
Green Packaging and Organizational Performance of Food Manufacturing Firms in Rivers State

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Abstract

This study investigated the relationship between green packaging and performance of food manufacturing firms in Port Harcourt. The design of the study was cross-sectional survey. Questionnaires were distributed to the respondents of the firms under study; eight nine (89) copies were usable for analysis. The study adopted krejcie and Morgan formula (1970) to determine the total sample size from the accessible population. Questionnaire was the major instrument for data collection. Cronbach's alpha test was used to measure the reliability of the questionnaire with the assistance of Statistical Package for Social Sciences (SPSS). Responses obtain was recorded on a five-point Likert's scale, varying from "Strongly Agree, Agree, Don't know, Disagree, Strongly Disagree. The Pearson Moment Product correlation coefficient with the aid of statistical package for social science was used to test postulated hypotheses. The study finds that, there is a relationship between green packaging and sales growth of food manufacturing firms in Port Harcourt. It was then recommended that, Food manufacturing firms should prioritize green packaging and over any other form of strategic haven shown to have a positive and significant effect on sales growth.

Keywords: Green Packaging.Sales Growth.Organizational Performance.

Introduction

Environmental issues with a view to economics have been an existing concern due to its increasing importance. Despite the fact that this concern had been mentioned, it was of recent that ecological concerns stood a good chance in gaining more attraction to become an official topic (E.S.E.E, 2019). This cognitive progress led to a remarkable increase in green awareness not only from government, customers but also from companies itself. Companies, as playing a key role in manufacturing, supplying, and transporting products in order to satisfy the supply-demand mechanism, were pushed to think more about greenness and take ecological impacts into sober consideration. This triggered a demand on quick adoption and complete operational transformation in all aspects, ranging from financial to marketing strategies. More importantly, logistics is not the exception. As a fast-growing sector of activities that holds accountable for raw material procurement and final product delivery, logistics and its relation to supply chain has been perceived as the most potential factor accounting for various environment-

related issues, such as natural depletion, emission pollution, and ecological degradation. Thus, governments had put an excessive pressure on companies to improve greenness within their logistics activities through laws and legislations to yield optimal energy efficiency with minimum effects on environment. Green logistics term was created as a result of these ecological recognition progress and was expected to assist companies tackle these dilemmas. (Vidová, Babčanová, Witkowski & Saniuk, 2012)

According Logistiikan Maailma (2020) green logistics concerns about taking sustainable development into sober consideration, which refers to the practice of transforming transport chain to burden environment as minimal as possible. The mentioned transformation is expected to be seen through redesigning sourcing or distribution systems, managing efficient transportation movements, and eliminating unnecessary packaging. In greater details, green logistics covers different dimensions concerning to production planning, materials planning and physical distribution. Green logistics practices influence entire value chains, and it has become a requirement for firm performance. The negative impact of firm activities globally has given rise to the formulation of various approaches for achieving sustainable methods of development. According to Chan, He, Chan, and Wang (2012) the goal of sustainable development is to address growing concerns about environmental issues while simultaneously responding to socio-economic imperatives. Firms around the world are feeling pressure to implement green practices into their value-creation systems. This pressure emanates from growing environmental awareness on the part of consumers in many countries, as well as increasing prices for raw materials and energy, environmental legislation, and influence exerted by dominant actors in the value chain (Giovanni & Vinzi, 2012).

Transportation, stockpiling, and utilization of items have caused huge environmental issues. Organizations, both state owned and private are requesting measures to strike down this danger. Thus, there has been piling pressure from the public on corporations to decrease the effects that their Logistics activities have on nature. Moving merchandise negatively affects the nearby air quality, produces noise pollution, prompts mishaps, and, in entirety, contributes to adverse climate effects (Amemba, Nyaboke, Osoro & Mburu, 2013). According to Intergovernmental Panel on Climate Change (IPCC, 2014) the movement of freight accounted for roughly 43 per cent of all the energy used in transport and around 12 per cent of total global energy consumption. This corresponds to a share of approximately 10 per cent of energy-related CO₂ emissions worldwide. The inclusion of warehousing and materials handling is likely to add around 2–3 per cent to this total. The World Economic Forum and Accenture (2009) have estimated that logistical activity accounts for roughly 5.5 per cent of total global greenhouse gas (GHG) emissions (including all the other GHGs, such as methane and nitrous oxide, and not simply CO₂). They suggest that ‘logistics buildings’ emit 9–10 per cent of the total, with the rest coming from freight transport. Trucks and vans are responsible for two-thirds of these transport GHG emissions. Emissions from international transport are also rising steeply as trade volumes expand and globalization crisscrosses the planet with complex ‘value chains’ (McKinnon, 2014). It has been estimated by the UK Committee on Climate Change (2008) that in the case of

shipping ‘unconstrained growth could result in global CO2 emissions growing two to three times current levels by 2050.

One solution to this problem is organizations adopting the practices of green outbound logistics. Most nations have upheld the green enactment for organizations to put social duty regarding green item configuration, garbage removals and reverse logistics streams including utilized items and assembling initiated squanders. The emergence of green logistics is important for organizations to maximize gains by minimizing damage to the environment (Azevedo, Carvalho & Cruz Machado, 2011). However, it has not been proven empirically that green logistics is the solution to firm performance and most studies portraying the benefits of green logistics were conducted outside the context of Rivers State. Therefore, this study was conducted to examine the impact of green outbound logistics on firm performance using selected manufacturing firms in Rivers State as the study setting.

Research Objectives

The aim of this study is to examine the relationship between green packaging and performance of food manufacturing firms in Port Harcourt. Specifically, the study sought to:

- i. To determine the relationship between green packaging and sale growth.

Research Questions

Based on the abovementioned objectives, the study is set to answer the following questions:

- i. What is the relationship between green packaging and sale growth?

Literature Review

Theoretical Foundations

The Resource Base View (RBV) Theory: This study draw inspiration from the theory of RBV that explains that the identification and possession of internal strategic resources contributes to a firm’s ability to create and maintain a competitive advantage and improve performance (Barney 1991; Hart 1995; Crook et al. 2008). A resource is considered strategic if it meets certain criteria - valuable, non-substitutable, rare or specific, and inimitable in order to contribute to improving the performance of the firm (Barney 1991; Crook et al. 2008). Value refers to the extent to which the resources are aligned with the external environment to exploit opportunities and reduce threats. Substitutability is the extent to which competitors can create equivalent resources. Resource rareness refers to the perceived scarcity of the resource with factor markets. Inimitability is the extent to which competitors cannot obtain or replicate the resources, or can only do so at a significant cost disadvantage (Hoskisson et al. 1999). Firms incorporate

continuous learning, innovation in environmental technologies, stakeholder integration, and the use of best practices in reducing the environmental impact of their operations. Historically, the RBV paradigm has been leveraged to understand the performance implications of the use of internal resources to the firm (Hart 1995). Sharma and Vredenburg (1998) argue that proactive business strategies which includes aspects of green practices and an environmental approach to business operations can be considered a valuable resource. Thus, the combination of outbound logistics and green practices may lead to better firm performance (Bowen et al. 2001). Furthermore, firms that use green practices in their supply chains and in the operations of the firm may be in a position to improve firm performance (Zhu & Sarkis 2004; Vachon & Klassen 2008).

The preceding discussion suggests that RBV is a logical choice for research in this area due to its emphasis on explaining how firms use green resources to improve firm performance. Firms are at a critical point today where the interaction between business activities and the natural environment are no longer seen as externalities to the firm, but as being inextricably tied (Hart & Dowell 2010). RBV, in the context of environmental responsibility, suggests that firms recognize and apply strategic resources and capabilities to create unique and difficult to imitate practices that simultaneously reduce the impact of the firm's operations on the natural environment and create value for the firm (Hart & Dowell, 2010).

Green Packaging

Packaging has been considered an essential step for all products before they are able to enter the market. Packaging in logistics consists of three types, namely primary, secondary, and shipping packaging. Primary packaging is used to contain product itself while secondary packaging is to provide protection for primary packages, which is normally disposed when products are used. Shipping packaging indicates the outer packaging needed for transportation, storage, which is usually detached when products have been successfully delivered to customers, (Emballage Cartier, 2019). Packaging itself accounts for more than one third of plastics production and becomes essential in the majority of businesses. However, according to statistics provided by World Economic Forum and Ellen MacArthur Foundation (2018), less than 15% of used packaging is recycled, from which plastic waste problem has been worsened. Therefore, the environmental concerns of this issue need to be addressed urgently, in which businesses and logistics parties are expected to play a key role and opt for more eco-friendly options. Besides improving packaging quality for internal uses with rearranged pallet to reduce required handling vehicles and increase space utilization, it is important for companies to look at end-product delivery to consumers. Considering changing packaging material and taking consumer's knowledge of recycling materials at the end of product life cycle is considered necessary. To pursue green packaging, companies are more likely to transform packaging materials from conventional materials into reusable materials, such as cardboards, renewable plastics. Meanwhile, actual shape and dimensions of packaging can determine space utilization in warehouses and in transportation modes, which subsequently affect environmental impacts.

Also, the reliability and durability in packaging material is of great importance and needs to be taken into sober consideration if companies are striving for green packaging. The reason underlying this practice is that product returns or losses due to damages caused by packaging in delivery is the biggest source detrimentally affecting the environment itself

Firm Performance

According to Kerning and Jaeger (1990) firm performance refers to how well an organization is performing. Good performance is an indicator of success and development of all organizations. Today best practices evaluate firm's performance in terms of sale growth, market share, products innovations, customer loyalty and people. Performance helps ensure organizational goals are being achieved. According to Armstrong (1987) performance is the ability to achieve organizational goals more effectively and efficiently.

Performance is a major concern to all organizations. It's the level at which an organization is placed in a particular industry. If an organization is to meet its goals effectively and efficiently, accurate measuring of performance must be implemented. The various measures used are sales growth, profit, market share, competitive advantage and customer rating. Performance of an industry in an economy could best be measured in terms of time taken to finish and costs incurred in relation to the original planned project duration and financial budget (Ubeku, 1983). According to Sultan (1997) firm performance can be measured by many indicators for instance asset base, market share, quality, customer satisfaction and profitability. He however contends that satisfaction with using financial measures to measure firm performance has been expressed by some researchers based on the intensity and nature of criticism directed at the traditional accounting systems that are often harmful to the evaluation process.

Performance is also seen as how well one does a piece of work or activity and the ability to bring about desired results in the satisfactory manner. Good performance is an indicator of success and development. The perspective of firm's performance is considered as a function of organization ability to reach and maintain equilibrium with its environment.

Sales Growth: Sales growth is the pace at which the average sales volume of a company's products increases annually. Sales growth is a strong indicator of firm's performance; and business wellness by extension. It is an incremental change in the sales of a firm's product over a given time interval, often expressed as a percentage. The wellness of a business entity is evaluated by the rate at which its sales grow (Didia & Nwokah, 2015). Successful new products contribute to company's profits through sales growth. Sales growth is thus an essential index of financial performance of a firm (Patterson, 2007). It is an important indicator of business

wellness and sustainability, and is closely associated with the marketing function (Morgan & Rego, 2006; Ambler, 2003).

Sales growth indicates a relative measure of change in sales volume over recorded periods; and is affected by price and other complex factors like seasonal variations, income level, quality, changes in taste, changes in technology and company's values, environmental factors (Didia & Nwokah, 2015). Sales growth is a key parameter of business wellness that firms must monitor over succeeding accounting intervals in order to have a fair grasp of trends because it is an essential component of forecasting and is instrumental in decision-making (Ateke & Kalu, 2016). Sales growth provides executives and sales directors with an assessment of the firm's health.

Empirical Review

The study of Viola Noor and Kennedy (2021) on the adoption of green logistics in commercial state establishments is an emerging phenomenon throughout the world. The purpose of this paper was to evaluate the influence of green purchasing practices on performance of state corporations in Kenya. Ten commercial state corporations in Kenya including Kenya Literature Bureau, Kenya Airport Authority, East African Portland Cement Company, Jomo Kenyatta Foundation, Kenya Broadcasting Corporations, Kenya Ordinance Factories Bureau, Kenya Railways Corporation, Kenya Seed Company, Chemelil Sugar Company and finally Kenya Electricity Generating Company were selected for this study. The study adopted a descriptive design and used a sample of 175 respondents from ten state corporations. The respondents were selected through stratified sampling. The primary data collection method applied in this study constituted questionnaires both open-ended and closed. Results revealed that; considering corporations use of green raw materials, the suppliers use of green purchasing and the use of recycling of products or materials technologically had a positive impact on the performance. Results also revealed that considering commercial cooperation's use of responsive packaging also had an influence.

Another study Kazim and Gözde (2013) which aims to investigate the relationship between green logistics practices and firm performance in healthcare organizations. For this purpose, empirical data from 240 hospital managers is obtained from hospitals operating in Turkey. While obtaining the data, green logistics practices are categorized into three groups as (1) reverse logistics, (2) green distribution and marketing, (3) green purchasing and manufacturing practices. In addition, firm performance is measured with three indicators. These are operational, economic, and environmental performances. Analyses of empirical data indicate that two of green logistics practices positively support firm performance in all three performance indicators for hospitals in Turkey. These green logistics practices are (1) reverse logistics and (2) green purchasing and manufacturing.

Lameck and David (2016) study the effect of green logistics practices on performance of supply chains in multinational organizations. The study was carried on 10 multinational organizations in Kenya, specifically focusing on the following departments; procurement, human resources,

environment specialists, and administrators, where the study picked at least four senior officers from each. In developing countries like Kenya green logistic practices in paramount for tomorrow's energy ingesting. This study did pilot test to ascertain the reliability of the instruments. Objective: The study aimed at findings of remedial measures on performance of supply chain in multinational organizations in Kenya. This resulted to great significance of the study and a replication of the findings in the Kenyan context.

Thi Thuy Dung Tran (2021). Onduted a study on green outbound logistics in e-commerce. Semi-structured interview with case companies was used, allowing the author to gain deeper insights on internal logistics operations. Meanwhile, background history and other relevant data was collected via its sustainability reports as the secondary source. The results indicate that both case companies perceive opportunities outweighing challenges brought by e-commerce, especially in green transportation and packaging. The use of renewable fuels, sustainable transportation vehicles and packaging material transformation into reusable cardboard, post-consumer recycled plastic are enhanced. Meanwhile, both companies have seen challenges in green packaging (questioning reliability of sustainable packaging materials during delivery) and customer communication (higher possibility of customers' purchasing decisions being negatively changed due to extra costs charged and disclosure of information regarding eco-impacts in different delivery options.

Lili, Laksito, Salmah, Devita, Nurul, Wursan, Risma and Nur (2023) conducted a study on performance of green supply chain management. The purpose was to analyze the relationship between the performance of Reverse Logistics and Green Supply Chain Management, to analyze the relationship between Green Procurement Aspects and the performance of Green Supply Chain Management. This research method is quantitative, the analysis of research data uses the partial least square structural equation model (SEM-PLS) with a statistical data processing tool, namely SmartPLS 4.0 software. Research data was obtained by distributing online questionnaires through social media designed using a Likert scale of 7. Respondents in this study were 670 SMEs owners in Java Island, Indonesia. The stages of data analysis are validity test, reliability test and significance test or hypothesis test. The results of this study indicate that Reverse Logistics has a positive and significant effect on the performance of green supply chain management, green procurement aspects has a positive and significant effect on the performance of green supply chain management. The novelty of this study is the relationship model between Reverse Logistics variables, the performance of green supply chain management and green procurement in SMEs which was not found in previous studies.

However, none of these studies empirically examine the relationship between dimensions of the predictor variable and measures of criterion variable. Thus, the following hypotheses;

H₀₁ There is no relationship between green packaging and sales growth of food manufacturing firms in Port Harcourt.

Methodology

The study adopted a cross sectional survey design to acquire responses from general managers, heads, senior staff and assistants of functional departments of 8 food manufacturing firms, amounting to 210 respondents. Furthermore, Krejcie and Morgan formula (1970) was adopted to determine the total sample size from the accessible population. Questionnaire was the primary instrument for data collection. The singular firm sample size was scientifically ascertained and disseminated for each of the 8 firms separately using Bowley (1964). The nature of the data was quantitative. Questionnaires were distributed to the 8 firms' understudy, 89 copies were usable for analysis. The reliability of the study instrument was confirmed by the use of Cronbach alpha. The Pearson Moment Product Correlation Coefficient with the aid of Statistical Package for Social Science was used to test proposed hypotheses.

Table 1: Result of Reliability Test

Variables	No of items	Alpha value
Green Packaging	3	0.850
Sale Growth	3	0.925

Results and Discussion

Table 1: Correlation Result of Green Packaging and Sales Growth

Correlations

		Green Packaging	Sales Growth
Green Packaging	Pearson Correlation	1	.629**
	Sig. (2-tailed)		.000
	N	89	89
Sales Growth	Pearson Correlation	.629**	1

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Sig. (2-tailed)	.000	
N	89	89

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

Table 1 present correlation results determining the relationship between green packaging and sales growth using 89 respondents. The result show that reverse logistics with ($r = 0.629$) is strongly related to sales growth. Based on this empirical findings, the null hypothesis H_{01} as stated earlier that, there is no significant relationship between green packaging and sales growth of food manufacturing firms in Port Harcourt, is hereby rejected and the alternate hypothesis accepted. Thus, there is significant relationship between green packaging and sales growth of food manufacturing firms in Port Harcourt.

Table 3: Decision Summary

Hypothesis	Decision	Basis for decision	Remark
H_{01} : There is no relationship between green packaging and sales growth of food manufacturing firms in Port Harcourt.	The null hypothesis was rejected	Relationship was significant. ($r = 0.629$). The probability of correlation ($\rho = 0.00 < 0.05$)	Strong positive relationship

Discussion of Findings

The findings of the test of hypothesis 1, established that, there is a significant relationship between green packaging and sales growth. The results marked a positive as well as significant relationship between green logistics and sales growth. The correlation statistic ($r = .0.629$, $p=.000 < 0.001$) shows that green packaging can explain 39.56% of changes in sales growth. This is an indication of a positive relationship between the variables. In term of strength of the relationship, the result show that green logistics with ($r = 0.629$) is strongly related to sales growth.

These result tally with those of Lameck and David (2016) study the effect of green logistics practices on performance of supply chains in multinational organizations. The study was carried on 10 multinational organizations in Kenya, specifically focusing on the following departments; procurement, human resources, environment specialists, and administrators, where the study picked at least four senior officers from each. In developing countries like Kenya green logistic practices in paramount for tomorrow's energy ingesting. This study did pilot test to ascertain the reliability of the instruments. Objective: The study aimed at findings of remedial measures on performance of supply chain in multinational organizations in Kenya. This resulted to great significance of the study and a replication of the findings in the Kenyan context.

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Conclusions

The purpose of this study was to provide useful insight to the future prospects of green outbound logistics practices. The study concluded based on the findings green packaging have a positive relationship with sales growth of food manufacturing firms in Rivers State. This means using the right packaging size for a given product, and increased use of green packaging contribute to the improvement of performance of food supply chains by increasing their product returns over time.

From the foregoing, it is noteworthy that green outbound logistics practices significantly influence performance of food manufacturing firms, most notably through the adoption of green packaging. It is notable that for performance of food manufacturing to be effective, green logistics practices must be in place, or gradually be adopted as a framework of best-practices.

Recommendations

Based on the discussion and conclusion above, the following recommendations were hereby made:

1. Food manufacturing firms should prioritize green packaging and over any other form of strategic initiative shown to have a positive and significant effect on sale growth.
2. Management of food manufacturing firms should ensure that structures are established to encourage green packaging in order to make contribution towards firm performance.

Contribution to Knowledge

The findings of this research study have greatly added to the stock of knowledge in marketing discipline as it filled the gap of scanty empirical studies on green outbound logistics practices on performance of food manufacturing firms in Rivers State. Owing to the empirical statistical results obtained, this study seem to critically examine the relationship between the variables.

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