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GREEN CUSTOMER DEMAND AND SUPPLY CHAIN PERFORMANCE OF FOOD AND BEVERAGES MANUFACTURING COMPANIES IN SOUTH-SOUTH, NIGERIA

By

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Abstract

This study examined the relationships between green customer demand and supply chain performance of the food and beverages manufacturing companies in South-South Nigeria. The study adopted a cross-sectional survey research design. The population of this study was seven six (76) food and beverages manufacturing companies in south-south Nigeria. Primary data was generated through structured questionnaire. Hence, we study the entire accessible population (census) of the seven six (76) food and beverage manufacturing companies. However, the researcher selected one (1) respondents from each of these companies' which are Procurement managers to whom copies of questionnaire was administered. Thus, the total numbers of respondents were (76). However 12 copies of questionnaire were return but unusable hence sixty four (64) copies were used for data analysis. The research instrument was validated the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. Three hypotheses were tested using the Spearman's Rank Order Correlation Statistics. Findings revealed that there is a significant positive relationship between green customer demand and supply chain Performance. Specifically; green customer demand has a positive significant relationship with supply chain effectiveness, supply chain efficiency and supply chain reliability. Hence, the study concludes that, green customer demand positively enhances supply chain performance. This suggests that when these manufacturing companies implement environmentally friendly practices by meeting up customers demand it leads to improvements in their overall supply chain performance. The study recommends that, Food and beverage manufacturing companies should adopt sustainable practices. This shift requires a focus on green supply chain management to optimize environmental performance and meet customer expectations for eco-friendly products. Thereby, reduce cost, and untimely improve customers' satisfaction.

***Key Words**: Green Customer Demand, Supply Chain Performance, Supply chain effectiveness, Supply Chain Efficiency, Supply Chain Reliability*

Introduction

The increased awareness about the environmental challenges combined with the increased consumer education on climate issues, has resulted in a major change in their purchasing behaviors. Consumers are changing their buying habits, and putting pressure on manufacturing companies to be more environmentally friendly, by re-evaluating their operations and adopting more sustainable practices. As manufacturing companies strive to meet this new market demand, many businesses have adopted environmental strategies that focus on reducing their ecological footprint, reducing energy consumption, and minimizing waste (Melville, 2010). These strategies usually lead to innovations and supply chain efficiency by optimizing resource use which bring benefits for both the environment and the companies' economic profits. Green customer demand refers to the increasing preference among consumers for products and services that are environmentally friendly and produced with sustainability in mind. This demand is driven by heightened awareness of environmental issues, a desire for ethical purchasing, and a willingness to pay more for products that align with these

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values. Hence, Customers' demand on vendors and manufacturing firms to meet some environmental criteria are serving as a powerful force driving innovation, pushing firms to improve their products and optimize their processes. Supply chain performance cut-across companies boundaries because it includes basic raw materials, components, subassemblies and finished products, and distribution through various channels to the end consumer and also cut-across traditional functional lines. Supply chain are pliant, they consistently adjust to changing supply and demand structure of the product they handle (Douglas, 2004).A firms supply chain is cardinal to its business wellness, this is true now that competition in the business world is increasingly shifting from a focus on individual firm to supply chain networks. (Pagell & Shevchenko, 2014), argue that properly designed environmental management in the supply chain can create competitive advantage and result in performance improvements. Hence, there has been a little research on green customer demand and supply chain performance of food and beverage manufacturing companies in Nigeria. Following this stream of thought, the researchers investigated the relationship between green customer demand and supply chain performance on food and beverage manufacturing firms in South–South Nigeria. . This study conceptualized a frame work as shown in Figure1.

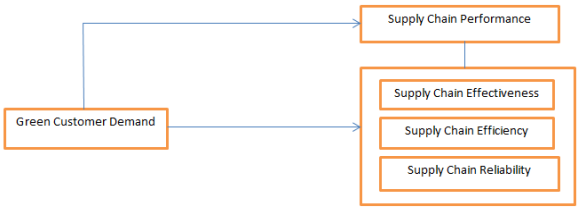

Figure 1.1: Conceptual frame work of Green customer demand and supply chain performance

Source: Researcher conceptualization from review of literature (2023).

THEORETICAL FOUNDATION OF THE STUDY

2.1. Stakeholder Theory

This theory was propounded by Freeman in 1984, and was expanded by Clarkson (1995). They posited that the progress of any organization is solely dependent on the relationship with its stakeholders; customers, suppliers and regulatory bodies. Stakeholders are individuals and groups who can be affected by a firm's decisions and can affect a firm's performance (Freeman, 1984). Stakeholder theory suggests that firms produce externalities, which can cause stakeholders to put pressure on firms to reduce negative effects, and thus influence organizational best practice (Sarkis , Zhu, & Lai 2011). Florida and Davidson (2001) opined that organisations that are actively engaged with community stakeholders are more likely to institute pollution prevention programs. Furthermore, it has been suggested that a firm's success and ability to survive is predicated on its ability to satisfy the demands of its stakeholders (Freeman & Liedtka, 1991). Supply chain stakeholders, especially customers and suppliers, may affect and motivate a firm's decision to adopt environmental best practices successfully (Guoyou , Saixing Chiming , Haitao & Hailiang 2013; Delmas & Toeffel, 2004;Sarkis et al., 2011). Organisations face pressure from customers who wish to ensure that their purchases sufficiently meet environmental quality standards, which will enable firms to reduce their environmental impact (Handfield , Walton, Sroufe & Melnyk 2002; Sarkis et al., 2011). Many large customers, in developing and developed countries, have demanded their suppliers for better environmental performance, which leads to greater motivation for suppliers to cooperate with customers for the implementation of green practices (GEMI, 2001; Guoyou et al., 2013; Zhu et al., 2008). Understanding the needs of the end customer is an integral part of Supply Chain Management (Zhu & Sarkis, 2004; Vachon & Klassen, 2008). Green integration with supply chain partners such as customers has become critical for company to close the supply chain gaps (Zhu, Sarkis & Lai (2008). In most industries customers are more powerful than upstream suppliers, and customer-integrating practices play a more important role in achieving supply chain success (Huo, 2012). Hence, this theory serves as the baseline theory for this paper.

Green Customer Demand

The concept of green customer demand refers to individuals who prioritize purchasing products that minimize environmental harm (Guckian, 2017). This demand drives firms to adopt or enhance green manufacturing initiatives to meet evolving customer needs (Lin, Chen, & Huang, 2014). The term "green" is often used interchangeably with "sustainability" (Liu, Chen, Kang, Ngai, & Li, 2005; Zhang & Wang, 2005; Engineer, 2007; Polcari, 2007). Sustainability refers to the ability of the present generation to meet its needs without compromising the ability of future generations (World Commission on Environment and Development, 1987). Globally, increasing environmental awareness has led customers to demand higher environmental standards from businesses. This demand acts as a major driver of both product and process innovation across industries. As consumers expect environmentally friendly practices and products that meet green criteria, manufacturing companies face pressure to innovate in both product offerings and production processes. Such green innovation not only addresses environmental concerns but also enhances competitiveness and profitability (Khachatryan, Sakhbieva, Kirpicheva, Dolgova, & Chernov, 2023).By aligning supply chain processes with sustainable practices, businesses can gain a competitive advantage (Saxena, Seetharaman, & Shawarikar, 2024). Cheng, Ahmad, Irshad, Alsanie, Khan, Ahmad, and Aleemi (2023) emphasize that environmental awareness is essential to fostering sustainability and green productivity. Furthermore, Wang and Ahmad (2024) argue that adopting green practices positively impacts supply chain performance by avoiding environmental risks and regulatory penalties while unlocking new market opportunities, strengthening a company's green image, and ultimately improving overall performance.

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SUPPLY CHAIN PERFORMANCE

The performance of business firms, which essentially, is a reflection of how they performed, or are performing, with respect to attaining objectives, fulfilling missions, and operating based on core values has consistently been a focus of business theorists and practitioners. This is largely due to the notion that a firm ability to survive, prosper and attract investors' interest is hinged on its performance records and feature performance potentials. A company performance could be measure in both financial and non-financial terms, and such measurement criteria are expected to represent key performance indicators that are universal in the firms industry (Chen & paulraj, 2004; Gawanka, Kamble & Verma, 2013). Nevertheless, companies realize that the goodness or badness of their business performance is strongly linked to the performance wellness of the supply chain they depend on. Hence, increase attention is accorded to supply chain performance. A supply chain is a network of independent business and individual that undertake critical activities that are directly or indirectly instrumental to fulfill customer requirements by facilitating movement of product from source of supplies of input materials to the delivery of finished product to users Supply chain are galvanized to satisfy customers' needs and in the process, generate profit for the conceived participants in the chain (Marwah, Thakar & Gupta, 2014). Supply chain performance is thus, conceived as the level of effective efficient with which a supply chain meet Customers' needs of product availability, responsiveness, ability to deliver desired variety ,capacity utilization, and on time delivery of customer orders (Wachira, Mburu & Kiai, 2022; Gunasekaran., Patel & McGaughey, 2004). Supply chain performance cross companies boundaries because it includes basic materials, components, subassemblies and finished products, and distribution through various channels to the end customer and also cross traditional functional lines. Supply chain are pliant; they consistently adjust to changing supply and demand structure of the product they handle (Douglas, 2004), a firms supply chain is cardinal to its business wellness; this is true now that competition in the business world is increasingly shifting from a focus on individual firm to supply chain networks.

SUPPLY CHAIN EFFECTIVENESS

One of the supply chain performance indicators is effectiveness which is referred as firm' ability to come up with solutions aimed at providing value to customers at various customers' points of collection than available prices or offers (Möller & Törrönen, 2003). The above definition appears to match effectiveness to commercial action as being capability to come up with fresh resolutions with additional significance is accentuated. Therefore firms need to ensure that their processes are effective and being effective means customers are getting required products in time as per the ordered quantity. Effectiveness is generated in an association by the practice of courtesy to diverse interdependencies, i.e. the assessor is prejudiced in its assessment hence it is heavily recommended that effectiveness should be assessed without any alterations because it adds value in supply chain and is groupings of ancillary paybacks got over the merchant and the vendor networks (Walter, Achim, Thomas Ritter & Hans, 2001). Effectiveness is a crucial component of long-term SCM success. It's also crucial to protecting competitive strength, availability of working capital, and business continuity during times of plenty while providing adequate operational agility and flexibility to solve problems and overcome the negative impact of disruptions to the global supply chain. Supply chain effectiveness includes cost reduction in shipping and handling, as well as lowering distribution costs. These efforts will lead to a decline in overall logistic cost and product price. A much broader perspective in continuity planning is essential, as many threats to business survival lie outside the focal firm. Thus, resilience should be designed in supply chain development to mitigate vulnerability. Adoption of a mitigation strategy would enable a firm to manage operational risks effectively, sustain supply chain operation and recover from disruptions (Tang, 2006). These factors would enable supply chain operations to be more responsive to customer demand with fewer inventories and at lower cost (Faisal, Banwet & Shankar, 2006). Mitigation strategies should be incorporated into supply chain development. Effectiveness could also be viewed as the ability to meet operational goals, which enhance the ability to adapt to changing business environment and further survival. Richard, Devinnea, yip and Johnson (2009), viewed it as the combination of organizational performance and a multitude internal outcomes usually related with more efficient operations and other outside measures that are associated to consideration that are larger than those related with economic valuation, such as social corporate responsibility.

SUPPLY CHAIN EFFICIENCY

Efficiency in supply chain operations relates to optimal resource utilization and cost and waste reduction (Nwokah, 2006). Efficiency is a metric used to measures the output of a system from each unit of input (Maheswari, Kumar & Kumar, 2006). Output is what is produced, while input represents the resources that go into the production. Traditionally, efficiency is an aspect of the productivity discourse; and addresses attempts to minimize cost of operations and reduce wastages (Sodhi & Sons, 2009). In the view of Weber (2002, as cited in Nwokah, 2006) by improving efficiency, costs of operations are controlled in order to cause an increase of return to shareholders. The concept of efficiency thus focuses on improving a system's processes to run on less cost, minimize resource consumption, and reduce wastage, while providing consistent quality of services. It is not just about achieving goals but streamlining operations to deliver better products at better prices and to reduce unnecessary expenses (Vereecke & Muylle, 2006). Efficiency is paramount to the success of a supply chain. Through efficiency, processes are simplified; resources are freed for alternative used, while growth and profitability is achieved (Youn, Yang, Hong & Park, 2013).

Companies strive to become more efficient and less wasteful in their operations. One avenue through which they pursue this goal is their supply chain; and to measure the performance of their supply chains, companies resort to

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several key performance indicators (Vereecke & Muylle, 2006). Efficiency, an essentially internal standard of performance that measures of how best, financial, human, technological and material resources are harnessed is one of such metrics (Arawati, 2011). In supply chain contexts, efficiency is the ability of a supply chain to use resources, technology, and expertise in ways that minimize costs and wastages and maximize profits. The goal of an efficient supply chain is to save money and maximize profits by optimizing processes and stages.

SUPPLY CHAIN RELIABILITY

A supply chain needs high reliability to insure its effectiveness and efficiency (Burkovskis, 2008).The increasing reliability-related researches in engineering and management fields are carried out; how- ever, they seldom refer to concepts in the literature of the academic supply chain. Up to now, there has not been a generally acknowledged definition of supply chain reliability. Thomas, (2002) was the first who explicitly presented the concept of Supply Chain Reliability defined as 'the probability of the chain meeting mission requirements to provide the required supplies to the critical transfer points within the system'. Some sources presented the concept of Supply Chain Reliability from a specific perspective, for example, arrival time (Van Nieuwenhuyse & Vandaele, 2006) or potential failure (Quigley & Walls, 2007). According to PLS Logistics (2016), supply chain reliability refers to the degree to which a supply chain yields consistent performance. Increasing reliability, reducing inventory and preparing for demand are top priorities for supply chain professionals. The top priorities activities for supply chain professionals include Increase of reliability, reduction of inventory as well as forecasting and preparing for demand. The reliability of a supply chain is critical in efforts of implementation of an operative supply chain management strategy in manufacturing organizations since it enhances the speed on relief response and most importantly, brings down costs.

GREEN CUSTOMER DEMAND AND SUPPLY CHAIN PERFORMANCE

Kimaro, (2014) Studied the relationship of Customer Demand and Green Product Innovation on Firms' Performance: A Case of Food Processing Firms in Tanzania. Lack of a clear link between these variables presented the research gap. Specifically, the study was guided by two research questions: a) Does customer demand influence green product innovation? b) Does green product innovation influence performance of the firm? Data was collected from 75 manufacturing firms in Dar es Salaam by administering questionnaires to CEOs, and technical and marketing directors of selected companies. The collected data was analysed using descriptive statistics and Chi-square to establish the relationship between the variables of this study. The findings show the kind of relationship that exists between customer demand and green product innovation, and between green product innovation and performance of a firm. This implies that managers have to study customer preferences in order to develop flexible strategies to satisfy their demands. By so doing, they will be in a position to develop new green products to meet customer needs that are likely to be priced high; this translates to improved profit rates and hence improved firm performance. Although it does not really key in to the measures of the variables which is green customer demand and supply chain performance but it is relative.

Bortoluzzi, Lunkes and Zambra, (2023). Studied the Influence of Green customer demand and eco-control on eco-innovation and on the sustainable growth of beef sector companies in Brazil .To achieve the goal, the researchers administered a questionnaire to managers of 95 companies of that sector. Data were analyzed through structural equation modeling (PLS-SEM). The results show that green customer demand affects positively and significantly eco-innovation and sustainable growth, and green customer demand and eco-innovation influence the sustainable growth of beef companies. Furthermore, not only does Green customer demand improve sustainable growth, it also brings about important complementary results to environmental management. Although it does not really fit in the criterion variable which is supply chain performance but is relative. Grekova, Bremmers, Trienekens, Kemp and Omta (2014), studied the relationship between customer demand and supply chain performance in Dutch food and beverage manufacturing companies. This study expands the understanding of the factors that influence managers to develop Extending–Environmental Management with a multi-period empirical research. Based on the foregoing, the study thus hypothesized that:

Ho1: Green customer demand does not significantly relate with supply chain effectiveness of food and beverages manufacturing companies in South-South Nigeria.

Ho2: Green customer demand does not significantly relate with supply chain efficiency of food and beverages manufacturing companies in South-South Nigeria.

Ho3: Green customer demand does not significantly relate with supply chain reliability of food and beverages manufacturing companies in South-South Nigeria.

METHODODLOGY

The study adopted a cross sectional survey research design to establish the relationship between Green customer demand and supply chain performance of the food and beverages manufacturing companies in south-south Nigeria. Three research questions were asked, the populations consist of seventy six (76) food and beverages manufacturing companies in south-south Nigeria. The researchers studied the entire accessible population (census) study. However, the researcher selected one (1) respondent from each of these companies to whom copies of questionnaire were administered. The respondents were procurement managers. In all, information was elicited from the mangers in all companies. The questionnaire was the instrument used to collect primary data from respondents. The instrument was subjected to academic scrutiny to determine its face, content and construct validity.

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Furthermore, to determine the reliability of the research instrument, a pilot study was conducted (pretest) and the data was subjected to cronbach,s Alpha reliability test, a threshold of 0.7 which indicate that it was reliable. Shown in table1.1 the spear man rank correlation coefficient were used in testing the three (3) hypotheses stated in the study with the aid of statistical Package for social sciences (SPSS)version 23.0.

Table 1:1. Reliability Coefficients of Variable Measures

S/No	Dimensions/Measures of the study variable	Number of items	Cronbach's Alpha	Comment
1	Green customer demand	7	0.781	Reliable
2	Supply Chain Effectiveness	6	0.798	Reliable
3	Supply Chain Efficiency	6	0.843	Reliable
4	Supply Chain Reliability	6	0.799	Reliable

Source: SPSS Output, (2023).

Data Presentation and Analysis

Table 2: Descriptive Statistics for Green Customer Demand

	N	Minimum	Maximum	Mean	Std. Deviation
Our key customer often puts forward improving proposes for green product innovation	64	1.00	5.00	3.9250	1.11912
We often hear key customer's opinions on product prototypes when developing green products.	64	1.00	5.00	3.9143	.80754
We involve key customer into the green product design and development stage.	64	1.00	5.00	3.9250	1.11912
Our key customer has major influence on the design of green products.	64	1.00	5.00	3.7786	1.32290
There is a strong consensus in our firm that customer involvement is needed in green product innovation.	64	1.00	5.00	3.7143	1.16265
We have continuous green product improvement programs that include our key customer.	64	1.00	5.00	3.7286	1.15992
Valid N (listwise)	64				

Source: SPSS Output

The data (4) illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of Green customer demand which is the predictor variable. The construct examined the context and manifestations of Green customer demand within the target organizations with indicators aimed at examining respondents' perception of Green customer demand through its indicators. The results affirm to all six indicators of Green customer demand within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in food and beverage companies in South-South, Nigeria are strongly of the opinion that Green customer demand is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 3: Descriptive Statistics for Supply Chain Effectiveness

	N	Minimum	Maximum	Mean	Std. Deviation
We strive to provide value driven services to our supply chain partners	64	1.00	5.00	3.4286	1.39709
We develop after Supply services to enhance customer satisfaction	64	1.00	5.00	4.0679	1.19394
We develop action plans to make us timely in meeting consumers expectation	64	1.00	5.00	3.8929	1.00676
We always meet our clients desired supply chain goals	64	1.00	5.00	3.8643	1.05891

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Green procurement adoption enhances our organizational performance	64	1.00	5.00	3.5643	1.34517
We get feedback from our supply chain clients in order to improve on their services	64	1.00	5.00	3.7000	1.33172
Valid N (listwise)	64				

Source: SPSS Output

The data (3) illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of supply chain effectiveness which is a measure of supply chain performance. The construct examined the context and manifestations of supply chain effectiveness within the target organizations with indicators aimed at examining respondents' perception of supply chain effectiveness through its indicators. The results affirm to all six indicators of supply chain effectiveness within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in food and beverage companies in South-South, Nigeria are strongly of the opinion that supply chain effectiveness is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 4: Descriptive Statistics for Supply Chain Efficiency

	N	Minimum	Maximum	Mean	Std. Deviation
We utilized organizational scarce resources prudently in order to meet supply chain goals	64	1.00	5.00	3.4143	1.35987
We provide exceptional product to supply chain partners witting the appropriate cost structure	64	1.00	5.00	3.9250	1.11912
Does supply chain department utilized time and effort for the intended plans and purpose	64	1.00	5.00	3.9143	.80754
Our supply chain department work hard in achieving maximum efficiency	64	1.00	5.00	3.6357	1.09878
We train our staffs annually to increase their knowledge in work flow	64	1.00	5.00	3.9536	1.21873
Our supply chain visibility are always improve to keep abreast with current reality	64	1.00	5.00	3.8929	1.00676
Valid N (listwise)	64				

Source: **SPSS Output**

The data (table 4) illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of supply chain efficiency which is a measure of supply chain performance. The construct examined the context and manifestations of supply chain efficiency within the target organizations with indicators aimed at examining respondents' perception of supply chain efficiency through its indicators. The results affirm to all six indicators of supply chain efficiency within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in food and beverage companies in South-South, Nigeria are strongly of the opinion that supply chain efficiency is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 5: Descriptive Statistics for Supply Chain Reliability

	N	Minimum	Maximum	Mean	Std. Deviation

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Our supply chain department constantly delivers superior services to customers	64	1.00	5.00	3.8643	1.05891
Our supply chain partners pose confidences on us in terms of value added services	64	1.00	5.00	3.5643	1.34517
We delivers our supply chain partners in record time	64	1.00	5.00	3.3429	1.40542
We provides service as promised to our customer	64	1.00	5.00	3.7000	1.33172
Our supply chain department is dependable when handling customers service	64	1.00	5.00	3.4143	1.35987
There is an increased level of reliability that influences the operations	64	1.00	5.00	3.9250	1.11912
Valid N (listwise)	64				

Source: SPSS Output

The data (5) illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of supply chain reliability which is a measure of supply chain performance. The construct examined the context and manifestations of supply chain reliability within the target organizations with indicators aimed at examining respondents' perception of supply chain reliability through its indicators. The results affirm to all seven indicators of supply chain reliability within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents in food and beverage companies in South-South, Nigeria are strongly of the opinion that supply chain reliability is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 6: Correlation for Green customer demand and Supply Chain Performance Measures

			Green Customer Demand	Supply Chain Effectiveness	Supply Chain Efficiency	Supply Chain Reliability
Spearman's rho	Green Customer Demand	Correlation Coefficient	1.000	.808**	.786**	.803**
		Sig. (2-tailed)	.	.000	.000	.000
		N	64	64	64	64
	Supply Chain Effectiveness	Correlation Coefficient	.808**	1.000	.952**	.940**
		Sig. (2-tailed)	.000	.	.000	.000
		N	64	64	64	64
	Supply Chain Efficiency	Correlation Coefficient	.786**	.952**	1.000	.944**
		Sig. (2-tailed)	.000	.000	.	.000
		N	64	64	64	64
	Supply Chain Reliability	Correlation Coefficient	.803**	.940**	.944**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	64	64	64	64

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output Version 23.0

The correlation coefficient (rho) result in table (2) was used to answer research questions 12& 3 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.808 on the relationship between Green customer demand and supply chain effectiveness. This value implies that a very strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in supply chain effectiveness was as a result of the adoption of Green Customer demand. Therefore, there is a very strong positive correlation between Green customer demand and supply chain effectiveness of food and beverage companies in South-South, Nigeria.

Similarly, Table 3 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.786 on the relationship between Green customer demand and supply chain efficiency. This value implies that a strong relationship exists between the variables.

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The direction of the relationship indicates that the correlation is positive; implying that an increase in supply chain efficiency was as a result of the adoption of Green customer demand. Therefore, there is a very strong positive correlation between Green customer demand and supply chain efficiency of food and beverage companies in South-South, Nigeria.

Furthermore, Table 4 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.803 on the relationship between Green customer demand and supply chain reliability. This value implies that a very strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in supply chain reliability was as a result of the adoption of Green customer demand. Therefore, there is a very strong positive correlation between Green customer demand and supply chain reliability of food and beverage companies in South-South, Nigeria.

Discussion of Findings

The statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from table (2) the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between Green custom demand and supply chain effectiveness. These findings collaborate with the position of Kimaro, (2014) who studied the relationship of Customer Demand and Green Product Innovation on supply chain Performance: A Case of Food Processing Firms in Tanzania. Lack of a clear link between these variables presented the research gap. The findings show the kind of relationship that exists between customer demand and green product innovation and supply chain performance. This implies that managers have to study customer preferences in order to develop flexible strategies to satisfy their demands. By so doing, Sustainability with efficiency, cost, and responsiveness will be achieved and it enhanced supply chain performance. Therefore, there is a very strong positive significant relationship between Green customer demand and supply chain effectiveness in food and beverage manufacturing companies in South-South, Nigeria.

Also displayed in the table (3) is the statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from table (3) the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between Green customer demand and supply chain efficiency.

The findings collaborates with Bortoluzzi, Lunkes and Zambra, (2023). Who Studied the Influence of Green customer demand and eco-control on eco-innovation and on the sustainable growth of beef sector companies in Brazil .To achieve the goal, the researchers administered a questionnaire to managers of 95 companies of that sector. Data were analyzed through structural equation modeling (PLS-SEM). The results show that green customer demand affects positively and significantly eco-innovation and sustainable growth, and green customer demand and eco-innovation influence the sustainable growth of beef companies. Furthermore, not only does Green customer demand improve sustainable growth, it also enhance the overall supply chain performance and brings about important complementary results to environmental management. Therefore, there is a strong positive significant relationship between Green customer demand and supply chain efficiency in food and beverage manufacturing companies in South-South, Nigeria.

Also displayed in the table (4) is the statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from table (4) the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between Green customer demand and supply chain reliability.

The findings collaborates with Grekova, Bremmers, Trienekens, Kemp and Omta (2014), studied the relationship between customer demand and supply chain performance in Dutch food and beverage manufacturing companies. This study expands the understanding of the factors that influence managers to develop Extending–Environmental Management with a multi-period empirical research. The study address the effects of external institutional pressures regulative, normative, and culturally-cognitive and the level of in-company environmental management (I-EM) on Extending–Environmental Management, which involves information exchange in the chain, cooperation with suppliers and customers. Also growing normative and culturally-cognitive pressures from supply chain partners and increasingly from long-term public–private environmental covenants significantly influenced supply chain performance. Therefore, there is a very strong positive significant relationship between green customer demand and supply chain reliability in food and beverage manufacturing companies in South-South, Nigeria.

Conclusion and Recommendation

The study concludes that green customer demand positively enhances supply chain performance through it performance indicators; supply chain effectiveness, supply chain efficiency and supply chain reliability. This suggests that when these manufacturing companies implement environmentally friendly practices by meeting up customers demand it leads to improvements in their overall supply chain performance and recommends Food and beverage manufacturing companies should adopt sustainable practices. This shift requires a focus on green supply chain management (GSCM) to optimize environmental performance and meet customer expectations for eco-friendly products. Thereby, reduce cost, and untimely improve customers' satisfaction.

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