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GREEN SUPPLY CHAIN MANAGEMENT PRACTICES AND MARKETING PERFORMANCE OF PETROLEUM PRODUCTS TANK FARMS IN RIVERS STATE.

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Abstract
There is a renewed paradigm shift in the campaign for Sustainability in the global business arena. A sustained demand that organizations, in their operations be mindful of the environment so as to maintain a better image in today's competitive marketing environment. Petroleum products Tank farms operators in Port- Harcourt are expected to key into this global trend by focusing on green supply chain management practices for a better sustainable environment. The key concern however, is whether or not the implementation of these practices will leads to better marketing performance. This study is aimed at determining the relationship between green supply chain management practices and marketing performance of petroleum products tank farms in Port-Harcourt. The specific objectives is to determine the effect of eco- design and reverse logistics, on measures of marketing performance. To achieve these objectives four research questions were posed and four hypotheses formulated to guide the study. The correlational research design was adopted, while the population of the study all 12 registered petroleum products tank farms operating in Port-Harcourt, and since this is a macro study due to the small population, ten staff from each of the 12 registered petroleum products tank farms in Port- Harcourt were selected using purposive sampling as respondents. Data was collected from the respondents using structured questionnaires. Since this is a correlation study, the Pearson Product Moment Correlation was used to test the hypotheses supplemented by SPSS version 23.0. The result showed a positive and significant relationship between the dimensions of green supply chain management practices and the measures of marketing performance. Based on the findings, it was recommended that petroleum products tank farms should adopt green supplier chain management practices in order to enhance their marketing performance.

Keywords: Green Supply Chain Management, Marketing Performance, Brand Reputation, Market Share Growth, Eco- Design, Reverse Logistics.

INTRODUCTION
The purpose of all business activities is profit maximization. Profit making is a measure of firms' marketing performance as it determines the survival or otherwise of the organization or business. Marketing performance refers to the marketing outcomes of the organization. It is usually measured by market share growth, profitability, customer retention, brand reputation, sales growth etc. Petroleum products tank farms like many other businesses are profit making entities hence should be concerned about their marketing performance. While a positive marketing performance points to an healthy business condition, negative marketing performance is a pointer to unfavorable business conditions. Recently, petroleum products tank farms in Rivers State have been experiencing

declining marketing performance arising from damaged reputation due to perceived negative impact of their activities on the environment and the resultant additional cost incurred as punitive measures for their reluctance to adopting sustainable or environmental friendly practices.

These petroleum products tank farms also known as depots are a critical component of the downstream sector of the Nigerian oil and gas industry. They serve as an essential nodes in the petroleum products supply chain providing storage and distribution services to end - users through the various filling stations.

With the country's reliance wholly on imported petroleum products despite being a major crude oil producing nation in the continent of Africa, there seems to be an unprecedented increase in the number of petroleum products tank farms. Rivers State, located in the Niger delta region of Nigeria, is a significant hub in the oil and gas industry. Apart from hosting various oil and gas exploration platforms and refineries, the state also houses multiple petroleum products tank farms which are scattered across the length and breadth of the state. These depots are currently the only medium through which imported petroleum products such as diesel, petrol, aviation fuel and kerosene are stored and distributed to the end users.

Sadly, the operations of these petroleum products tank farms like their upstream counterparts in the industry are not without challenges bordering on compliance with environmental standards. Despite the fact that their operations have over the decades negatively impacted the environment, they have paid diminutive attention to these environmental issues. This have attracted the attention of regulatory agencies and other non- governmental organizations who are concerned about environmental standards to scrutinize the activities of these firms. Lack of compliance to environmental regulations have attracted punitive measures in form of fines on some of these firms which constitute an additional cost to their overhead cost.

Marketing performance is a concept that is frequently associated in most marketing research as a criterion variable. It is usually measured by metrics such as market share growth, profitability growth, customer retention, brand image or reputation etc. A company's marketing outcome is a function of these indicators. Whenever there is a positive corporate image and reputation, it can enhance positive customer retention and by extension increase market share. Conversely, firms with diminutive attitudes towards harmful environmental practices such as the petroleum products tank farms in Rivers State risk not only being penalized heavily and severally but also stand to lose their customers due to bad corporate reputation. This will no doubt affecting the marketing performance of these firms.
It is observed that traditional supply chain practices are incapable of meeting these evolving demands, necessitating the adoption of Green Supply Chain Management (GSCM) practices. Green Supply Chain Management (GSCM) practice involves integrating environmental considerations into supply chain operations, encompassing sustainable sourcing, waste reduction, energy efficiency, and strict adherence to environmental regulations.

According to Srivastava, (2007) Green supply chain management (GSCM) is an emerging field that integrates environmental considerations into supply chain management. It involves the adoption of practices that reduce the environmental footprint of supply chain activities, encompassing sustainable sourcing, waste reduction, energy efficiency, and compliance with environmental regulations.

GSCM practices aims to minimize the negative environmental impacts associated with the production, transportation, and disposal of goods, thereby promoting sustainability throughout the supply chain. Sarkis (2012), posited that, GSCM involves the implementation of environmentally

friendly practices throughout the supply chain, encompassing activities such as waste reduction, energy efficiency, sustainable sourcing, and pollution prevention. In the context of petroleum products tank farms, which serve as critical nodes in the petroleum supply chain, the adoption of Green Supply Chain Management (GSCM) practices holds significant potential for improving environmental performance and enhancing operational efficiency (Wang & Sarkis, 2013).

The adoption of GSCM practices has been shown to offer numerous benefits, including cost savings, improved operational efficiency, and enhanced corporate reputation (Zhu & Sarkis, 2004). Moreover, companies that implement Green Supply Chain Management practices are better positioned to meet regulatory requirements and avoid penalties, which can further contribute to their financial performance (Luthra et al., 2011). In the petroleum industry, GSCM can help mitigate the environmental impact of operations, which is critical given the industry's significant contribution to pollution and greenhouse gas emissions.

Statement of the problem.

Nigeria, the most populous country in Africa is blessed with abundant oil and gas resources. Since the discovery of oil in commercial quantities in 1956 at Oloibiri, the country have had to tackle the effective distribution of petroleum products to all parts of the country for use by her teeming population.

However, the increase in the number of vehicles on the Nigerian roads and the breakdown for decades of all four refineries in the country due to lack of maintenance culture ushered in an era of massive importation of petroleum products in the country. A situation that was further heightened by the deregulation of the downstream sector of the Nigerian oil sector. The result was the attendant growth in the establishment of petroleum products tank farms by private companies known as independent marketers who have secured licenses from the government to import petroleum products from outside to meet the ever increasing local consumption needs.

In Rivers state, from approximately five petroleum products tank farms, before the deregulation era, the state currently host 12 depots spread across various parts of the state. Each of these petroleum products tank farms have its associated negative environmental impact on the eco-system prompting regulatory authorities in the sector to introduce measures that will mitigate the adverse effects of such practices. Failure to comply with these regulations always attracted penalties in the form of fines which add to the overhead cost of the company.

Also, the corporate image of some of these companies could be badly affected as their host communities and environmental NGOs constantly label them as environmentally irresponsible companies. This will no doubt negatively affect their corporate reputation and by extension customers retention and market share growth in the long run.

Adopting green supply chain management practices has been found as one of the best measures petroleum products tank farms can utilize to mitigate the impact of there operations on the environment thereby avoiding incurring additional cost to overhead through fines and maintaining positive corporate image and increasing market share growth. By implementing GSCM practices such as eco-design, and reverse logistics amongst others, it is expected that petroleum products tank farm operators will not only address the issues around environmental pollution but also increase their marketing performance since positive brand image or reputation will no doubt attract new customers while retaining existing customers. Again, fines usually paid for lack of regulatory compliance will no longer be part of the company’s overhead cost thereby reducing the total cost. Finally, by opting for efficient energy sources, energy cost is reduced which will lead to increase in the overall marketing performance of the company.

Conceptual framework.

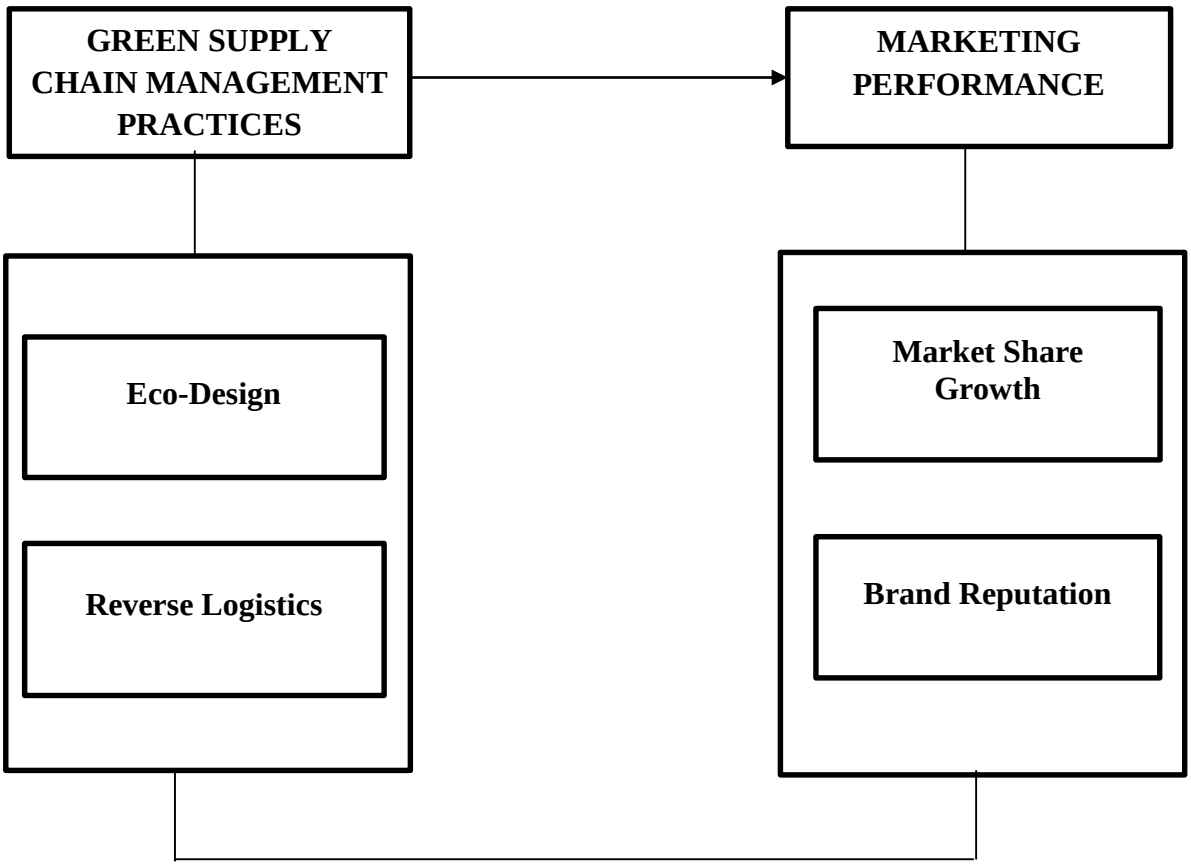

Figure 1.1: The conceptual framework showing the relationship between green supply chain management practices and marketing performance.
Sources: Hakirevic (2021); Zhou et al (2020); and Tan et al (2021).

Aim and objectives of the study.
The aim of this study was to examine the relationship between Green Supply Chain Management Practices and Marketing Performance of Petroleum Products Tank Farms in Rivers State. The specific objectives of this study was to:

i. determine the relationship between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State.
ii. determine the relationship between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State
iii. ascertain the relationship between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State.
iv. ascertain the relationship between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State.

Research Questions
The following research questions was raised be raised to address the objectives of the study:

1. To what extent does eco-design relates to market share growth of Petroleum Products Tank Farms in Rivers State?
2. To what extent does eco-design relate to brand reputation of Petroleum Products Tank Farms in Rivers State?

3. To what extent does reverse logistics relate to market share growth of Petroleum Products Tank Farms in Rivers State?
4. To what extent does reverse logistics relate to brand reputation of Petroleum Products Tank Farms in Rivers State?

Research Hypotheses

The following hypotheses was formulated to guide this study:

HO1: There is no significant relationship between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State.

HO2: There is no significant relationship between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State.

HO3: There is no significant relationship between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State.

HO4: There is no significant relationship between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State.

REVIEW OF RELATED LITERATURE

Conceptual Review

Concept of Green Supply Chain Management Practices

Green supply chain management Practices (GSCMP) have gained significant traction in recent years as organizations seek to align their operations with environmentally friendly practices (Sarkis, 2003). Green Supplies Chain Management Practices (GSCMP) involves the integration of environmentally friendly practices across the supply chain, including sourcing, production, logistics, and distribution (Wang & Sarkis, 2013). In the context of petroleum products tank farms, which serve as critical nodes in the petroleum industry supply chain, the adoption of GSCM practices can offer substantial benefits, ranging from cost savings to enhanced brand reputation.

Srivastava (2007) defines green supply chain management as the integration of environmental thinking in product design, material sourcing and selection, manufacturing processes, delivery of the final product to the final consumer as well as end-of-life management of the product after its useful life. GSCM practices comprise of activities associated with green procurement, environmentally responsible design, green manufacturing, green packaging, green distribution and reverse logistics.

According to Kung, et al, (2012) the synergistic interaction of these practices with one another is very important if maximum environmental benefit is to be attained. On their part, Tseng et al., (2019) noted that the principal objectives of green supply chain management in the supply chain of business organizations is reducing, recycling, and reclaiming. Green supply chain management mainly reduces the impact of polluting things such as deforestation, pollutants, global warming, and an ozone layer depletion affecting the environment. Solutions to build a green supply chain management such as intelligent packaging which is using the right kind of boxes for packaging, avoiding any kind of oversize boxes, using recyclable paper instead of plastic packaging, etc.

Srivastava (2018), has posited that the importance of green supply chain management is to reduce the pollution in the environment as well as production costs for economic growth, making a competitive advantage possible, great level of customer satisfaction, positive image of the business organisation for reducing carbon emission in the market. Green supply chain management is the advanced level of supply chain management instead of the old supply chain management (Gep, 2019).

DIMENSIONS OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES.

Eco-design

Eco-design also known as ecological or green designs are a set of activities which include the use of goods that are in line with environmental discipline. According to Zhu et., al., (2013) it is "the process of proactively designing products to perform the following: (i) optimize all the production functions i.e. fabrication, assembly, test, procurement, shipping, delivery, service and repair, (ii) assures the best cost effectiveness, quality, rehabilitee, regulatory conformity, wellbeing, market presence and customer expectation". Central to ecological design is that it is designed for the environment and it is relevant in sustainable business development since it impact all phases of the product life cycle including raw material extraction, production, packaging, distribution, use, recovery and recycling.

Eco-design is primarily focused on deteriorating the environmental harmfulness of products before it is produced, marketed and consumed. Ren et al (2005) submitted that by implementing eco-friendly practices, supply chain management can control 80% of environmental impact. This position was further enforced by Zeng et al. (2020) who posited that eco-design can assist in the reduction of wasteful purchasing. Cicconi, (2020); Zeng et al, (2020) noted that organization usually check data about the effect of their actions on partners and expand on partner assumption to plan new items that fulfil satisfaction assumptions as well as impact consumer ways of behaving. For Cicconi (2020) an example of eco-planning is when organizations, suppliers, and other partners within the supply chain, collaborate in the development of eco-friendly products and materials using reusable components.

Reverse Logistics

Keller and Keller (2014) define reverse logistics, also known as sustainable packaging, as "the use of materials and manufacturing methods for the packaging of goods that has a low impact on both energy consumption and on the environment. Sustainable packaging is created in an environmentally aware manner, using biodegradable and recyclable materials, and is energy efficient (Vamshidhar, 2013). Azizi and Tarhandeh (2014) contend that returns management is the supply chain management process by which activities associated with returns, green packaging, gatekeeping, and avoidance are managed within the firm and across key members of the supply chain (Tozay, 2012). The correct implementation of this process enables management not only to manage the reverse product flow efficiently, but to identify opportunities to reduce unwanted returns and to control reusable assets such as containers.

Reverse logistics is the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in process inventory, finished goods and related information from the points of consumption to the point of origin for the purpose of recapturing value or proper disposal. The logistics activity corresponding to green marketing is referred to as reverse logistics. Reverse logistics includes product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal, and refurbishing, repair, and remanufacturing. When viewed from a business logistics perspective, the relevant issues are those of cost, customer service, profitability, partnerships/alliances, and competitive advantage.

Concept of Marketing Performance

Marketing performance is a marketing concept which is often used as a dependent variable. According to Raza (2014), marketing performance is frequently investigated in most marketing research while other strategic issues in marketing are correlated to it. The term "marketing performance" refers to the marketing outcomes of a firm which can be measured through sales growth, market share, customer retention level, competitive advantage, customer satisfaction and loyalty (Jayapal & Omar, 2017). Marketing performance is also defined as the behaviour of a

valuable asset in the marketplace (Jayapal & Omar, 2017). Sarker et al (2001) defined a firm's marketing performance in terms of sales growth, market share, market development and product development. Similarly, Ritala (2012) posited that a firm's marketing performance is the rate at which a firm's products or services are patronized by customers in the market (sales) and the portion of the market which the firm has been able to capture (market share).

A firm's marketing performance is a measure of consumers' preference for its product/service over similar products/services. A firm can use its market performance to ascertain how consumers react to its products offerings. A higher market performance is an indicator that the consumers are satisfied with the products/service rendered and vice versa. Hence, every company wants to increase their market performance since it is the only way to improve financial performance and achieve the desired goals of the organization (Ogunnaike et., al., 2014).

Measuring a firm's market performance is crucial to the growth and survival of an organization. When an organization is doing well consistently in terms of increasing sales and market share from year to year, the company will be able to make more profit and expand its operations. But when the market performance of the company is poor in all ramifications (sales and market share), the company will find it difficult to grow and sustain itself in the industry. For this reason, shareholders and business owners are interested in knowing how well their product is doing in the market. If an organization experienced massive increase in sales (sales growth) and market share, the company is said to have a good market performance in the period under review (Niazi, 2011).

Measures of Marketing Performance

Marketing performance is measured using different indicators. However, in this study, marketing performance will be measured using market share growth, customer retention growth and brand reputation. These measures of marketing performance will be discussed below:

Market Share Growth

Market share growth can be defined as an increase in portion of a market captured by a company (Antonova, 2014) defined market share growth as the percentage by which the portion of market served by a company has grown typically from year to year. A company's market share can be ascertained by calculating the sales made by the company at a given period and divide the figure by the total sales of the industry over the same period. The result which is expressed in percentage enables the company to know how customers value its products in relation to competitors' offerings. For instance, if a company like Toyota sold N200 million worth of cars in Nigeria for the year 2017, and the total cars sold in Nigeria was N400 million at the same period, Toyota's Nigeria market share for cars would be 50%.

Increasing market share is the most important goal for companies because it has a direct impact on revenue (Amelia, 2017). In many instances, market share is often considered as an important asset for competing firms because it helps to increase revenue and enhance business growth. However, a company that experiences a decline in market share will have a serious problem on the long-run. Armstrong and Greene (2007) stated that companies whose market share is below a certain level will not be profitable and may cease from operation anytime soon. Many investors who intend to buy the share of a company use the company's market share index to make decision. They carefully look at the rate of increase and decrease of the market share from one period to the other because it signifies the relative competitiveness of the company's products in the market. If the market share of the company is growing steadily, it indicates that the company's revenue is growing at the same rate as its market share. Amelia (2017) stated that a company whose market share is growing from year to year grows its revenue faster than its rivals in the same industry. When the market share of a company increases from year to year, it enables the company to expand its operation and increase

profit. Nigerian companies are determined to increase their market share by drawing the attention of the public to their products through advertising, reducing prices and granting discounts.

Brand Reputation

Fombrun (2010) defines reputation as "the overall estimation in which a company is held by its constituents". In this context, both practitioners and scholars agree on the aspect that a positive reputation facilitates a profitable brand and leads to competitive benefits (Herbig & Milewicz, 1995). When it comes to building reputation, corporations need to ask themselves how their environment perceives them (Urde & Greyser, 2014). Thus, brand reputation represents the attractiveness of the brand towards employees, suppliers, investors, communities and customers (Blackstad & Cooper, 2006). This indicates that brand reputation is gradually shaped by the images held by a number of different stakeholders instead of being limited to the impressions of its customers respectively fans only. A positive reputation of a corporation may also consequently lead to supportive acting by different constituents (Milewicz & Herbig, 1994; Roper & Fill, 2012; Greyser, 2009). Since for a business the "single necessary and sufficient condition is a paying customer" (Aulet, 2013, p. 25), the main focus in the study at hand lays on the decision making, which is based on brand reputation, during the online customer journey.

Theoretical Review

This study is anchored on Strategic Choice Theory propounded by Alfred Chandler in 1962.
According to strategic choice theory, decisions made by top management have an impact on organizational performance as well as how internal and external organizations interact (Wangrow & Schloemer, 2019). In order to increase organizational performance levels, the idea underlies the significance of key management decisions. According to Sinaga, et., al., (2019), strategic choice theory also illustrates various environmental factors, such as supply, inventory, and purchase management, which have an impact on a manager's decision-making abilities. The idea states that management with decision-making authority must choose the appropriate inventory investment and inventory optimality options to significantly improve performance results. The theory, sees management as downstream decision makers who influence choices while modifying organizational procedures, structures, and systems (Sinaga et al., 2019). To maintain high performance levels, they must therefore make wise decisions to protect the organization's culture, resources, and inventory. Furthermore, Achieng, et., al., (2018) also developed a strategic option model that illustrates how an organization's actions, environment, and performance objectives are all interconnected. The methodology seeks to ensure high performance requirements to boost efficiency when resources are constrained or limited. The idea contends that management must make pertinent and wise judgments regarding inventory management in order to prevent future inventory issues. Therefore, managers should use inventory management strategies that are appropriate for their line of work; failing to do so could endanger a company's profitability, operationalization, general performance, and continued existence. This researcher considers the strategic choice theory as most appropriate to underpin the study since it shows how top management choices affect marketing performance levels. Each choice made by management regarding green supply chain management practices could have a positive or negative effect on the success of their businesses.

METHODOLOGY.

This study adopted a correlational survey design. This was because the study involves measuring the relationship between the study variables, green supply chain management practices and marketing performance. The population of the study was all 12 registered petroleum products tank farms in Rivers State. This information was gotten from https/www.nuprc.gov.ng. The Nigerian Upstream Petroleum Regulatory Commission is one of the regulatory bodies in the Nigerian oil and gas industry.

The study adopted the population of 12 registered petroleum products tank farms as its sample size making the study a census study. To generate data for the study, a total of 120 respondents (top level managers and directors) were selected through purposive sampling techniques. Ten respondents each from the 12 petroleum products tank farms in Rivers State were selected as respondents.

Structured questionnaire was used as the instrument for data collection.
The questionnaire was structured in a 5 point likert scale ranging from strongly agree, agree, undecided, disagree and strongly disagreed.

Out of the 120 questionnaires distributed only 90 was correctly filled and return for the analysis. The data collected was analyzed statistically while the formulated hypotheses were tested using the statistical tool, Pearson Product Moment Correlation (PPMC), this was supplemented by the statistical package for social science (SPSS) version 23.0.

DATA ANALYSIS AND PRESENTATION OF FINDINGS.

Data Analysis and Results

In this section, the data collected in the questionnaires were analyzed statistically. The analysis focused on the demographic variables of the respondents as well as the univariate, bivariate and multivariate analyses. The results of the analysis carried out were interpreted accordingly and used for the discussion of findings.

Hypothesis 1

Ho_1: There is no significant relationship between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State.

Table 1: Result of bivariate analysis between eco-design and market share growth of Petroleum Products companies

			Eco-design	Market share growth
Pearson Correlation (r)	Eco-design	Correlation Coefficient	1.000	.646**
		Sig. (2 tailed)	.	.001
		N	90	90
	Market share growth	Correlation Coefficient	.646**	1.000
		Sig. (2 tailed)	.001	.
		N	90	90

**Correlation is significant at 0.01 levels (2 tailed)
*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-generated Output

Table 1 shows the result of bivariate analysis carried out between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State. The result indicates that eco-design is strongly and positively correlated to market share growth of Petroleum Products Tank Farms in Rivers State($r = .646^{**}$) and the symbol ** signifies that this correlation is significant at 0.01 level. Based on this result, we then reject the null hypothesis (Ho_1) and accept the alternate hypothesis which states that there is strong positive and significant relationship between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State.

Hypothesis 2

Ho_2: There is no significant relationship between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State

Table 2: Result of bivariate analysis between eco-design and brand reputation of Petroleum Products companies

			Eco-design	Brand reputation
Pearson Correlation (r)	Eco-design	Correlation Coefficient	1.000	.745**
		Sig. (2 tailed)	.	.001
		N	90	90
	Market Share Growth	Correlation Coefficient	.745**	1.000
		Sig. (2 tailed)	.001	.
		N	90	90

**Correlation is significant at 0.01 levels (2 tailed)
*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-generated Output

Table 2 presents the result of bivariate analysis carried out between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State. The result shows a strong and positive correlation between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State(r = .745**) and this correlation is significant at 0.01 level as indicated by the symbol **. As a result of this, we then reject the null hypothesis (Ho_3) and accept the alternate hypothesis which states that there is strong positive and significant relationship between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State.

Hypothesis 3

Ho_1: There is no significant relationship between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State.

Table 3: Result of bivariate analysis between reverse logistics and market share growth of Petroleum Products companies

			Reverse logistics	Market share growth
Pearson Correlation (r)	Reverse logistics	Correlation Coefficient	1.000	.679**
		Sig. (2 tailed)	.	.001
		N	90	90
	Market share growth	Correlation Coefficient	.679**	1.000
		Sig. (2 tailed)	.001	.
		N	90	90

**Correlation is significant at 0.01 levels (2 tailed)
*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-generated Output

Table 3 presents the result of bivariate analysis carried out between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State. The result shows that reverse logistics has a strong positive correlation with market share growth of Petroleum Products Tank Farms in Rivers State(r = .679**) and the symbol ** indicates that this correlation is significant at 0.01 level. Therefore, the null hypothesis (Ho_7) is rejected and the alternate hypothesis is accepted. This means that we then accept that there is weak positive and significant relationship between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State.

Hypothesis 4

Ho_4: There is no significant relationship between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State

Table 4: Result of bivariate analysis between reverse logistics and brand reputation of Petroleum Products companies

			Reverse logistics	Brand reputation
Pearson Correlation (r)	Reverse logistics	Correlation Coefficient	1.000	.662**
		Sig. (2 tailed)	.	.001
		N	90	90
	Brand reputation	Correlation Coefficient	.662**	1.000
		Sig. (2 tailed)	.001	.
		N	90	90

**Correlation is significant at 0.01 levels (2 tailed)
*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-generated Output

Table 4 shows the result of correlation analysis carried out between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State. The result indicates that reverse logistics has a strong positive correlation with brand reputation of Petroleum Products Tank Farms in Rivers State(r = .662**) and this correlation is significant at 0.01 level as indicated by the symbol **. As a result of this, we then reject the null hypothesis (Ho_9) and accept the alternate hypothesis which states that there is strong positive and significant relationship between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State.

Summary of Findings

Based on the results of the analysis carried out on the study variables, the findings are:

i. There is a significant relationship between eco-design and market share growth of Petroleum Products Tank Farms in Rivers State.

ii. There is a significant relationship between eco-design and brand reputation of Petroleum Products Tank Farms in Rivers State.

iii. There is a significant relationship between reverse logistics and market share growth of Petroleum Products Tank Farms in Rivers State.

iv. There is a significant relationship between reverse logistics and brand reputation of Petroleum Products Tank Farms in Rivers State.

Conclusion

This study examined the relationship between green supply chain management (GSCM) practices and marketing performance of petroleum products tank farms in Rivers State, with a particular focus on eco-design and reverse logistics. The findings revealed a strong, positive correlation between the dimensions of green supply chain management (GSCM) practices and the measures of marketing

performance such as market share growth, and brand reputation. Green procurement has the strongest correlation with market share growth (r = 0.844), highlighting it as the most influential dimension in enhancing marketing performance. Eco-design also plays a key role, especially in retaining customers (r = 0.815), while reverse logistics strongly impacts on market share growth (r = 0.679). The results indicate that organizations that adopt GSCM practices not only improve their environmental footprint but also gain competitive advantages in terms of increased customer loyalty, stronger brand positioning, and enhanced market performance. Therefore, the study concludes that Green Supply Chain Management (GSCM) Practices via its dimensions is a significant predictor of marketing performance of petroleum products tank farms in Rivers State.

Recommendations

i. Petroleum companies should fully integrate green supply chain management practices into their business models. Eco-design, which prioritizes sustainable materials and processes, should be a standard practice.

ii. Petroleum companies should invest in modern technologies that complement GSCM practices. Technology plays a crucial role in amplifying the effectiveness of eco-design, green procurement, and reverse logistics, ultimately leading to better market performance.

iii. Petroleum companies should implement green procurement. By prioritizing green procurement, petroleum firms can ensure that their entire supply chain aligns with their sustainability goals. This practice not only reduces environmental impact but also enhances the firm's reputation among environmentally conscious consumers.

iv. Petroleum companies should stay abreast of local, national, and international regulations regarding environmental protection. Aligning green supply chain practices with these regulations not only ensures compliance but also allows companies to take advantage of government incentives and programs designed to promote sustainability.

v. To fully realize the benefits of GSCM, petroleum companies should invest in regular training programs for their employees. These programs should focus on sustainability practices, the environmental impact of supply chain activities, and the importance of eco-friendly operations.

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