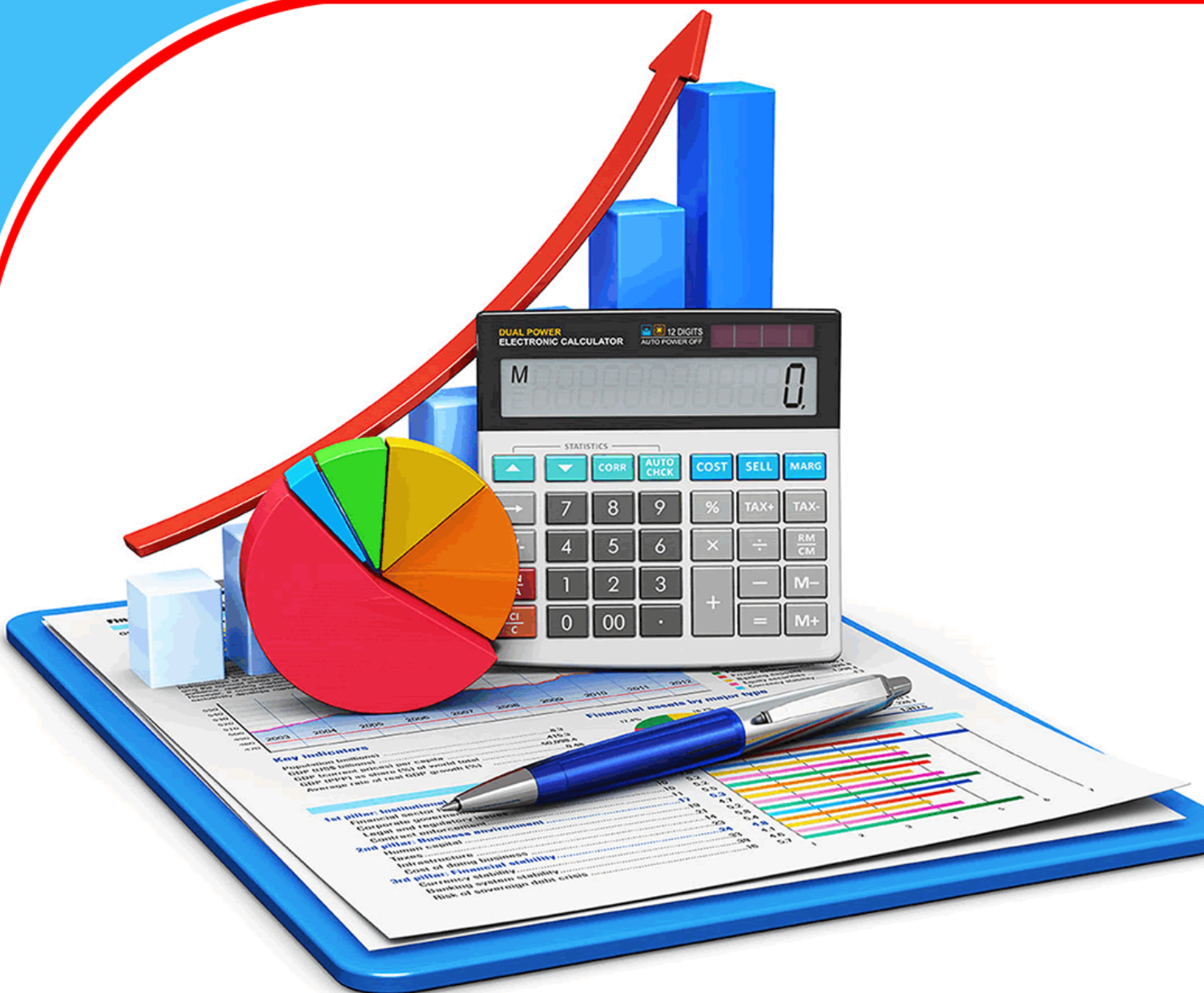


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Abstract

Purpose: The fast-moving consumer goods firms plays a vital role in the microeconomic and macroeconomic sector of every economy. However, these organisations are accused of polluting the environment and engaging in practices that are not sustainable. The firms have performed below expectations attributable to non-compliance with green supply management such as green procurement, green distribution, green warehousing, materials management and reverse logistics. This study therefore investigated the effect of green supply chain management on the performance of fastmoving consumer goods in Lagos State, Nigeria.

Methodology: The study adopted a survey research design. The population of the study was 418 middle and top-level management staff from selected quoted fast-moving consumer goods firms in Lagos State, Nigeria. The study adopted the total enumeration method. Data was collected using a valid and reliable questionnaire with a Cronbach's alpha coefficients ranging from 0.700 to 0.892. The response rate was 100%. Data were analysed

using both descriptive and inferential statistics (Multiple regression analysis).

Findings: Findings revealed that green supply chain management had positive and significant effect on the performance of selected fastmoving consumer goods companies in Lagos State, Nigeria (Adj. $R^2 = 0.482$, $F(5, 407) = 77.600$, $p < 0.05$). The study concluded that green supply chain management practices enhanced organisational performance of selected fast-moving consumer goods companies in Lagos State, Nigeria.

Recommendations: The study therefore recommended that management of fast-moving consumer goods firms in Nigeria should prioritise the implementation of green procurement, green warehousing, material management, and reverse logistics practices to enhance their overall performance. Also, the management of consumer goods firms in Lagos State should concentrate on optimising their material management processes, such as inventory control, demand forecasting, and supplier collaboration.

Keywords: *Green Supply Chain Management, Materials Management, Organisational Performance, FMCG Firms*

1.0 INTRODUCTION

Attention has been drawn by researchers and organizational members on the performance of organizations in the fast-growing consumer goods sectors of different countries. Performance is a resonating factor that contributes to the ability for an organization to achieve its set goals and objective. The current realities in performance levels have deteriorated, causing more efforts exerted in line of companies adopting effective green supply chain management procedures to meet up the fast-growing consumer goods sector. A report from Deloitte in 2020, called out entrepreneurial orientation mismatches, microeconomic and macroeconomic factors, importation policy, inflation rate, infrastructure and interest rates has deteriorated across

developing and developed economies due to overall performance levels. The downtime in industry's overall performance has triggered management and academic concerns to determine its root causes, with countries such as the United States, Germany, Spain and France currently experiencing decline in financial and non-financial performance (Nunhes et al., 2021). The consumer goods sector has been identified as a critical sector as it provides jobs within the country, investments by foreign and local companies and bodies, contributing massively to the GDP of the country.

Green supply chain management is the involvement of the purchasing function in operations ranging from material reduction, recycling, reuse and replacement (Do et al., 2020). Another definition describes it as a closed loop supply chain that uses minimal resources that is environmentally benign (Wang & Dai, 2014). It focuses on minimizing negative environmental impacts by reducing waste and using resources in an efficient and sustainable manner. Green supply chain management leads to higher efficiency as it eliminates waste driving improvements in processes by reducing energy use, waste and emissions, reducing costs and increased profitability (Aslam et al., 2019). However, developing and implementing green supply chain management policies are a never-ending challenging feat due to its complexity in process and the numerous stakeholder involvement (Bolaji et al., 2020). This resistance is attributed to the low-level knowledge and understanding of the benefits of green supply chain management or fear of increased cost. To effectively adopt the green supply chain management, some important steps to note includes; green procurement, green distribution, green warehousing and green material management.

Given the increasing business competition, turmoil, a turbulent market, and change as a result of an increasingly dynamic scene, Ouma (2016) claims that in Africa, specifically in Kenya's, firms face a decline in performance. This has brought about unexpected and, or disruptive changes which have caused businesses to assess the significance of their business operations. Companies are constantly working to earn and keep a financial performance by capitalising on their unique resources without which it is almost impossible to remain at the top (Adzeh, 2017). This includes the usage of both data to make better-informed decisions, as well as educating the customer about such data collection and its use to increase their knowledge. Kenya's thirdlargest economic sector (by revenue) and (in terms of purchases) employs about 10% of the population but is only about 5% of the country's total GDP. The poor performance of the consumer goods sector has performed poorly has been attributed to the lack of the implementation of the green supply chain management such as green procurement, green distribution, green warehousing, green materials management, and reverse logistics (Mwangi et al., 2016).

In Nigeria, similarly issues have been identified most especially among fast moving consumer goods companies (Akpan et al., 2016). The Nigerian consumer goods sectors continues to suffer due to environmental performance limitations such as less profit-generating business activities, low sales, insatiable supply of capital and low intensive products, not to mention the higher bound issues like high taxes and poor power generation hindering the outcome of the business (Cyril et al., 2020). Having to face these challenges over the years, the country's operational performance continues to decline as the sector is susceptible to low consumer spending leading to lower demand. Operational performance is therefore affected negatively as the sector is susceptible to low consumer spending due to decreased demand and supply from lower global oil prices, which has been hit even harder by disruptions in oil production. There are several factors responsible for the decline in the performance of organisations in the fast-moving

consumer goods sector that have been given less attention in the past years. These factors act individually or as a pack to influence the extent to which organisations can go in achieving their corporate objectives (Arogundade, 2020). Green supply chain management (GSCM) has been seen as a factor that poses great benefits and harm to the performance of fast-moving consumer goods firms depending on how they are handled.

Statement of the Problem

The discourse on green supply chain management and organisational performance has received research attention in different geographical contexts, organisations and from different authors (Hong et al., 2019; Hong et al., 2019; Li & Huang, 2017; Silva et al., 2019; Yi, & Xue, 2016). Despite the existence of these studies, it was observed that the linkage between green supply chain practices and green innovation in the Nigerian food and beverage sector is not adequately investigated (Eke & Ogbuji, 2021; Jesuleye et al., 2020; Solaja et al., 2020). This, therefore, creates a gap that requires empirical attention to be dealt with. Firms in Nigeria, especially in the fast-moving consumers goods (FMCG) subsector have failed to integrate the practices of green supply chain with innovative processes (Moradeyo, 2018). Factors observed to inhibit the integration of green supply chain management with innovative processes include inadequate knowledge, lack of top management commitment, high-cost investment, lack of government support, lack of information technology, and lack of learning capacity to evaluate GSCM (Ikegwuru & Henshaw, 2020). It becomes quite challenging as they have not tapped into the advantage that lies in this integration (Okon, 2018). Other issues affecting the implementation of green supply chain management practices in Nigerian FMCGS include poor integration between management and organisation, social and legal misconception, technological unreadiness and lack of strategic understanding (Orji et al., 2019). These issues as pointed out have thus resulted in poor innovation performance in terms of poor-quality products, poor durability and high-priced products. However, judging from the various challenges confronting the fast-moving consumers goods (FMCG) manufacturing sector in Nigeria, and the enormous opportunities available to the sector through green supply chain management, it is logical to examine the ascertain the effect of green supply chain management practices on the performance of selected fast-moving consumer goods companies, hence the need for this paper. The seeks to examine the effect of green supply chain management practices on the performance of selected fast moving consumer goods companies in Lagos State, Nigeria.

Hypothesis

H₀: Green supply chain management practices have no significant effect on the performance of selected fast-moving consumer goods companies in Lagos State, Nigeria.

2.0 LITERATURE REVIEW Green Supply Chain Management Practices

Green supply chain management (GSCM) is a process that focuses on minimizing environmental impacts by reducing waste and using resources in an efficient and sustainable manner. It involves the integration of environmental considerations into all aspects of the supply chain, including sourcing, production, distribution, and waste management (AlGhwayeen & Abdallah, 2018). It involves the integration of environmental considerations into all aspects of the supply chain, including sourcing, production, distribution, and waste

management (Al-Ghwayeen & Abdallah, 2018). Do et al. (2020) defined GSCM as the involvement of the purchasing function in operations such as material reduction, recycling, reuse, and replacement (Do et al., 2020). According to Wang and Dai (2018), GSCM is a closed-loop supply chain that uses minimal resources and is environmentally benign. Sarkis (2012) also defined GSCM as a hybrid of a redesigned environmental and logistics firm, emphasising the importance of reverse logistics.

According to Do et al. (2020), GSCM is the process of integrating "green" aspects to current supply chains and reconstructing a recalled supply chain as a bright manner rebuilding system. This encompasses not only effective pursuit, but also supply chain innovation in terms of costs, profits, and the environment. Consumers are increasingly expecting enterprises from whom they buy items to guarantee not only quality and value for money but also environmental and social sustainability (Nguyen et al. 2020). Green supply chain management (GSCM) is the practice of incorporating environmental consciousness into supply chain management. It is a holistic approach to managing the environmental impact of a company's supply chain processes, from the sourcing of raw materials to the delivery of the finished product (Ahmad et al., 2022). GSCM includes optimizing the use of resources, minimizing energy and emissions, promoting recycling, and reducing waste. GSCM also involves the use of green technology, sustainable packaging, and renewable energy sources. Do et al (2020) identified internal environmental management practice, green supplier selection, cooperation with consumers for green buying, investment recovery, and eco-design practices are among the five GSCM practices.

Green supply chain management offers several advantages to companies. Firstly, it enhances efficiency by eliminating waste and driving process improvements. Through the reduction of energy use, waste, and emissions, companies can achieve higher levels of efficiency, lower costs, and increased profitability (Aslam et al., 2019). Also, green supply chain management plays a crucial role in reducing the environmental impact of businesses. By utilizing resources more efficiently and implementing measures to reduce emissions, companies can actively contribute to environmental preservation and minimize their ecological footprint. Moreover, adopting green supply chain management practices can positively impact a company's brand image. As consumers become increasingly aware of environmental concerns, they are more inclined to support and purchase products from companies that demonstrate a genuine commitment to sustainability (Balasubramanian & Shukla, 2017). Additionally, implementing green supply chain management can lead to improved customer satisfaction. Consumers tend to favor products that have been produced sustainably, aligning with their values and expectations for environmentally friendly choices. Furthermore, green supply chain management can strengthen relationships between suppliers and companies. Suppliers who prioritize sustainability are more likely to deliver high-quality products and services, fostering positive and collaborative partnerships (Badi & Murtagh, 2019). The green supply chain management (GSCM) practices examined in this paper, based on an extensive literature review (Aslam et al., 2019; Balasubramanian & Shukla, 2017; Nguyen et al., 2020), encompass green procurement, green distribution, green warehousing, material management, and reverse logistics. These practices have been identified as key components of GSCM and are crucial for organizations aiming to incorporate sustainability principles into their supply chain operations.

Organisational Performance

Organisational performance is a concept that tests a company's market position and its ability to meet the needs of its stakeholders (Lo et al., 2015). Organisational performance illustrates how an organisation uses tangible and intangible tools to accomplish its goals (Wheelen & Hunger, 2012), as well as the culmination of an organisation's working process and activities. Nnabuike (2009) described organisational performance as the creation of a new structure or the modification of an existing one to meet the needs of the organisation and the demands of technology. According to Moullin (2007), organisational performance is a metric that organisations use to track their production and provide value to shareholders and clients. Cho and Dansereau (2010) characterised organisational performance in terms of the priorities and objectives of the organisation. Tomal and Jones (2015) defined organisational performance as the actual results or outputs of an organisation as calculated against the desired outcomes of that organisation. Since organisational performance is a multidimensional concept, it aims to quantify a company's achievement of the goals proposed by various stakeholders over a given time span (Richard et al., 2009).

Various methods of evaluation are used by different organisations to assess performance; the most widely used today include financial and non-financial performance metrics (Hilman, & Kaliappen, 2014). Many scholars have taken a more balanced approach to performance assessment, using both financial and non-financial metrics (Ho et al., 2016). Many people consider financial performance to be the primary goal of any business, as it represents how effectively a company uses its assets to produce revenue (Chen et al., 2009). Nonfinancial performance metrics, on the other hand, refer to a company's long-term operating goals, or, in other words, potential performance indicators that are not presentable by new financial criteria (Blazevic & Lievens, 2004; Prieto & Revilla, 2006).

Jahanshahi et al. (2012) highlighted several advantages associated with the appropriate measurement of firm performance. These advantages include a heightened attention and focus of the organization on actual results and output, allowing for a comparison with intended outcomes. Additionally, it can lead to increased confidence among investors and a greater commitment to investment from stakeholders. The measurement of firm performance also contributes to the improvement of financial performance, the advancement of environmental performance, and the establishment of goodwill for the firm. Furthermore, operational performance indicators serve as critical success factors for organizations.

Theoretical Review

This study is anchored on the natural resource-based view theory because it aligns with the essence of the study which is to focus on how to apply green effects of the supply chain processes of organisations. The natural resource-based view: The NRBV was derived from the earlier theoretical contribution of Resource Based View (RBV) which focuses on the importance of organisational resources that are valuable, rare, in-imitable and non-substitutable as a basic competitive advantage (Barney, 1991). However, NRBV stressed the importance of environmental factors that facilitate the development of the organisation's unique capabilities (Hart, 1995; Zhu & Sarkis, 2007; Vachon & Klassen, 2006, 2008; Shi et al., 2012). The theoretical underpin of NRBV is to develop the connection between the environmental challenge and organisation resource which NRBV considers Innovative environmental solution as key elements in the generation of organisational capabilities that eventually influence performance by generating differentiation and cost advantages (Bamey, 1991 Hart, 1995; et al.,

2013). Identified by Wernerfelt (1995), it is this bundle of valuable natural resources that enable organisation's ability to sustain its competitive position in which this value creates strategic resources allowing it to outperform its competitors (Bamey, 1991; Hart, 1995; Shi et al., 2012; Wernerfelt, 1995; Wu and Lin, 2013; Wu et al., 2013). Explained by Hart (1995), it is the inimitable strategic resources that protect it from competition as these resources are not easy to duplicate or imitate by competitors who acquire similar resources. This is because such resources can be causally ambiguous as have developed over time through repeated learning and exploring. The causal ambiguity keeps competitors from understanding the relationship between resources and competitive advantage.

Green Supply Chain Management and Firm Performance

Reuse of products, components, and materials have been used in the past, mostly for the cost savings of reusing rather than disposing of the product or item (Khor et al., 2016). Environmental performance issues, in addition to economic motivations, have influenced the growth of reverse logistics operations. Wahab et al. (2018) found that a greener approach could potentially enhance an employee's health state and eventually could further instigate the green warehousing practice GWP motivation and eventually lead to the company's profit. The study further revealed that organisations nowadays are not the only concern in profit per se, but are concurrently caring for the employees' goodwill and job satisfaction towards a better culture and group-oriented teamwork. Therefore, satisfaction among the employees should be fulfilled to encourage and motivate greener practices, particularly the GWP as an employee's involvement will encourage an organisation to implement green practices. The finding from the study of Kamarulzaman et al. (2018) suggested that the adoption level of Malaysian foodbased manufacturers towards green initiatives in warehousing was categorized as 'light green' which implied that these manufacturers have applied environmental performance practices in their warehousing. The results also indicated that green initiatives in warehousing give significant impacts on manufacturers' business performance.

Anees-ur-Rehman et al. (2018) found that brand orientation improves the effectiveness of brand communication and internal branding in building brand awareness and credibility. Brand awareness emphasizes an external route through brand communication, while brand credibility emphasizes an internal route through internal branding. Brand awareness positively impacts brand credibility, and brand credibility positively impacts financial performance highlighting the importance of both brand performance components for financial performance. AgyabengMensah et al. (2020) investigated green warehousing and economic performance. The results showed that green warehousing and logistics optimization negatively influence economic performance but improves economic performance through supply chain sustainability. Salehi et al. (2018) found that the investment in CSR initiatives is significantly and positively associated with firm financial performance as proxied by changes in return on assets. Moreover, the findings confirm a positive and significant association between CSR expenditures and firm financial performance as proxied by both the future changes in return on assets and the future changes in operating cash flows scaled by total assets. Likewise, Santis et al. (2016) found no evidence of economic and financial performance differences between companies from each of the studied indices. In fact, our findings show that other characteristics, such as sectorial classification, have more influence on firms' economic and financial performance than their investments in sustainable initiatives. In the study of Martínez-Ros and Kunapatarawong (2019), results from over 5,000 firms indicate a shift in the focus from internal knowledge to external knowledge when developing green innovations as firms grow in size.

Despite benefits from broad knowledge search on green innovations, the relationship has an inverted U shape. The diminishing returns of knowledge breadth on green innovations are present for smaller firms and disappearing as firms get larger. The empirical results of Soewarno et al. (2019) showed that green innovation strategy positively affects green innovation. This study also demonstrates that green innovation strategy positively affects green innovation indirectly via green organisational identity and environmental organisational legitimacy in manufacturing companies in Indonesia as a developing country.

3.0 METHODOLOGY

The positivist research philosophy was adopted for this study due to its relevance to green supply chain management and the performance of selected fast-moving consumer goods firms. The positivist approach assisted in identifying the factors that leads to improved performance by collecting data on the processes that are implemented to achieve green supply chain management, the performance outcomes of the firms and the associated factors. The research design adopted was the survey research design with focus primarily on vital facts, views, opinions, demographic data, attitudes, and motivations of the respondents through the research instrument. The population for this study comprised 418 top and middle-level management employees of the selected quoted fast moving consumer goods firm on the Nigerian Stock Exchange. Twenty (21) consumer goods firms were identified however, six were selected based on their engagement in green supply chain management. The sample size consists of 418 top and middle-level management staff obtained using the total enumeration technique. Statistical data was collected using the quantitative approach through administered questionnaire. The justification for using the quantitative approach is that it allowed for the collection of large amounts of data that can be analyzed to look for patterns and trends (Bruner et al., 2019). The questionnaire was divided into four parts in which part A focused on the socio-demographic data of the respondents such as gender, age range, marital status, part B on the questionnaire were items for each of the green supply chain management dimensions (green procurement, green distribution, green warehousing, material management, and reverse logistics), and part C covered questionnaire items for organizational performance dimensions environmental performance, operational performance, financial performance and green innovation performance), while section D covered questionnaire items of the moderator (artificial intelligence). The response rate of the instrument ranged from 6 being the highest to 1 being the lowest on a 6-point Likert type scale. The pattern of response includes: VH = Very High, H = High, MH = Moderately High, ML = Moderately Low, L = Low, VL = Very Low. The justification for using 6-point Likert scale is that a six-point scale encourages participants to consider the question more carefully and make a choice that either leans positively or negatively. The perceptions are rarely neutral, and the six-point scale helps account for this reality. Additionally, an even number of items in the response scale can yield groupings that are easier to understand and discuss. For this study, data was analyzed in two forms which are descriptive and inferential analysis. Multiple regression analysis will be employed to analyze the effects of green supply chain management dimensions (independent variable) on organizational performance dimensions (dependent variable). The rationale for the adoption of multiple regression analysis is that regression helps to provide predictions and causal inferences for a given variable (Allen, 2004; Jolliffe, 1988; Sykes, 1993).

4.0 FINDINGS

The study collected data from top and middle-level management employees of the selected quoted fast moving consumer goods firm on the Nigerian Stock Exchange. The researchers distributed a total of 418 copies of the questionnaire to the respondents, and all the copies were rightly filled and returned to the researcher. This formed 100 percent response rate. According to Saldivar (2012), a response rate of 70 percent and above reduces the risk of sampling bias sufficiently in order to obtain a correct inference. The analysis was conducted by using the multiple regression analysis at a 5% level of significance and the results of the analysis are presented in Table 1.

Table 1: Response Rate

Responses	Frequency	Percent (%)
Completed usable copies of questionnaire	418	100.0
Unreturned/Incomplete copies of questionnaire	0	0.0
Total	418	100.0

Source: Researcher's Field Survey, 2023

Descriptive Statistics

In this section the descriptive statistics for the study variables, green supply chain management and organizational performance of fast-moving consumer goods firms in Lagos Nigeria was reported. The descriptive statistics summarised the main characteristics of the study variables. For each of the variable, respondents were requested to indicate the extent to which they agreed with the listed items that were explaining the variables on a six-point Likert type scale. The range was 'very high' (6) to 'very low' (1). The Mean scores of 5.5 - 6.0 on the Likert scale represented "Very High"; Mean scores of 4.5 - 5.49 signified "High". Mean scores of 3.5 - 4.49 characterised "Moderately High". Mean scores of 2.5 - 3.49 denoted "Moderately Low". Mean scores of 1.5 - 2.49 meant "Low". Scores of 1.0 - 1.49 represented "Very Low". A grand standard deviation of more than one indicates that the responses are widely distributed or have no convergence and less than one indicates convergence in responses of respondents. The results of the descriptive statistics of the variables are reported in the appendix I.

Hypothesis Testing

Multiple linear regression analysis was employed to test the hypothesis. The independent subvariables are green supply chain management dimensions (green procurement, green distribution, green warehousing, material management, and reverse logistics), while the dependent variable was organisational performance. In the analysis, data for green supply chain management dimensions were created by adding together responses of all the items under the various dimensions to generate independent scores for each dimension. Data for organisational performance was generated by adding together responses of all items under the variable to create index of organisational performance. The results of the analysis and parameter estimates obtained are presented in Table 2.

Table 2: Summary of Multiple Regression Analysis for the Effect of Green Supply Chain Management on Organisational Performance of Fast-Moving Consumer Goods Firms in Lagos Nigeria

n	Model	B	T	Sig.	ANOVA (Sig.)	R	Adjusted ²	F (5,407)
					0.000			77.600
							R	
	(Constant)	22.288	5.577	.000	b	0.699 ^a	0.482	
	Green	.829	6.247	.000				
418	Procurement							
	Green	.161	1.267	.206				
	Distribution							
	Green	.335	2.455	.015				
	Warehousing							
	Material	1.042	7.133	.000				
	Management							
	Reverse	.771	5.543	.000				
	Logistics							

a. Dependent Variable: Performance

Source: Researchers' Findings 2023

Table 2 presents the results of a multiple regression analysis investigating the impact of green supply chain management practices on the performance of selected fast-moving consumer goods in Lagos State, Nigeria. The findings show that green procurement, green warehousing, material management, and reverse logistics have a significant positive effect on performance. However, green distribution has a positive but statistically insignificant effect on performance. These results suggest that these four green supply chain management practices serve as predictors of performance for fast-moving consumer goods firms in Lagos State. According to the results presented in Table 2, there is a positive correlation between green supply chain management practices and performance, indicated by a multiple correlation coefficient of $R = 0.699$. The adjusted R -squared value of 0.482 suggests that the model, which includes green procurement, green distribution, green warehousing, green material management, and reverse logistics, explains 48.2% of the variability in the performance of selected fast-moving consumer goods. The remaining 51.8% of the variability is attributed to other variables not included in the model. These results indicate that the joint effect of green procurement, green warehousing, material management, and reverse logistics significantly influences the performance of selected fast-moving consumer goods firms in Lagos State, Nigeria. The results revealed green supply chain management practices had a statistically positive and significant effect on firm performance. The regression equations for the predictive and prescriptive models are as follows:

Predictive Model: $PER = 22.288 + 0.829GP + 0.161GD + 0.335GW + 1.042MM + 0.771RL$

+ μ_i

Prescriptive Model: $PER = 22.288 + 0.829GP + 0.335GW + 1.042MM + 0.771RL + \mu_i$

Where: PER = Performance; GP = Green Procurement; GD = Green Distribution; GW = Green Warehousing; MM = Material Management; and RL = Reverse Logistics

The regression analysis results show that, when keeping green supply chain management practices constant, the predicted performance of selected fast-moving consumer goods firms in Lagos State is estimated to be 22.288. Among the independent variables, only green distribution is not statistically significant and is therefore excluded from the prescriptive model for the consumer goods firms. The prescriptive model reveals that increasing green procurement, green warehousing, material management, and reverse logistics practices is associated with a positive impact on performance, with respective unit increases leading to performance improvements of 0.829, 0.335, 1.042, and 0.771 units. This suggests that enhancing these specific aspects of green supply chain management can contribute to better performance for fast-moving consumer goods firms in Lagos State, Nigeria. The analysis further highlights that material management has the most significant influence on performance, followed by green procurement, reverse logistics, and green warehousing, as evidenced by their respective beta coefficients. The overall model demonstrates statistical significance, indicated by the F-statistics ($df = 5, 407$) of 77.600 with $p = 0.000$ ($p < 0.05$), supporting its effectiveness in predicting the impact of green supply chain management practices on performance. This implies that, apart from green distribution, the green supply chain management practices significantly explain the performance of fast-moving consumer goods firms in Lagos State, Nigeria. As a result, the null hypothesis (H_0) which states that no significant effect of green supply chain management on performance for the selected consumer goods firms in Lagos State, Nigeria is rejected.

Discussion of Findings

The study's findings provide evidence that green supply chain management has a statistically significant and positive effect on the performance of selected consumer goods firms in Lagos State, Nigeria. The results indicate that material management emerges as the most influential factor affecting the performance of these consumer goods firms. Conceptually, performance as used in this study encompasses the inclusion of eco-friendly ingredients in products, less pollution, reduced carbon emissions and waste at the source, advancements in energy-savings, efficiency in utilization of resources, reduction in the use of environmentally hazardous elements, etc. (Zhu et al., 2018).

Akintokunbo and Adim (2020) posits that supply chain innovation underpins the achievement of sustainable competitive advantage and an ability to respond effectively to rapidly changing markets as organizations strive to be innovative despite intense technological uncertainty.

Related to long-term ecological impacts, an organization's regulatory methods, processes, practices including pollution protection, as well as resource utilization and waste lessening, are more fruitful than end-of-pipeline solutions (De Giovanni, 2012; Khan et al., 2020; Sarkis and Cordeiro, 2001). Performance is a widely used multidimensional construct, for which the measurement efforts have largely surpassed the conceptualization attempts. Theoretically, the findings aligned with the natural resource-based view (NRBV).

According to the natural resource-based view (NRBV) of the firm, the interaction between a firm and its natural environment is critical for the improvement of the performance of the environment, and creating sustainable competitive advantage. The natural resource based-view

(NRBV) works on the principle that a company's competitive advantage fundamentally depends upon its relationship with the natural environment. The NRBV framework identifies how companies can generate competitive advantage based on capabilities that support sustainable development. The theory upholds that firms should understand not only the resources available to them, but also how those resources interact with the external 'natural' world. Hart (1995) claims that it is this fit that can bridge RBV theory's internal and external flaws, and thus proposes NRBV to better grasp this fit between an organization and its natural environment. Sustainability activities, in particular, are tools that rivals cannot easily replicate or obtain due to institutional or capacity limitations, and thus can be called strategic resources from an RBV perspective (Hart and Dowell, 2011).

Empirically, the findings of this study are in agreement with different empirical investigations. The study of Shen et al. (2017) revealed that key factors include marketing benefits, market pressure, and internal pressure within the company, with policy pressure, marketing benefits, and business benefits being the most common reasons for developers to implement green practices GP. Furthermore, green supply chain management (GSCM) activities were found to have impact on environmental performance and cost-based efficiency. Similarly, results of Cousins, et al. (2019) show that these Chinese firms concentrate on the impact of product-based green procurement on their operational efficiency, as well as the moderating role played by stakeholder satisfaction. Likewise, Vanalle et al. (2017) used a Brazilian automotive industry to investigate green supply chain management. The findings revealed that the economic and environmental performance of the studied supply chain is positively linked to the implementation of green supply chain management GSCM practices. The study also discovered the systemic pressures that affect this supply chain's decision to follow green supply chain management practices.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The study focused on investigating the effect of green supply chain management practices, including green procurement, green warehousing, material management, and reverse logistics, on the performance of fast-moving consumer goods firms in Lagos State, Nigeria. Multiple linear regression analysis was conducted to test the hypothesis, and the results indicated that all the examined green supply chain management practices, except for green distribution, significantly influenced the performance of the selected consumer goods firms in Lagos State. The study concluded that green supply chain management practices affect performance of the selected consumer goods firms in Lagos State. The findings also emphasized the significance of material management as the most influential predictor of firm performance among the examined variables. The study aligned with the natural resource-based view (NRBV) theory, which suggests that a company's competitive advantage is closely tied to its relationship with the natural environment. The NRBV framework highlights three interconnected capabilities for firms to develop: pollution prevention, product stewardship, and sustainable development. Based on this theory, consumer goods firms should integrate these capabilities into their operations to generate competitive advantages and support sustainable development. The study recommended that management of consumer goods firms in Lagos State should prioritise the implementation of green procurement, green warehousing, material management, and reverse logistics practices to enhance their overall performance. Also, consumer goods firms in Lagos State are advised to concentrate on optimising their material management processes, such as inventory control, demand forecasting, and supplier collaboration. By improving material management efficiency, these firms can achieve cost savings, enhance operational efficiency,

and increase customer satisfaction. The study suggests that implementing green supply chain management practices, with a focus on material management, can significantly impact the performance of consumer goods firms in Lagos State, Nigeria

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APPENDIX Table 1: Descriptive Statistics on Green Procurement

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Reducing Hazardous Substance	4.3%	78.9%	16.0%	0.7%	0.0%	0.0%	4.87	0.464
Improve Employee Health	4.1%	78.0%	17.2%	0.7%	0.0%	0.0%	4.85	0.47
Promoting Uptake of Green Products	11.5%	52.4%	35.4%	0.7%	0.0%	0.0%	4.75	0.659
Preserving Natural Resources	12.7%	58.6%	27.3%	0.7%	0.7%	0.0%	4.82	0.679
Conserve Energy	11.7%	66.5%	21.1%	0.7%	0.0%	0.0%	4.89	0.588
Average							4.84	0.572

Table 2: Descriptive Statistics on Green Distribution

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Increase Energy Efficiency	12.7%	69.6%	17.7%	0.0%	0.0%	0.0%	4.95	0.55

Recyclable Materials	12.4%	66.0%	20.1%	1.4%	0.0%	0.0%	4.89	0.61
Producing Less Pollution	14.4%	61.2%	23.7%	0.7%	0.0%	0.0%	4.89	0.631
Production Process Optimization	12.0%	68.0%	19.3%	0.7%	0.0%	0.0%	4.91	0.579
Conformance of Labels to Standard.	18.2%	62.0%	18.4%	1.4%	0.0%	0.0%	4.97	0.651
Average							4.92	0.604

Table 3: Descriptive Statistics on Green Warehousing

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Efficient Cubic Footage	14.6%	67.2%	17.5%	0.7%	0.0%	0.0%	4.96	0.59
Automated Warehousing	10.0%	64.8%	24.4%	0.7%	0.0%	0.0%	4.84	0.591
Energy Efficient Facility	9.6%	68.2%	21.5%	0.7%	0.0%	0.0%	4.87	0.568
Practice of Just-In-Time	13.9%	63.6%	22.0%	0.5%	0.0%	0.0%	4.91	0.609
Smart Layout/Design	10.3%	67.2%	21.3%	1.2%	0.0%	0.0%	4.87	0.589
Average							4.89	0.589

Table 4: Descriptive Statistics on Material Management

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Resource Procurement	13.2%	76.6%	10.3%	0.0%	0.0%	0.0%	5.03	0.484
Inventory Management Quality	7.7%	71.1%	19.9%	1.4%	0.0%	0.0%	4.85	0.557

Control of Material Flow	10.0%	68.4%	21.5%	0.0%	0.0%	0.0%	4.89	0.551
Material Needs Analysis	8.9%	70.1%	21.1%	0.0%	0.0%	0.0%	4.88	0.534
System Inspection	11.2%	70.6%	18.2%	0.0%	0.0%	0.0%	4.93	0.539
Average							4.92	0.533

Table 5: Descriptive Statistics on Reverse Logistics

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Product Reclaim	23.4%	64.6%	12.0%	0.0%	0.0%	0.0%	5.11	0.585
Collection of Used Products For Recycling	12.0%	64.1%	22.5%	1.4%	0.0%	0.0%	4.87	0.62
Reselling	16.7%	65.6%	17.7%	0.0%	0.0%	0.0%	4.99	0.588
Repackaging	15.8%	68.7%	14.8%	0.0%	0.7%	0.0%	4.99	0.61
Disposal of Waste Products	12.2%	72.7%	14.8%	0.2%	0.0%	0.0%	4.97	0.529
Average							4.99	0.586

Table 6: Descriptive Statistics on Environmental Performance

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Standard Deviation
Ecological Protection	11.2%	72.0%	16.7%	0.0%	0.0%	0.0%	4.94	0.527
Greenhouse Gas Reduction	4.8%	76.3%	18.9%	0.0%	0.0%	0.0%	4.86	0.466

Pollution Reduction	11.5%	67.7%	20.8%	0.0%	0.0%	0.0%	4.91	0.561
Eco-Friendly Operation	11.0%	70.3%	17.9%	0.7%	0.0%	0.0%	4.92	0.558
Waste Reduction Culture	17.1%	67.8%	14.4%	0.7%	0.0%	0.0%	5.01	0.587
Average							4.93	0.540