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Assessing the Relationship between Sustainable Procurement and Performance Optimization in Selected FMCG Firms

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Abstract:- In the pursuit of maintaining a competitive advantage and ensuring long-term business success, it has become imperative for manufacturing industries and businesses to adopt eco-friendly techniques and protocols in their operations. This is essential not only for preserving productivity but also for achieving sustainability in a highly competitive environment. Consequently, the primary aim of this study is to gain an in-depth understanding of the impact of green procurement management on the operational performance of selected fast-moving consumer goods (FMCG) companies in Lagos State, Nigeria. The study employed both descriptive and causal research designs, utilizing survey methods to examine whether green procurement management practices influence the profitability of selected manufacturing firms. The research population comprised 990 individuals, from which a sample size of 285 was determined. A structured and well-administered questionnaire served as the primary data collection instrument. Notably, 269 complete questionnaires were retrieved and appropriately filled out. The reliability of the research instrument was confirmed with Cronbach's alpha coefficient of 0.9966. Data was analyzed using multiple regression analysis. Findings revealed a significant relationship between green procurement management practices and organizational performance. The study concludes that these eco-friendly practices positively impact the performance of selected FMCG firms in Lagos. It recommends broader adoption of green procurement practices across Nigeria, Africa, and globally. Furthermore, future research should focus on small and medium-sized enterprises (SMEs) in other geopolitical zones or states.

Keywords: Green procurement, operational effectiveness, organisational performance, Performance optimization, operational excellence

1. Introduction

Global warming has become a source of global concern due to its far-reaching impact on the environment. Issues such as rapid resource depletion, pollution, climate change, and the loss of biodiversity are steadily eroding the ecological balance (Sahoo & Vijayvargy, 2020). Around the world, countries are facing increasing pressure to address the environmental degradation largely driven by human activities. In response, many energy-saving and pollution-reduction policies target manufacturing companies, major contributors to environmental challenges. This has led to growing calls for manufacturing firms to rethink their supply chain operations to minimize environmental harm.

With the heightened global focus on sustainability, companies are being encouraged if not compelled to embed green practices within their supply chains (Micheli et al., 2020). The goal for both scholars and industry leaders has always been to enhance performance. Research suggests that companies' reliance on scarce or high-value resources can motivate them to collaborate more closely with supply chain partners. Strategic alliances, especially in the form of green procurement and supplier collaboration, can support environmental, economic, and operational objectives (Fang & Zhang, 2018).

Today, managing green supply chains has become increasingly complex. Businesses face rising expectations from stakeholders- consumers, regulators, environmental groups, and legal bodies to take meaningful steps toward environmental responsibility. Many organizations are shifting from reactive to proactive strategies, embedding sustainable practices into their operational frameworks and corporate policies (Oliveira et al., 2018).

In an era of constant competition, businesses must continuously seek better ways to innovate, satisfy customers, and effectively use their resources. Operational effectiveness is no longer optional; it's essential for sustained performance. While it's often viewed as an internally driven strategy, this study explores the role of green procurement practices in enhancing operational effectiveness. The main objective is to examine how adopting environmentally conscious procurement strategies influences organisations' operational performance.

Research Hypothesis

i. There is no significant relationship between sustainable green procurement practices and performance optimization

2. Literature Review

2.1 Green Procurement

As an emerging technique within Green Supply Chain Management (GSCM), green procurement plays a crucial role in shaping the upstream segment of a company's supply chain. It establishes environmental standards for goods sourced from suppliers and fosters collaboration to meet shared environmental objectives. In contrast, close customer collaboration influences the downstream part of the supply chain through participatory efforts such as consumer engagement, client support, and joint initiatives, all aimed at encouraging environmentally responsible behavior among end users (Fang & Zhang, 2018).

Eco-design is another impactful strategy that reduces a product’s environmental footprint by ensuring sustainability throughout its lifecycle, from raw material sourcing to manufacturing, usage, and disposal, without compromising product quality (Fang & Zhang, 2018). As organizations strive to enhance operational performance while addressing environmental concerns, GSCM is increasingly seen as a practical and strategic alternative. Initially adopted in response to resource depletion and rising pollution levels, green supply chain practices are now recognised for their dual benefits: environmental protection and performance improvement (Oliveira et al., 2018). Measures such as reducing waste and energy consumption have been shown to yield immediate economic and reputational gains (Panya et al., 2021).

Historical events like oil crises and ongoing consumer-driven demand for natural resources have escalated pressure on raw material supplies. Consequently, the focus has shifted toward conservation and using recyclable resources (Appohwood & Makafui, 2019). Green procurement encompasses the acquisition of eco-friendly goods, contractor selection, and establishing environmentally responsible subcontract agreements. Rooted in pollution prevention principles, it evaluates the cost, technology, durability, and environmental impact of goods, services, and contracts. Importantly, green procurement policies are applicable to organizations of all sizes (Srinvas, 2022).

This comprehensive approach, also known as sustainable procurement, incorporates organizational culture, people, processes, and technology. Many companies have realized that improvements in energy efficiency, waste reduction, and the use of recycled materials can lead to significant cost savings (Appohwood & Makafui, 2019). Green procurement strategies can range from simple steps, such as purchasing recycled office paper or renewable energy, to more complex efforts like setting environmental standards for vendors and contractors. "Green" products are designed to use fewer resources, last longer, and reduce environmental harm throughout their lifecycle. These products also tend to have minimal impact on human health and often meet or exceed safety

standards. Although some eco-friendly products may have higher upfront costs, they often result in lower total costs over their lifetime (Srinvas, 2022).

Before implementing a green procurement program, evaluating existing procurement practices and policies is essential. This process should include a life cycle assessment of environmental impacts and establishing clear environmental criteria for procurement decisions. A robust green purchasing policy should outline specific priorities and timelines, assign responsibilities, and include a comprehensive communication and marketing strategy. When implemented effectively, green procurement policies can reduce costs, minimize waste, improve operational efficiency, and influence markets, pricing, service availability, and organizational behavior (Srinvas, 2022).

However, several challenges can hinder the successful adoption of green procurement programs. These include the limited availability of eco-friendly products, the high cost or lack of zero-impact alternatives, inaccurate environmental data, insufficient organizational support, and misleading or unsubstantiated environmental claims by suppliers and manufacturers (Srinvas, 2022).

2.2 Organisational Effectiveness

In business, competition is inherent and, therefore, inevitable. Regarding product development (innovation, customer satisfaction, and the like), striving to be better and more effective with business resources is important. This is achievable through operational effectiveness and its respective best practices (SolveXia, 2019). One of organisational theory's most popular research subjects is organisational effectiveness (OE). It is not only about organisational performance, but it is an important aspect of it. OE stands for "organisational success" or "organisational worth," and it has been studied as a measure of organisational performance for decades. In order to build procedures that meet consumer expectations, operational effectiveness is a critical aspect in every firm (Dhoopar et al, 2022).

Enterprises trying to stay afloat in today's market must recognise that markets and environments are constantly changing, and competition is fierce. These conditions are threats to organisations' performance, and they can be overcome by improving internal processes, making them more efficient, and thus lowering operational costs (Perez et al, 2019). Organisations have used two basic techniques to achieve long-term competitive advantage: cost leadership and differentiation. Operational effectiveness is one of the cost leadership techniques since it affects the company's productivity, which greatly impacts competitiveness. As a result, companies must concentrate on the following dimensions: speed, flexibility, dependability, cost, and quality (Perez et al, 2019).

The notion of operational effectiveness has been defined in terms of goal achievement, resource procurement, internal process efficiency, and stakeholder satisfaction. Operational effectiveness refers to an organisation's capacity to build procedures based on fundamental competencies that encourage it to exceed customer expectations. It is the ability to accomplish similar tasks better than competitors (Dhoopar et al, 2022). This term encompasses, but is not confined to, efficiency. It refers to any and all methods that enable a company or organisation to make the most use of its resources. Management's capacity to transform tools and processes into gains and long-term profitability, which is the foundation for great performance, is reflected in operational effectiveness (Ugoani, 2018).

Operational effectiveness entails directing and controlling the firm's operations to improve and measure process performance. By using resources better through these essential processes, the company may remove waste, save expenses, adapt more relevant technical developments, and outperform rivals. Operational effectiveness in the workplace involves all the output by human and technological resources within a business. Design and operational strategy (best practices) drive an organisation's value stream. It includes all aspects of operating a business in a manner to be better or quicker while avoiding errors (Santa et al, 2019).

Operational effectiveness is achieved when a business maximises the use of inputs to produce its outputs. By doing so, the business can gain a competitive advantage within its market and develop products faster. It comes down to possessing the ability to outperform competition by providing employees with resources to do so without sacrificing quality (SolveXia, 2019). Companies gain operational effectiveness in various ways, including flexibility, quality, speed, and cost. Flexibility is a key feature in companies since it is viewed as a core skill, regardless of the kind of organisation. Quality includes several purposes, including meeting consumers' needs and providing items they demand. Another element is defect-free production, which significantly influences cost performance. Regarding operational effectiveness, speed is defined as the company's response time in case of any changes in customer requirements or market developments that necessitate quick responses from the company in the area of delivering new goods, services, and processes (Perez et al, 2019).

Cost performance refers to achieving organisational objectives at the lowest possible cost. Cost performance focuses on efficiency, aligning, and arranging processes to produce the least waste in internal and external organisational operations. Optimising these elements entails analysing and recognising the company's existing condition and ensuring operational performance in the organisation, allowing the firm to respond to changes in the market environment and becoming more competitive (Perez et al, 2019). While operational effectiveness might be a key to a company's competitiveness, this can only be achieved if the company operates better and quicker than the competitors. In this spirit, organisational success is based on operational effectiveness, which allows a company to act better and quicker than its competitors and provide value-added services or goods that meet consumer expectations (Perez et al, 2019).

2.3 Theoretical Justification

Triple Bottom Line (TBL) Theory

The Triple Bottom Line (TBL) theory is a sustainability framework that encourages businesses to focus on financial performance and social and environmental impacts. John Elkington popularised the concept in his 1994 book "Cannibals with Forks: The Triple Bottom Line of 21st Century Business." The philosophy behind the TBL is that businesses should commit to measuring their social and environmental impact in addition to their economic performance (Farooq, Fu, Liu, & Hao, 2021). The TBL framework is often summarized by the "three Ps" which are People which focuses on the social responsibility of the business, emphasizing fair treatment of stakeholders, community engagement, employee relations, and positively impacting society; Planet which is the dimension that addresses environmental sustainability, urging businesses to reduce their ecological footprints by adopting practices that protect the environment, conserve resources, and promote biodiversity; and Profit which is he

traditional measure of business success, profit, remains essential, but it should not overshadow the importance of social and environmental responsibilities (Famiyeh, Opoku, Kwarteng, & Asante-Darko, 2021).

The major advantages of this theory include an enhanced reputation of Companies which are committed to sustainability, and they often gain a competitive advantage and improve their brand image, attracting customers who value ethical practices. It also mitigates risks by addressing social and environmental risks, thereby making businesses able to reduce their exposure to potential regulatory fines, public backlash, and reputational damage. It creates market opportunities for organisations by focusing on sustainability, which could lead to new market opportunities, driving innovation in products and services that meet the growing demand for eco-friendly solutions (Munjal, & Sharma, 2023). A strong commitment to social and environmental responsibilities can boost employee morale and engagement, leading to higher productivity and retention, while creating long-term viability by addressing their operations' social and environmental dimensions, thereby contributing to sustainable development, ensuring their long-term success and viability in an increasingly resource-constrained world. The Triple Bottom Line theory encourages a holistic view of business success, emphasizing that true profitability must include responsibility towards society and the environment (Bamidele, Ozturen, Haktanir, & Ogunmokun, 2023).

3.0 Methodology

This study adopted a descriptive research design, which was considered appropriate for examining the relationship between the independent and dependent variables. The target population comprised employees of Flour Mills, Unilever and PZ, leading fast-moving consumer goods (FMCG) company in Lagos State. The estimated total population was 990 employees.

Taro Yamane’s formula was used to determine the appropriate sample size. This method provides a standard approach for estimating sample size with a 95% confidence level and a 5% margin of error. Based on this calculation, the study's sample size was 285.

A combination of simple random sampling and stratified sampling techniques was employed. Stratified sampling allowed the researcher to group the population based on relevant categories, after which simple random sampling was applied to give each respondent an equal and independent chance of selection (Adesanya et al., 2024; Arejiogbe et al., 2023). This approach ensured fairness and representativeness in the selection process.

Both primary and secondary data were utilised. Primary data were collected using a well-structured, closed-ended questionnaire designed to align with the study's objectives and research questions. The questionnaire was divided into sections: the first captured demographic information, while subsequent sections addressed topics on green procurement and organisational effectiveness. Respondents rated their agreement with various statements using a 5-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree."

To ensure validity, both face, and content validity methods were applied. Face validity involved consultation with subject matter experts to confirm that the items measured the intended constructs. Content validity ensured the comprehensive coverage of all relevant concepts through proper conceptualization and operationalization. Cronbach’s alpha coefficient was employed to measure reliability, confirming the internal consistency of the research instrument.

Data collected were analysed using regression analysis and processed through the Statistical Package for Social Sciences (SPSS) to draw meaningful insights and test the study's hypotheses.

4.0 Results and Analysis

The questionnaire was admitted through google online forms and filled by the employees of Flour Mills Nigeria Plc, Unilever Nigeria and PZ Nigeria Plc.

Table 1: Response Frequency

QUESTIONNAIRE	FREQUENCY	VALID PERCENTAGE
Valid	269	94.4%
Invalid/unfilled	16	5.6%
Total	285	100%

Source: Researcher's Survey, 2024

Table 1 shows the details of the response rate. Out of the 285 copies sent out, 16 (5.6%) could not be retrieved, while 269 (94.4%) were retrieved for the analysis. This reflected a 94.4 percent response rate, which made it relevant to draw conclusions on the relationship between the variables.

Table 2: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.882	30

Source: Researcher's survey, 2024

The table above indicates a Cronbach's alpha score of 0.890, considered a high and reliable score. This implies that the study findings are highly reliable (Ogbari, Folorunso, Simon-Ilogho, Adebayo, Olanrewaju, Efegbudu, & Omoregbe, 2024). Data was analysed using frequencies and simple percentages. Regression Analysis was also conducted to ascertain the effects of the independent variable (green procurement management techniques) on the dependent variable (organisational performance).

Table 3: Demographic characteristics of Respondents

Demographic Variables	Construct	Percentage	Total
Gender	Male	168	62.5
	Female	101	37.5
Total		269	100
Age	Below 30 years	72	26.8
	31 - 40 years	103	38.3
	41- 50 years	62	23.0
	51 years and above	32	11.9

Total		269	100
Marital Status	Single	122	45.3
	Married	135	50.2
	Others	12	4.5
Total		269	100
Work experience	1-5 years	81	30.1
	6- 10 years	83	30.9
	11-15 years	76	23.2
	16 years – Above	29	10.8
Total		269	100
Education	SSCE	26	9.7
	BSc/ HND	201	74.7
	M.Sc. / MBA	42	15.6
	Others	0	0
Total		269	100
Management	Top	12	4.4
	Middle	65	24.2
	Lower	192	71.4
Total		269	100

Source: Researcher's Survey, 2024

Results shown in Table 2 depicts the demographic characteristics of respondents.

Gender: Specifically, a high percentage of respondents were male 168 (62.5%), while 101 (37.5%) of the respondents were female.

Age: 72 (28.8%) respondents were below 30 years of age, 103 respondents (38.3%) were between the ages of 31-40 years, 62 respondents (23.0%) fell within the age range of 41-50years, while 32 respondents (11.9%) were 51 years and above.

Marital status: Specifically, a high percentage of respondents was married 135 (50.2%), 122 (45.3%) were single, while 12 (4.5%) respondents fell under the "others" category.

Work experience: 81 (30.1%) respondents had stayed in the organisations within 1-5years, 83 (30.9%) had stayed between 6-10years, 76 (23.2%) between 10-15 years, while 29 (10.8%) respondents have stayed 16years and above at the organisations.

Education: Majority of respondents 201 (74.7 %) had a BSC/HND qualification, 26 (9.7%) respondents had an SSCE, while 42 (15.6%) respondents were with an MSC/MBA qualification, with none under "others".

Management: Respondents under the Top Management cadre were lowest with a total of 12 (4.4%), the lower management had the highest respondents with a total of 192 (71.4 %). While the middle management had a total of 65 (24.2%) respondents.

4.2 Descriptive Statistics of Data on the Variable

This segment explains the participants' responses to statements about green procurement management and organisational performance, if they strongly agreed (5), agreed (4), undecided (3), disagreed (2) or strongly disagreed (1), with the statements given. The statements and tables below illustrate the frequency and percentage of responses, as well as their explanations.

Table 4: Frequency Distribution for Green Procurement

S/N	ITEMS	FREQUENCY AND PERCENTAGE					TOTAL
		SD	D	U	A	SA	
1	My company has well defined goals and objectives for environmental preservation	26 9.7%	44 16.3%	30 11.2%	134 49.8%	35 13.0%	269 100%
2	My company guarantees that the resources it purchases are free of hazardous materials.	17 6.3%	23 8.6%	71 26.4%	142 52.8%	16 5.9%	269 100%
3	My firm ensures that all materials acquired adhere to environmental laws and regulations.	14 5.2%	41 15.2%	42 15.6%	160 59.5%	12 4.5%	269 100%

The frequency distribution revealed varied perceptions among respondents regarding the company's environmental practices. When asked whether the company has well-defined goals and objectives for environmental preservation, 26 respondents (10.8%) strongly disagreed, while 44 (13.3%) disagreed. 30 (11.2%) were undecided, 134 (49.8%) agreed, and only 35 (13.0%) strongly agreed, indicating a mixed but generally moderate level of agreement on the clarity of environmental goals.

Regarding whether the company ensures that the resources it procures are free from hazardous materials, 17 respondents (6.3%) strongly disagreed and 23 (8.6%) disagreed. A significant portion, 71 respondents (26.4%), remained undecided, suggesting uncertainty or lack of awareness. 142 (52.8%) agreed, and 16 (5.9%) strongly agreed, pointing to a slightly positive yet cautious perspective on the company's procurement standards.

Lastly, on whether the company ensures that all procured materials comply with environmental laws and regulations, 14 respondents (5.2%) strongly disagreed, 41 (15.2%) disagreed, and 42 (15.6%) were undecided. Meanwhile, 160 respondents (59.5%) agreed, and 12 (4.5%) strongly agreed, suggesting that while many acknowledge compliance efforts, a notable number of respondents remain sceptical or uncertain.

Table 5: Frequency Distribution on Operational Performance

S/N	ITEMS	FREQUENCY AND PERCENTAGE					TOTAL
		SD	D	U	A	SA	
1	All stakeholders have access to critical knowledge and information.	0 0%	48 17.8%	32 11.9%	177 65.8%	12 4.5%	269 100%
2	My company focuses on recognising and exceeding client expectations.	0 0%	45 16.7%	46 17.1%	166 61.7%	12 4.5%	269 100%

3	My company actively involves us in its activities in order to reach its objectives.	10 3.7%	12 4.4%	37 13.8%	177 65.8%	33 12.3%	269 100%

The frequency analysis captured respondents' perceptions regarding operational efficiency within the company. None of the respondents strongly disagreed when asked whether all stakeholders have access to critical knowledge and information. However, 48 respondents (17.8%) disagreed, 32 (11.9%) were undecided, 177 (65.8%) agreed, and 12 (4.5%) strongly agreed. This suggests that while a majority believe that information is accessible, a considerable portion still sees room for improvement.

No respondent strongly disagreed in response to whether the company prioritizes recognising and exceeding client expectations. Yet, 45 respondents (16.7%) disagreed, and 46 (17.1%) were undecided, reflecting some uncertainty or dissatisfaction. On the other hand, 166 respondents (61.7%) agreed, while 12 (4.5%) strongly agreed, indicating that a reasonable number believe the company is customer focused.

Lastly, when asked if the company actively involves them in its activities to achieve its objectives, 10 respondents (3.7%) strongly disagreed, and 12 (4.4%) disagreed. 37 respondents (13.8%) were undecided, while a larger share, 177 (65.8%), agreed and 33 (12.3%) strongly agreed. These results suggest a generally positive perception of employee involvement, though a small group still feels disengaged.

4.3 Test of Hypothesis

For this study, both the structural and measurement models were employed to analyze the relationship between green procurement and operational performance. The constructs used in the hypothesis testing demonstrated acceptable factor loading values, all above the threshold of 0.50. These results are visually presented in Figures 1 and 2. According to Hussain et al. (2019): Onayemi, O. O., Onayemi, O. O., Dada, A.E., Gberevbie, M.A., Tongo, N.I., Adesanya, A.D., & Aribisala, S. (2022), the structural model often referred to as the inner model focuses on evaluating the R^2 values, path coefficients, and significance levels. Bootstrapping, as explained by Osibanjo et al. (2020), is used to determine the statistical significance of the constructs. In this study, the default bootstrapping procedure in Partial Least Squares (PLS) involved 5,000 subsamples, enhancing the robustness and reliability of the findings.

The use of 5,000 subsamples in the bootstrapping process yielded highly accurate path coefficient (β) values, demonstrating the dynamic relationship between green procurement practices and organisational operational performance within Nigeria's fast-moving consumer goods (FMCG) sector. Findings indicated a high level of consistency in employee responses. The hypothesis tested was stated as:
H_0: There is no significant relationship between green procurement and operational performance.

This involved one exogenous variable (green procurement) and one endogenous variable (operational performance). The model evaluation focused on path coefficients, t-statistics, R^2 (coefficient of determination), effect size (f^2), and predictive relevance (Q^2). All items in the constructs were measured using a structured questionnaire based on a 5-point Likert scale. Notably, factor loadings presented in Table 5 exceeded the minimum threshold of 0.50 for all retained items; any items failing to meet this benchmark were excluded from the analysis

Table 6: Factor loading for Green Procurement and Operational Performance.

	Factor loading	**Error variance**	**Composite reliability**	**AVE**	**Cronbach alpha**	**No. of indicators**
Indicators	**> 0.7**	**< 0.5**	**≥0.8**	**≥0.5**	**≥0.7**	
Green Procurement			**0.811**	**0.591**	**0.691**	**3**
GP1	0.806	0.194				
GP2	0.827	0.173				

GP3	0.687	0.313				
Operational performance			**0.728**	**0.595**	**0.423**	**2**
OE1	0.505	0.495				
OE2	0.967	0.033				

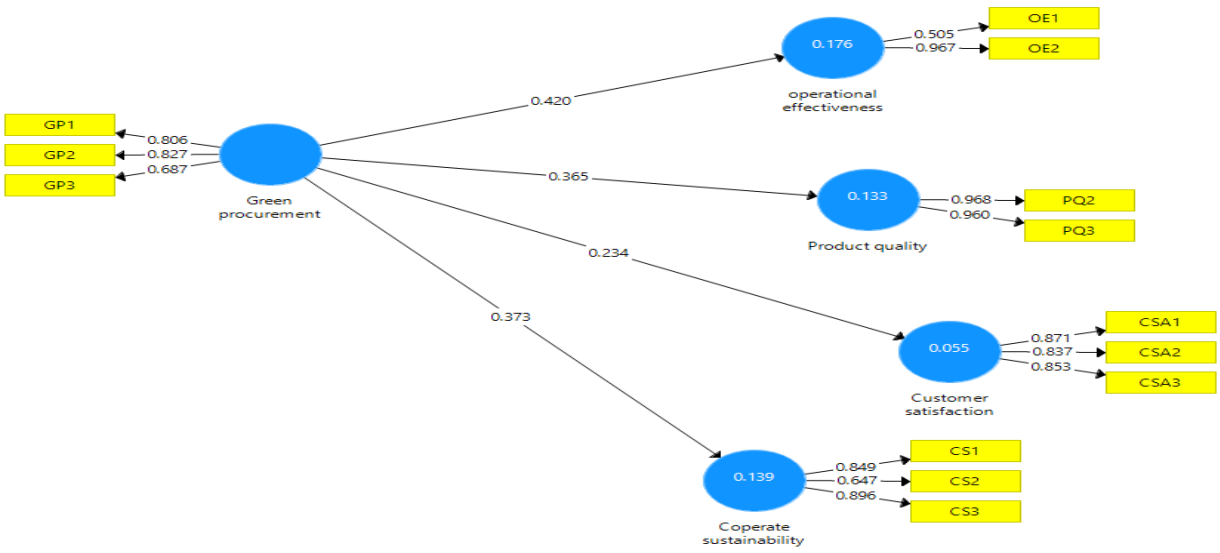
The thresholds recommended by Fornell and Larcker (2016) were applied to assess the validity and reliability of the measurement scales. First, factor loadings must exceed the minimum threshold of 0.60. Second, composite reliability should be 0.80 or higher. Third, the Average Variance Extracted (AVE) should be greater than 0.50. Lastly, Cronbach's alpha must be equal to or above 0.70 for the instrument to be considered reliable (Henseler & Chin, 2010).

As shown in Table 5, all constructs related to data analytics and business processes demonstrated factor loading and composite reliability values above the required thresholds specifically, greater than 0.50 and 0.80, respectively indicating internal consistency and acceptable Cronbach's alpha reliability, with the exception of operational performance. The factor loadings across all items ranged from 0.505 to 0.967. Based on these metrics, the instrument can be deemed both valid and reliable, as it meets the fundamental criteria for model fit. Evaluation of the Inner Structural Model. In Structural Equation Modelling (SEM), the inner or structural model evaluates the relationships between latent variables using path coefficients and R^2 values (Chin, 2010). According to Cohen (1988), R^2 values above 0.02 indicate a small effect, above 0.13 a medium effect, and above 0.26 a large effect in social and behavioral sciences.

Figures 1 and Table 6 show that green procurement explains 17.6% of the variance in operational performance, 13.3% in product quality, 5.5% in customer satisfaction, and 13.9% in corporate sustainability. These results suggest that green procurement has a medium effect on operational performance and corporate sustainability, but a low effect on customer satisfaction.

Furthermore, Figure 1 confirms that the model possesses predictive power. The findings reveal that, holding all other variables constant, a unit change in green procurement leads to a 42.0% increase in operational performance.

Figure 1 Predictive relevance (Path coefficient) of green procurement on operational performance in the Nigeria's FMCG Sector.



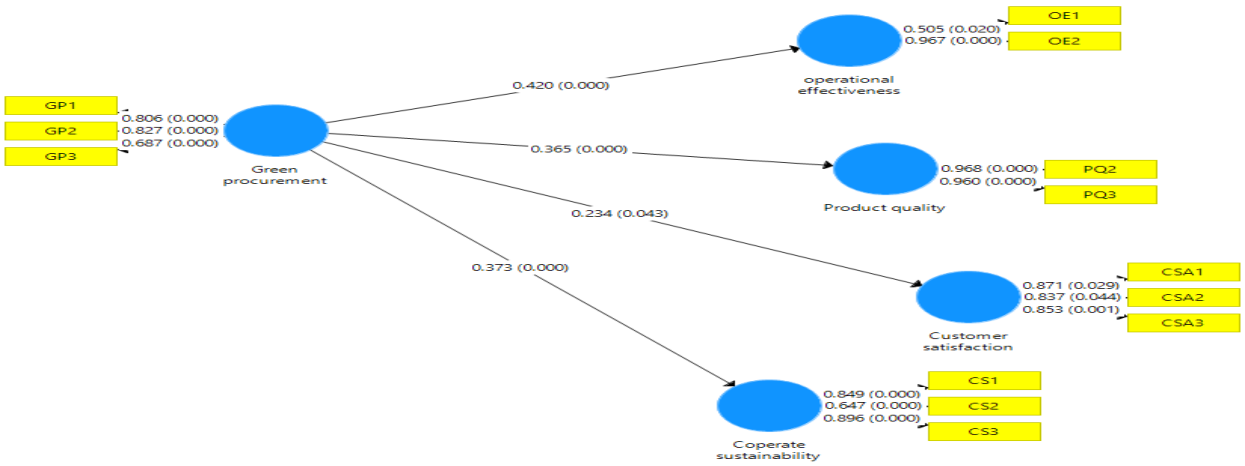


Figure 2 Path Co-efficient and P-values for green procurement on operational performance in the Nigeria's FMCG Sector.

The Path Coefficients (β) and T- statistics Estimation

The path coefficients and the standardized β coefficient were determined in the Partial Least Square (PLS). The significance of the hypothesis was tested through the β value. The higher the β value, the greater the substantial effect on the endogenous latent construct. However, the bootstrapping for green procurement on organisation operational performance in the Nigeria's FMCG sector was presented in Figure 2

Table 7: Path coefficients for green procurement on operational performance in the Nigeria's FMCG Sector.

Variables and Cross Leading			**Path co-efficient (O)**	**Std. Dev (STDEV)**	**T-statistics (O/STDEV)**	**P-values**
Green procurement	→	operational performance	0.420	0.074	5.691	0.000
					R-Square (R^2)	**R-Square (R2) Adjusted**
Green procurement	→	operational performance			0.070	0.067

Source: Researcher's Survey, 2024

The path coefficient indicates that green procurement has a direct and statistically significant impact on organisational operational performance, with a p-value less than 0.05. The analysis revealed a positive and significant relationship between green procurement and operational performance ($\beta = 0.420$, $T = 5.691$, $f^2 = 0.074$, $p < 0.05$). This confirms that green procurement practices contribute meaningfully to enhancing operational performance within the FMCG sector. The strength of the beta value highlights a strong degree of association between the two variables. Given the practical significance of the path coefficient, evidenced by the p-value being below the 0.05 threshold, the null hypothesis is rejected. Furthermore, the R-value represents the correlation between the dependent variable (organisational operational performance) and the independent variable (green procurement), affirming the validity and reliability of the relationship.

4.4 Discussion of Findings

Theoretical Findings

The Triple Bottom Line (TBL) concept emphasizes the need to balance economic, social, and environmental considerations in decision-making. In the context of green procurement, this approach encourages organisations to adopt sustainable practices by focusing on three key areas: economic such as reducing costs through energy-efficient products and minimizing waste; social by supporting local communities and promoting fair labor practices; and environmental by sourcing eco-friendly products to reduce their ecological footprint.

This study's findings align with the TBL framework, affirming that green procurement significantly impacts the operational performance of FMCG companies in Lagos. By applying the TBL approach, organisations are better positioned to make procurement decisions that improve their financial outcomes and contribute positively to society and the environment.

Empirical Findings

This was based on observations and results made by the researcher while carrying out the research work, the empirical results used the frequency table and multiple regression approaches to test the hypothesis. On this basis the empirical result is shown below:

HYPOTHESIS: No significant relationship exists between green procurement and operational performance.

Under this hypothesis, it was found that green procurement significantly influences the operational performance of firms in the FMCG sector, confirming its direct and meaningful impact. Research by Al-Hawary et al. (2017) highlights the critical role of supply chain management in fostering businesses that are competitive in the global market. A supply chain is a network of various components such as manufacturers, suppliers, transporters, warehouses, and retailers that work together to fulfill customer demand. The process begins and ends with the customer, where raw materials like oil are transformed into finished products and delivered to consumers. In the oil and gas industry, for instance, crude oil is supplied to manufacturers for processing at refineries.

A flexible supply chain offers several advantages to businesses. It enables companies to respond to demand fluctuations, including seasonal variations, manufacturing delays, procurement issues, new product launches, or shifts in emerging economies or competitive landscapes (MacClever et al., 2017). Flexibility, in this context, refers to the strategic use of redundancies, such as reallocating stock, expertise, and sourcing facilities, to adapt to changes in the system. Both proactive resilience measures and contingency recovery plans are essential in minimizing disruptions and enhancing supply chain performance (Ivanov et al., 2018).

Conclusion

Green Supply Chain Management (GSCM) is a concept in supply chain management that integrates environmental considerations into business practices. It is increasingly viewed as a viable strategy for organizations to reduce the environmental impact of their activities while improving operational performance. Initially driven by concerns over environmental degradation, dwindling raw materials, and rising pollution levels, GSCM has now become a tool for organizations seeking to enhance their overall performance.

In this study, all proposed relationships between variables in the research model were tested, and empirical analysis using descriptive statistics confirmed that significant relationships exist between the variables. The findings suggest that GSCM positively influences organizational performance. This implies that organizations should focus on strengthening their green supply chain management efforts, as it has been shown to enhance productivity and efficiency, ultimately leading to improved organizational performance.

Recommendations

The following recommendations are made based on the findings of the study:

i. Employers of labour and policymakers should seek to adopt strategies that promotes green supply chain management as it fosters an ecofriendly culture that improves performance.
ii. Managements should bring in some strategies such as bonuses and recognition to encourage and motivate green supply chain management practices
iii. Management should also ensure that they take into consideration the UN's SDG's and ensure that they fashion their supply chain management processes in the most economical way.
iv. The management should also help in putting more efforts to ensure high innovation and ideation amongst strategic stakeholders, as this would improve productivity.

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