

GREEN MARKETING PRACTICES AND COMPETITIVE ADVANTAGE IN THE NIGERIAN TELECOMMUNICATIONS INDUSTRY

UNUKPO, Alex Oghenechuko PhD¹ and AGUBUIKE, Henry Uzor²

¹Department of Marketing and Entrepreneurship, Faculty of Management Sciences, University of Delta, Agbor, Delta State.

²Department of Business Administration, Faculty of Management Sciences, University of Delta, Agbo

Correspondence: alex.unukpo@unidel.edu.ng unukpoalexoghenechuko@gmail.com

Abstract

The broad objective of the study is to examine the effect of green marketing practices on competitive advantage of selected telecommunications firms in Delta State, Nigeria. Survey research design was adopted, and data was collected from a sample of 226 employees from four telecommunications firms in Asaba, Delta State through the use of a self-developed questionnaire as instrument for data collection. Findings show that study's proxies for green marketing strategies - biodegradable packaging, ecofriendly products, and corporate social responsibility are significantly related to competitive advantage of telecommunication firms in Delta State, Nigeria. The study recommends that telecommunication companies should apply green marketing strategies by educating the consumers about green products and services, and clearly explaining environmental benefits they tend to achieve.

Keywords: Green marketing, competitive advantage, eco-friendly products, Corporate Social Responsibility.

1. Introduction

Today, ecological issue has become a global challenge due to universal ecological degradation, pressure from global community, the exertions of governments, the eco-friendly movement and the influence of public media. According to Etale and Otuya (2018), environmental responsibility is seen as the art of safeguarding the physical environment of the individual, organisation or government for the utmost advantage of both the ecological environment and humans. This has motivated the development of green marketing which promotes an increasing market for green and mutually responsible products. Sah (2025) posits that the adventure into green marketing or environmental marketing is a definite indicator that the nations are gradually moving

to achieve a greener and greater environment where environmental consideration is included into all facets of marketing such as product improvement and advertisement.

There is increasing awareness among marketers and all types of consumers all over the globe on the need to protect the environment (Alabo & Anyasor (2021; Uwabor et al., 2025;). As today's consumers become more conscious of the natural environment most businesses are beginning to modify their thoughts, behaviour and focus towards addressing the concerns of consumers on environmental aspects in their marketing process for their survival in the turbulent market. As a result, using targeted marketing techniques seems important for effective marketing of green products.

Competitive advantage refers to the unique strengths, capabilities, or attributes that enable an organization to outperform its competitors and achieve superior performance in the market (Olaleye, et al., 2025). It is the ability of a firm to outperform its rivals by offering better products or services at lower prices, or by offering products or services that are not available from rivals. Competitive advantage provides a business with a unique and sustainable edge over its rivals, fostering long-term success and profitability (Fatonah & Haryanto (2022).

Over the last years, green marketing has occurred to be an important business strategy for firm competitive advantage due to rising issues connected to depletion of the ozone layer, acid rains, and degradation of the land and many more pressing environmental issues (Fatonah & Haryanto, 2022).

The study on green marketing practices and competitive advantage in the Nigerian telecommunications industry holds significant importance for various stakeholders. The telecommunications industry is a major contributor to Nigeria's economic growth, and the adoption of green marketing practices can help reduce the industry's carbon footprint, contributing to a cleaner environment. Moreover, companies that adopt eco-friendly practices can differentiate themselves from competitors, attract environmentally conscious customers, and gain a competitive advantage. The study highlights the growing demand for eco-friendly products and services in Nigeria, and telecom companies can tap into this market by adopting green marketing practices.

The study's findings have implications for regulatory compliance, industry benchmarking, and policy development. The study provides insights into the current state of green marketing practices in the Nigerian telecommunications industry, serving as a benchmark for companies to evaluate their own practices and identify areas for improvement. The study's findings can inform policy makers and regulatory bodies in Nigeria on the effectiveness of green marketing practices in promoting environmental sustainability, providing insights for developing policies that support the adoption of eco-friendly practices in the telecommunications industry.

The remainder of the paper is organised as follows: Section two focuses on the literature review and hypotheses development. Section three addresses the methodology with emphasis on model specification. Section four presents the estimation result and discussion of findings. Section five concludes.

Literature Review and Hypothesis Development Concept of Competitive Advantage

Competitive advantage is seen as any innovation, product, service, patent or anything else that differentiates the firm in a positive way from other firms. Porter (1995) noted that competitive advantage originates from a firm's ability to accomplish the required responsibilities at a collectively lower cost than competitors or perform some tasks in an exceptional way that creates buyer value and hence permits the firm to command a premium price. A significant feature of competitive advantage is the way activities fit

and strengthen one another. Since strategy involves the entire system of activities done by a firm, and not a collection of parts, one activity cost is lessened because of the way other activities are completed. Similarly, one activity's value to customers can be improved by a firm's other activities. A competitive advantage is a unique benefit or attribute that enables a company to outperform its competitors and achieve its goals. A sustainable competitive advantage is about how a firm builds long lasting strategies to sustain its competitiveness in the marketplace (Ogbor & Olannye, 2011),

Concepts of Green Marketing

Green marketing is the business activities that consider customers health with regards to preserving and conserving the physical environment. According to American Marketing Association (AMA, 2012), green marketing is the marketing of products that are seen to be environmentally safe. It involves a broad range of activities, consisting of modifications of the production process, packaging changes, product modification, as well as changing advertising (Oseremen, 2019). It ensures that the interest of the company and all its customers are protected, as voluntary exchange will not take place unless both the customer and marketer mutually benefit.

Green marketing practices refers to the activities concerned with promotion of environmentally safe products. The concept of green marketing incorporates various environmental activities used by firms to market their goods and services in a manner that will eliminate environmental damages (Rex & Baumann, 2007). These activities are

also meant to influence the internal practices of a firm (Taghian et al., 2015).

Biodegradable Packaging

Biodegradable packaging is generally defined as any form of packaging that will naturally disintegrate and decompose. According to De Jong et al. (2022), biodegradable packaging refers to materials used for packaging that can break down naturally in the environment, typically by microbial action, into harmless components such as water, carbon dioxide, and biomass. These materials are designed to reduce environmental impact and mitigate plastic pollution by offering a more sustainable alternative to traditional plastics. One of the most important green tactics for attaining environmental sustainability is biodegradable packaging. This approach to green packaging design is the most recent. Biodegradable packaging was seen by many consumer goods manufacturers as the best way to reduce the massive amount of waste that traditional packaging causes. Polylactic acid, which is produced from plants, is used to make biodegradable packaging (PLA).

According to Szaky (2008), biodegradable packaging is a collection of polymers made from renewable raw materials such as cellulose, soy protein, starch (such as corn, potato, tapioca, etc.), and lactic acid. These materials are not harmful during production and, when disposed of appropriately, decompose back into carbon dioxide, water, and biomass. Demand for this biodegradable packaging is rising. According to Davis (2006), the biodegradable packaging market is expanding at a 20% yearly pace. Szaky (2008) noted that because

biodegradable packaging can lower greenhouse gas emissions and promote environmental sustainability, businesses are embracing it. This viewpoint was reinforced by Pullen (2014), who said that because biodegradable packaging lowers waste and greenhouse gas emissions, it can achieve environmental sustainability. The justification for the biodegradable packaging is an eco-friendly alternative to traditional packaging materials, which can contribute to plastic waste and pollution. By adopting biodegradable packaging, telecom companies in Nigeria can reduce their environmental footprint and promote sustainability.

Environmental Friendly Product

Eco-friendly products are items that promote green living and cause minimal harm to the environment. These products are made from organic and natural ingredients, and their production, use, and disposal do not harm the environment. Here are some examples of eco-friendly products (Chukwukadiba & Nnamani, 2023). Eco-friendly products made using natural materials and ingredients are better than those manufactured using plastics and synthetic materials, and/or chemicals and dangerous substances. Sachdev (2011) asserted that beginning in the 1970s, a significant amount of research has been conducted on consumer behaviour for environmentally friendly products. Consumers, businesses are significant users of natural resources – water, energy, fuel, agricultural resources, forest and marine resources.

Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) refers to a company's voluntary efforts to

improve social, environmental, and economic impacts. CSR involves integrating social and environmental concerns into business operations and decision-making processes. In today's dynamic and increasingly conscious marketplace, businesses are recognizing the pivotal role they play in shaping societal well-being and environmental sustainability. Corporate Social Responsibility (CSR) has emerged as a critical component of modern business strategy, transcending traditional philanthropy to encompass a holistic approach that integrates social and environmental concerns into every facet of operations (Banerjee et al., 2020)

Corporations around the globe are besieged with a new role, which is to meet the needs of the present generation without compromising the ability of the next generations to meet their own needs. Firms are being called upon to take responsibility for the ways their business activities affect societies and natural environment. They are also being asked to adopt sustainability ideology to the ways in which they carry out their business. Sustainability refers to an organization's activities, specifically considered as voluntary that exhibits the inclusion of social and environmental concerns in business activities and in interactions with stakeholders (Van Marrewijk & Verre, 2003). Firms believe they have a moral obligation to be more socially responsible. Accordingly, this translates into companies that claims that they must achieve environmental aims as well as profit related objectives. This results in environmental challenges being integrated into the company's corporate culture. Companies in this situation can take two methods (a) they can use the fact that they are environmentally

responsible as a marketing tool, or (b) they can become responsible without promoting this fact.

Empirical Review

Asikhia et al. (2019) examined the effect of sustainable marketing elements on competitive advantage of selected deposit money banks in Ogun state, Nigeria. The study adopted survey research design and used primary data collected using a validated structured questionnaire. Findings of the study established that sustainable marketing had significant effect on competitive advantage of the selected deposit money banks in Ogun state, Nigeria. In a related study, Oseremen (2019) examines the relationship between green marketing and competitive advantage of table water production in Nigeria. The study's findings reveal that eco-labelling had no significant relationship with competitive advantage while environmental advertising was found to be significant and positively related to competitive advantage in the table water industry in Nigeria.

Gelderman et al. (2021) examined green marketing as an environmental exercise based on its effects on green consumer satisfaction and loyalty. The study was based on a quantitative approach to research. A questionnaire was used to gather the data, which was then analyzed using correlation analysis and structural equation modelling. According to the survey, the most important factors influencing green customer satisfaction and loyalty were green product quality, green pricing, and corporate image. Also, Alabo and Anyasor (2021) investigated the relationship between green marketing and brewery sustainability in Nigeria. A descriptive survey approach was adopted and applied in the

study, as well as convenience and purposive sampling technique were utilized to choose 324 participants for the sample. The study found a substantial and positive relationship between the sustainability of the breweries in South-East Nigeria and every facet of green marketing approach in organizational operations.

Chukwukadiba and Nnamani (2023) study was carried out to determine the effect of green innovation on competitive advantage of manufacturing firms in Enugu State, Nigeria. A structured questionnaire and oral interview guide were the research instruments used for this study. The study revealed that green product innovation had a positive significant effect on the market share of a firm. The study concluded that green product innovation had a higher impact on organizational performance compared to green process innovation as it is easier to develop new green product than to alter the manufacturing process itself.

Abiodun et al. (2024) investigated the effect of green marketing strategies on consumer purchasing decision in the fast moving-consumer-goods (FMCG) industry in Nigeria based on insights gathered from consumers in selected areas of Lagos State. The study adopted a quantitative research approach based on survey research design to gather primary data from a sample of 400 respondents selected via judgmental and convenience sampling technique. The data was collected through a structured questionnaire and was analysed using descriptive statistics. The results of data analysis indicated that consumers do not experience cognitive

dissonance/dissatisfaction with green FMCG products of their preferred organization. Also, when evaluating FMCG products for purchase purposes green pricing significantly influences consumers purchase decision. In addition, consumers do not experience cognitive dissonance/dissatisfaction with green FMCG promotion of their preferred organization. Finally, consumers consider purchasing environmentally friendly products because their distribution channels allow for returning empty containers for recycling and reuse. The study concluded that green marketing has a significant positive effect of on consumer purchasing decision in the FMCG industry in Nigeria.

Eromafuru et al. (2025) study examined the effect of green management practices on performance of SMEs in the hospitality industry in Delta State, Nigeria. A cross-sectional research design was adopted. However, the study targeted 30 SMEs hospitality firms from the three senatorial districts in Delta State. The study concluded that green management practices (green procurement, green marketing and green human resource management) positively influence the performance of SMEs in the hospitality industry.

Adelekan et al. (2025) study adopted a survey research design. The target population of this study is comprised of 5,107 employees from the selected FMCG companies. A sample size of 475 was determined using advisor's sample size determination table. The findings revealed that sustainable business practices had positive and significant effect on competitive advantage of selected FMCGs in Lagos State, Nigeria

Another study by Sah (2025) examines major influencing factors that can increase customer satisfaction. Data were gathered by convenience sampling from consumers of organic products. A structured questionnaire was prepared to collect data from respondents through emails and direct structured interviews with people who were directly met at the organic shop. The result showed that green price and green place was strongly correlated to each other and green product and green price moderately correlated. At last, it was found that green products and people were the most influential factors compared to other green marketing mix factors for customer satisfaction followed by place, physical evidence, and process. However, green prices and processes do not significantly influence customer.

Finally, Uwabor et al. (2025) study investigates the relationship between greenwashing and Financial Manifests of Food and Beverages Manufacturing Firms in Rivers State Nigeria. The study adopted the quasi-experimental research design which employed the cross-sectional survey design. Based on the research questions, a questionnaire was designed and one hundred (100) copies were distributed to the customers of the food and beverages manufacturing firms who constituted the population of the study, the researchers purposively administered ten (10) copies each to customers of the ten (10) food and beverages manufacturing firms selected for this study. The result revealed that; there is a weak positive relationship between the dimensions of greenwashing adopted in this study and profitability of the food and beverages manufacturing firms in Rivers State. The

study concluded that greenwashing is not healthy for the financial manifests of the food and beverages manufacturing firms in Rivers State.

Based on the conceptual and empirical review, the following hypotheses are postulated for the study:

HO1: Green marketing through biodegradable packaging has a significant positive relationship with competitive advantage in the Nigerian telecommunications industry.

HO2: Green marketing through environmentally friendly product has a significant positive relationship with competitive advantage in the Nigerian telecommunications industry.

HO3: Green marketing through corporate social responsibility has a significant positive relationship with competitive advantage in the Nigerian telecommunications industry.

Methodology

Design, Sampling and Data

The study adopted the survey research design since it utilized it deals mainly with opinions and is widely used in management, or social sciences research. The study's population consists of lower, middle and the senior management cadres of employees of the four major operators of the telecommunication industry. The study covered the four major operators of the telecommunication Industry (MTN, Airtel, Glo and 9mobile) within Asaba, the capital city of Delta State. The sample size that was used in this study constitutes 226 staff selected based on Taro Yamen's formula on a derived population of 524 staff of the sampled telecommunication firms. The null forms of the hypotheses were rejected where the

probability values exceed the benchmark of $P= 0.05$.

Theoretical Framework and Model Specification

This study is anchored on the Ecological modernization theory. The Ecological Modernization Theory (EMT) suggests that economic growth and environmental protection are not mutually exclusive, but rather, they can be reconciled through the modernization of industrial production and consumption patterns. In the context of the Nigerian Telecommunications Industry, EMT is relevant as it emphasizes the role of technological innovation, market mechanisms, and institutional reforms in reducing environmental impacts.

The telecom industry can adopt energy-efficient technologies, renewable energy sources, and sustainable packaging materials, such as biodegradable packaging, to reduce its environmental footprint. Market forces can drive environmental improvement, and telecom companies can capitalize on the growing demand for eco-friendly products and services by adopting green marketing practices and promoting sustainable consumption patterns.

The EMT framework suggests that the Nigerian telecommunications industry can modernize and grow while reducing its environmental impacts. By embracing green marketing practices, adopting sustainable technologies, and promoting eco-friendly consumption patterns, telecom companies can contribute to environmental sustainability while improving their bottom line. This can involve investing in renewable energy sources, implementing energy-efficient

technologies, promoting sustainable consumption patterns, and collaborating with regulatory bodies and stakeholders to develop and implement industry-wide sustainability standards and best practices. In Nigeria, the application of EMT in the telecom industry can lead to a win-win situation, where

economic growth and environmental sustainability are achieved simultaneously. By adopting environmentally friendly practices, telecom companies can enhance their brand reputation, attract environmentally conscious customers, and gain a competitive advantage.

Against the backdrop of the above theoretical framework, we express a functional relationship as:

$$CMA = f(BDP, EFP, CSR) \text{ ----- (i)}$$

Expressing equation (i) in econometric form and considering the nature of the regression data, equation (ii) is transformed as:

$$CMA_{it} = \beta_0 + \beta_1BDP_i + \beta_2EFP_i + \beta_3CSR_i + \mu_{it} \text{ ----- (ii)}$$

Where: CMA – Competitive advantage, BDP – Biodegradable packaging, EFP – Ecofriendly product. CSR – Corporate Social Responsibility, U – disturbance term.

5. Data Analysis

Out of the 226 sets of questionnaires administered, 215 were returned, 13 were not properly filled, and 202 were useable. Therefore, the analysis in this chapter is based on the usable sample size of 202. The biodata indicated on the gender composition that 99 of the respondents representing 49% of the sample were males while 103 being 51% were females. The age bracket of the respondents shows that 45 of the respondents being 22% were within the age bracket of 18-25 years; 48 of the respondents representing 24% falls within he age bracket of 26-30 years of age; 54 of the respondents being 27% of the sample were 31-40 years of age. 30 of the respondents representing 15% falls within the

age bracket of 41-50 years of age; and lastly 25 of the respondents being 12% of the sample were 51years and above.

On the educational background of the sample, it was revealed that the telecom operators has a high level of those with tertiary background with 103 respondents representing 51% being degree holders; 52 respondents being 26% of the sample size were diploma holders of sort; while 47 other respondents being 23% were post graduate degree holders. The managerial profile composition of the respondents indicated that 108 making up 54% were junior staff; 73 being 36% were senior staff; while 21 representing 10% being in the managerial cadre level.

Estimation Results and Discussion of Findings

The hypothesis testing results of the data estimation are reported in Table 1.

Table 1: Hypothesis Testing Results

Description	e	p	Decision
Ho ₁ : Biodegradable packaging and competitive advantage. ($BDP_i = \beta_0 + \beta_1 CMA_i$)	0.195	0.000	Accepted
Ho ₂ : Ecofriendly product and competitive advantage. ($EFP_i = \beta_0 + \beta_2 CMA_i$)	0.530	0.001	Accepted
Ho ₃ Corporate Social Responsibility and competitive advantage. ($CSR_i = \beta_0 + \beta_3 CMA_i$)	0.266	0.000	Accepted

e = co-efficient; p = probability at 0.05 significant level

Results from the hypothesis testing and discussed thus:

First, the relationship between biodegradable packaging and competitive advantage is found to be positive and significant at 5% significant level ($\beta_1 CMA_i = 0.195, p=0.000$). The implication is that higher biodegradable packaging increases the competitive advantage of the firm. The result meets our *a priori* expectation and is consistent with prior studies such as Chukwukadiba and Nnamani (2023), Eromafuru et al. (2025), and Abiodun et al. (2024) who reported a positive impact of biodegradable packaging on corporate performance and competitive advantage.

In addition, the coefficient of the variable ecofriendly product and competitive advantage is observed to be positive and significant ($\beta_2 CMA_i = 0.530, P=0.001$). This indicates that the level of competitive advantage is significantly influenced by ecofriendly product. The result meets our *a priori* expectation and is consistent with previous studies such as Gelderman et al.

(2021), Sah (2025), and Alabo and Anyasor (2021).

As regards the impact of corporate social responsibility on competitive advantage, the regression result shows a positive effect and statistically significant at 5% ($\beta_3 CMA_{it} = 0.266, p=0.000$). The result gives enough evidence to accept the hypothesis that corporate social responsibility has a positive effect on competitive advantage of telecommunication firms in Nigeria. This position meets our *a priori* expectation and agrees with studies such as Adelekan et al. (2025), Sah (2025), Uwabor et al. (2025), and De Jong et al. (2018) who in their separate studies found that CSR activities give firms competitive edge over their competitors.

6. Conclusion and Recommendations

The study examined the effect of green marketing practices on competitive advantage of telecommunication firms in Nigeria. Results from the analysis show that study’s proxies for green marketing strategies were significantly related to competitive advantage of telecommunication firms in Delta State,

Nigeria. In view of the findings of this study, the study recommends that

- (i) Companies should use green marketing as a competitive tool by educating the consumers, letting them know what they are doing in order to secure the environment and clearly explaining environmental benefits they tend to achieve.

- (ii) Also, the local community should be well-informed on this obligation which firms in their environment owe them, and how to follow up their demand.. The study also has implications for corporate management as this relates positively with competitive advantage.

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