiced the first part of the study—purchasing products with green criteria, as indicated by a mean score of 4.14 and a standard deviation of 1.38. The statement on the buying of eco-friendly products was deemed acceptable by the respondents, as evidenced by the mean score of 3.32 and standard deviation of 0.91. When asked about the company's environmental policy, the respondents answered that it was in place; A mean score of 3.79 with a standard deviation of 1.43 suggested this. With a mean of 2.5 and a standard deviation of 1.18, the majority of respondents thought that expensive products with green designs were. With a mean score of 3.48 and a standard deviation of 1.42, the respondents also agreed that the company had attempted to reduce its impact on the environment by conserving energy. A mean of 3.78 and a standard deviation of 1.36 indicate that environmental criteria are utilized while making purchasing decisions. The company has been holding seminars on environmental awareness, as seen by the 3.64 mean and 0.89 standard deviation. The company has also cut back on its purchases of hard-to-get-rid-of commodities, which is above normal ($m=3.84$, SD of 0.95).

Results agree with Nyile (2017) that green specifications and waste management have a positive influence on supply chain performance with greatest impact being on environmental impact and cost reduction. Thus, the conclusion made by Ochieng (2019) that the performance of major chemical manufacturing companies in Nairobi County, Kenya, is impacted by green

purchasing practices is supported. This is in line with Resource-based theory that supports green business practices to increase organizational performance and distinctive advantages (Shan et al., 2019).

4.1.2 Descriptive for Supply Chain Performance

The dependent variable for the study was the performance of food and beverage processing companies. The primary metrics employed to reveal the supply chain performance attributes of the companies were responsiveness, lead time, cost-cutting, and dependability.

Table 2: Supply chain Performance

Statements	N	Mean	Std
Reduces discretion & increases transparency	134	3.38	0.92
The business now operates with greater dependability.	140	3.35	0.94
Reduces administrative costs with better effectiveness	139	2.89	1.08
The firm has a responsive supply chain	131	2.96	1.02
Firm has reduced lead time	128	3.05	0.96
Improves SC managers decision making	133	2.55	0.91
Increases speed and efficiency of the procurement process	129	2.67	0.94
Decrease in the costs of raw materials or components	120	2.21	0.95
Average score		2.88	0.965

Source: Field data, 2024

The findings are tabled above and they reveal that supply chain performance shows an average score of mean 2.88 and standard deviation of 0.965. This suggests that the participants reached a consensus over the average success of supply networks. This infers that performance of food and beverage companies has been moderate. The means were: 2.96 and 1.02 for the firm with a responsive supply chain; 3.38 and 0.92 for transparency and reduced discretion; 3.35 and 0.94 for the firm's operational reliability; 2.89 and 0.08 for reduced administrative cost; 2.55 and 0.91 for decision-making improvement; 2.67 and the procurement process's efficiency and completion time both came in at 0.94; and finally, 2.21 and 0.95 for reduced raw material cost.

The metrics employed in this research align with those of Chege (2017) and Berut (2020), which assess the supply chain efficacy of major manufacturing companies and milk processing enterprises in Kenya, respectively. They measured supply chain effectiveness using lead time, cost savings, responsiveness, and dependability. They also verified that the supply chain performance in the Kenyan business environment is still in its early stages and that putting them into practice will need a great deal of research and thought. This is in support of diffusion of Innovation Theory by Rodgers (1962) which was used in early days of communication to describe how a certain concept or product would slowly gain acceptance among a particular set of people or society. Since it views Supply chain performance as innovation: the diffusion process describes how ideas proliferate among people in a social system over time and through specific routes.

4.2 Correlation Analysis

The Pearson correlations for these variables are shown in Table 3. The findings demonstrate a substantial positive association between sustainable procurement methods and supply chain performance, with corresponding Pearson correlation coefficients of 0.236 and 0.248. These correlation coefficients are both less than 0.05, with P values of 0.008 and 0.005, respectively.

Table 3: Correlation matrix

		Supply chain performance	GPP
Supply chain performance	Person Correlation	1	.236(**)
	Sig. (2-tailed)		.008
	N	83	84

Source: Field data, 2023

4.3 Diagnostics Tests

The study used multicollinearity, linearity, and normalcy tests as diagnostic tools. The purpose of the tests was to determine whether the data was accurate, dependable, and able to be used to extrapolate the study's findings to the general public.

4.3.1 Normality test

The normality test was done on sustainable procurement practices and supply chain performance. The outcome included p-value for GPP = 0.974; and SCP = 0.979. P values >0.05 indicate that the data was normally distributed.

Table 4: Normality

Kolmogorov-Smirnov ^a			Shapiro-Wilk			
Statistic	df	Sig.	Statistic	df	Sig.	
GPP	.082	98	.123	.974	98	.052
SCP	0.068	98	0.200*	0.979	98	0.11

a. Lilliefors Significance Correction

4.3.2 Linearity test

Correlation analysis was performed to determine whether the variables were linearly connected. As a result, the substantial positive correlation coefficients for each of the explanatory factors are present. When SCP moves in the same direction as the variables, a linear relationship is assumed. Based on the noteworthy and affirmative correlation, one can deduce that the independent variable coefficients in the regression models were similarly positive. Furthermore, the coefficients' importance suggests that the model's linear assumptions might be accurate.

Table 5: Linearity

Reference Variable:	Test statistics	
SCP		
Correlation value	P value	
GPP	0.432**	0.000

4.4.3 Multicollinearity test

The study used the predictor constructs' tolerance and variation inflation factor (VIF) statistics to determine if the independent variables were collinear. To determine whether multicollinearity was present, the Variance Inflation Factor (VIF) was retrieved (Billings & Wroten, 1978). Since every VIF was less than 2.0, Hair et al. (2009) concluded that there were no possible risks from multicollinearity. When employing a regression analysis model, multicollinearity among the Independent (Predictor) variables is an issue. According to Hair et al. (2006), evaluating multicollinearity involves examining the correlation matrix for the independent variables and calculating the variance inflation factor (VIF) and tolerance values.

The variance inflation factor threshold value of 4.0 was adopted by the study to indicate a strong multicollinearity status. Table 6 presents the findings, which indicate that the independent constructs reached a high tolerance value. This suggests that the beta values of the independent constructs' regression equation would be stable and have low standard error terms. When determining the confidence bounds on the partial regression coefficient, tolerance is taken into account as a component of the denominator. Porter and Gujarat (2009) state that an independent construct is considered collinear if its VIF is more than 10. Therefore, it appears that there was no multicollinearity between the explanatory constructs when utilizing this rule of thumb as a benchmark.

Table 6: Multicollinearity Testing

Model	Tolerance	VIF
1 GPP	.734	1.362

a. Supply chain performance

4.4 Regression Analysis

Table 7 displays the values $\beta_1 = 0.152$. With p values of 0.012, they deviate considerably from 0 and are therefore considered significant because they are less than 0.05. The findings of Bor, (2021) and Nyile (2017) that sustainable procurement procedures and green supply chain management techniques are necessary for effective supply chain performance are supported by these results.

Table 7: Regression of sustainable procurement practices on supply chain performance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.151	.043		-3.428	.001
GPP	.152	.063	.213	2.503	.012

5.0 Conclusion

According to the study's findings, the majority of Nairobi City County's food and beverage processing companies have embraced green procurement strategies. This may be explained by the substantial correlation seen in Kenyan food and beverage processing companies' performance and sustainable buying methods. The research indicates that the processing industry used green procurement extensively in a number of ways, including green specification, cost-cutting, eco-friendly products, environmental policy, green-designed products, environmental impacts, environmental awareness seminars, and the purchase of hard-to-dispose-of items. Therefore, the study concluded that processing firms must heavily invest in green procurement methods with regard to sustainable procurement practices to improve supply chain performance.

6.0 Recommendations

Organizations should implement rules that prioritize the best green procurement practices. These include procuring products with green specifications that are eco-friendly, the firm to develop an environmental policy, the firm to reduce its environmental impacts in terms of energy conservation, and conduct environmental awareness seminars.

References

- Abdul-Rashid, S. H., Sakundarini, N., Ariffin, R., & Ramayah, T. (2017). Drivers for the adoption of sustainable manufacturing practices: A Malaysia perspective. *International Journal of Precision Engineering and Manufacturing*, 18, 1619-1631.
- Battilana, J. (2006). Agency and institutions: The enabling role of individuals' social position. *Organization*, 13(5), 653-676.
- Berut, Z. J. (2020). *Influence of Supply Chain Collaboration on Performance of Dairy Processing Firms in Kenya* (Doctoral dissertation, JKUAT-COHRED).
- Billings, Robert S., and Steve P. Wroten. "Use of path analysis in industrial/organizational psychology: Criticisms and suggestions." *Journal of Applied Psychology* 63.6 (1978).
- Bor, J. K. M. (2021). *Green Supply Chain Management Practices and Performance of Food and Beverage Processing Sector in Kenya* (Doctoral dissertation, JKUAT-COHRED).
- Chang, S., Hu, B., & He, X. (2019). Supply chain coordination in the context of green marketing efforts and capacity expansion. *Sustainability*, 11(20), 5734.
- Grean, M., Shaw M.J. (2020) Supply-Chain Partnership between P&G and Wal-Mart. In: Shaw M.J. (eds) E-Business Management. Integrated Series in Information Systems, vol 1. Springer, Boston, MA.
- KAM, 2018. Manufacturing in Kenya Under the 'Big 4 Agenda' *A Sector Deep-dive Report*.
- Kengne, J. (2016). Dynamical analysis of a simple autonomous jerk system with multiple attractors. *Nonlinear Dynamics*, 83, 751-765.
- Langton, I., Mafini, C. and Epoh, L.R., 2023. A Model for Green Supply Chain Management in the South African Manufacturing Sector.
- Lemma, H. R., Singh, R., & Kaur, N. (2015). Determinants of supply chain coordination of milk and dairy industries in Ethiopia: a case of Addis Ababa and its surroundings. *SpringerPlus*, 4, 1-12.

- León-Bravo, V., Caniato, F., Caridi, M., & Johnsen, T. (2017). Collaboration for sustainability in the food supply chain: A multi-stage study in Italy. *Sustainability*, 9(7), 1253.
- Njenga, C. K. (2018). Determinants of Integration of Lean Procurement Methodologies in Aviation Industry in Kenya: A Case of Kenya Airways Limited. *Strategic Journal of Business & Change Management*, 5(2), 1908 – 1932
- Nyile, E. K. (2016). Role of Sustainable Procurement Practices on Supply Chain Performance of Manufacturing Sector in Kenya: A Case Study of East African Portland Cement Company. *European Journal of Purchasing & Supply Management*. 1-31.
- Ochieng, B. E. (2019). Effects of Green Purchasing Practices on the Performance of Large Chemical Manufacturing Firms in Nairobi County, Kenya. *International Journal of Progressive Sciences and Technologies*, 12(2), 87-93.
- Otter, C., Watzl, C., Schwarz, D., & Priess, P. (2017). Towards sustainable logistics: a study of alternative delivery facets. *Entrepreneurship and Sustainability Issues*, 4(4), 460-476.
- Payan, J. M., Hair, J., Svensson, G., Andersson, S., & Awuah, G. (2016). The precursor role of cooperation, coordination, and relationship assets in a relationship model. *Journal of Business-to-Business Marketing*, 23(1), 63-79.
- Pembere, D. (2016). Green Procurement Practices and Supply Chain Performance Of Companies Listed at The Nairobi Securities Exchange. *Unpublished Thesis University of Nairobi*.
- Porter, C., & Gujarat, P. (2009). Research methodology: Methods and techniques.
- Powell, W. W., & DiMaggio, P. J. (Eds.). (1983). *The new institutionalism in organizational analysis*. University of Chicago Press.
- Samir, D., & Aman, D. (2017). Fragile food supply chains: reacting to risks. *International Journal of Logistics Research and Applications: A Leading Journal of Supply Chain Management*, 13(5), 395-410.
- Sarkis, J., & Zhu, Q. (2018). Environmental sustainability and production: taking the road less traveled. *International Journal of Production Research*, 56(1-2), 743-759.
- Walker, H., & Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*.
- Walker, H., Miemczyk, J., Johnsen, T., & Spencer, R. (2012). Sustainable procurement: Past, present and future.
- Zhu, Q., & Sarkis, J. (2007). The moderating effects of institutional pressures on emergent green supply chain practices and performance. *International journal of production research*, 45(18-19), 4333-4355.
- Zhu, Qinghua, Geng, Yong. (2008). Study on factors of green supply chain management among Chinese manufacturers. *Chinese Journal of Management Science*, 12(3), 81-85