Green Marketing in South-South Nigeria Consumer Sustainability: The Distribution and Physical Practice on Polythene Manufacturing Companies

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Abstract

The main aim of this study was to articulate the green distribution and physical evidence practices required by polythene manufacturing companies for consumers' sustainability in South-South Nigeria. The descriptive survey research design was adopted for the study. The study was conducted in the six States of South-South Nigeria. The population for the study was 323 comprising of 35 Marketing Lecturers, 60 Managers of polythene manufacturing companies, and 223 polythene consumers in South-South Nigeria. Due to the manageable size of the population, no sample was drawn. A structured questionnaire and focus group discussion (FGD) guide were the instruments used to collect data. The research instruments were validated by five experts. The reliability of the instruments was ascertained by the use of Cronbach Alpha reliability method. The total reliability yielded a co-efficient of 0.89, which indicated that the instruments were highly reliable. The questionnaire was administered directly to the respondents with the help of five research assistants. The data collected for this study were analyzed using mean, standard deviation and Analysis of Variance (ANOVA) statistics. The study found 18 green distribution and 17 green physical evidence practices that are highly required by polythene manufacturing companies for consumers' sustainability. Based on the findings of the study, it was concluded that the adoption of green distribution and physical evidence practices is highly required by polythene manufacturing companies to ensure consumers' sustainability. It was recommended, among others, that polythene manufacturing companies should maintain high ethical standard in their marketing practices in order to ensure sustainable consumption of green products.

Keywords: Green marketing; Consumer sustainability; Green distribution; Green physical evidence practices; Polythene manufacturing companies

1. Introduction

The development of the concept of modern marketing started in the early 20th century and has become an evolving concept. Marketing has evolved into several concepts such as service marketing, relationship marketing, international marketing, one-to-one marketing, realistic marketing, symbolic marketing, and others. These marketing concepts are expected to satisfy the consumers, maximize profit for the organisation, as well as be socially responsible. However, most activities of businesses in Nigeria cause land degradation and environmental

pollution, such as waste, air, noise, and water pollution (Abanyam, 2019). As a result, regulations have been passed to ensure that the public is not uncomfortable with irresponsible marketing practices (Abanyam et al., 2020). Hence, there is a renewed call for the integration of environment friendly practices into their marketing philosophy, which has once again, given rise to another concept known as green marketing.

Green marketing, according to Abanyam and Uwameiye (2019), is a holistic concept that refers to all of the activities involving the idea conception, manufacturing and consumption of products which are less of a detrimental effect on the environment. Other researchers claim that green marketing as all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment. These perspectives make green marketing different from other marketing concepts, which do not take into consideration the impact of their products on the environment.

Green marketing aims at integrating a wide spectrum of activities, including product distribution, product packaging, as well as evidential ambiance. It offers products which cause minimal harm on the environment, but rather protect it. The reasons for these kinds of practices are to reduce pollution, cost and increase the preservation of limited resources. The company's role in to achieving green distribution and physical evidence management includes providing product designs with features such as energy saving, local sourcing, and lot more.

Green Marketing has a lot of important benefits for companies to leverage on. It increases revenue, reduces cost, and builds brand value. A manufacturing company practicing green marketing is asserting a high impression of the brand value on the minds of the consumers of such products. As posited by Chabowski et al. (2011), companies who adopts green marketing get tax holidays, loans as well as other incentives from government as a result of their creative approaches in bearing uncertain risks. Besides, Wong and Rashad (2015) stated that green practices save the environment and health of the nation so they receive subsidies from government. Also, green marketing has the advantage of disposal and treatment of waste, which protect the environment. This is made possible since companies; during production process reduces the rate of discharges of greenhouse gases that aid the changes in global climate. This can cause greenhouse effect. Adopting green practices therefore, the companies could save the world in the way of saving the health of peoples and the environment (Rajeshkumar, 2012). Leveraging on this, therefore, green marketing, which is concerned about waste recycling, has created the avenue for companies to mutually align their products so as to avoid environmental waste. Manufacturing companies in Nigeria play an important role in the growth and development of the economy. They are involved in the fabrication, processing, or transformation of materials into finished or intermediate goods. According to Polonsky (2011), manufacturing companies are businesses that use components or raw materials to make finished goods. These finished goods can be sold directly to consumers or to other manufacturing businesses that use them for making other different products. One of the significant groups of manufacturing companies in South-South Nigeria is the polythene manufacturing companies. Although these companies create employment and generate revenue to the government, they have been criticized for poor handling of environmental related issues, resulting from poor management of waste materials such as those generated from plastics/polythene products. This has become a major worry for polythene companies that intend to flourish in the façade of rigid marketing competitions.

Polythene is a type of plastic materials that are generally organic and natural polymers involving higher molecular mass, most frequently produced from petrochemicals. Plastic can be considered as a broad category, in which polythene is a subtype of the main category. Many other polymers such as Bakelite and melamine are types of plastic. Polythene materials, according to Ukpong and Peter (2011), are those materials made from a chemical compound known as polyethylene (C-H) n and is manufactured from the polymerization of ethylene (C-H). Basically, polyethylene is an odorless and translucent solid, which is commercially available in pellet form but convertible to derivative products such as polythene bags, wrapping sheets, and lots more. Polyethylene materials are products of the polymers industry and possess certain qualities and properties which make them readily usable. Ukpong and Peter (2011) observed that the high physical strength and other properties of polythene make them reproducible and predictable as well. They also retain their physical and chemical properties over a wide range of environmental conditions such as heat, cold and chemicals. They can resist mechanical stress for a very long period of time resulting in environmental pollution in the South-South zone in particular and Nigeria in general.

South-South, which is one of the geopolitical zones in Nigeria, consists of Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and River States is surrounded with water and other natural resources that provide the economic mainstream of the country. This zone is faced with environmental challenges caused by oil exploration, waste including those generated by polythene materials and more. Environmental pollution created by polythene includes soil, water and air contamination as well as blockage of drains and sewage lines in and around cities (Aziegbe, 2017). Polythene which is nonbio-degradable, remains intact for several years without decomposing. Liu (2010) stated that polythene can resist mechanical stress for 30-40 years. Its presence in the soil is counterproductive. The persistent open burning of polythene dumps in South-South Nigeria is a common practice. Burned polythene products emit harmful toxins which can threaten air quality. Some of the toxic substances released include pops such as hazardous dioxins (United Nations, 2002).

Furthermore, South-South Nigeria has been polluted by indecomposable polythene waste in form of gases, liquid (sludge) and solid, which affect both the surface and underground water. In addition, polythene waste destabilizes the characteristics of water and affects its temperature, taste, odor, color, turbidity, amount of suspended solids, and electrical conductivity of water. It has been observed that fish and other marine species in the water ways mistake polythene material as food items, swallow them and die. This scenario has become of interest to stakeholders in this part of Nigeria, especially for the purpose of keeping the environment friendly, healthy and clean for use.

The researchers observed that one main cradles of ecological deprivation in South-South Nigeria originates from polythene manufacturing companies. While consumers' insolence in poorly disposing polythene wastes, encourages degradation of the environment. The damage done to the environment by polythene waste can be reduced through the practice of waste minimization such as maintaining suitable means of waste disposal, recovery, conversion, control and reuse. These practices can be achieved if the companies have an articulated green pricing and promotion into their overall green marketing philosophy framework to ensure consumers' sustainability.

Consumer sustainability, according to Abanyam (2019), refers to the simultaneous optimization of the social, environmental, and economic concerns of using and disposing polythene materials in ways that will not jeopardize both the needs of the present and later generations. Sustainable consumption, according to Phipps et al. (2012), has become an

essential global focus of interest. The authors further stated that one of the biggest factors of change for individual consumers is the call to save the planet by buying green goods from companies. Companies that integrate green sustainable practices into their marketing philosophy have a differential competitive advantage over companies who do not. Hence, the adoption of green marketing strategies such as green distribution and physical evidence practices would create new business opportunities, presents strong potential for making profit and satisfy stakeholders who have significant influence in providing financial, human and other resources for companies (Biloslavo and Trnavcevic, 2009; Jones et al., 2008).

Green distribution, as described by Martin and Schouten (2012), is the sustainable distribution of goods and services. Green distribution practices, according to Abanyam (2019), are practice related to conveying and storing of products which improve the firm's environmental performance. In this study, green distribution refers to those practices that reduce the amount of fossil fuels and greenhouse gases used in distributing polythene products to the consumers. Polythene production requires a lot of movement of both raw and finished materials in and out of the organization. In doing this, most polythene companies make use of vehicles that are powered by gasoline and diesel, that emit carbon dioxide, which causes global warming and acid rain. However, sustainable distribution practices such as bio-fuels, rail and others can be used to transport both human and material resources. Polythene manufacturing companies that adopt green distribution can decorate their vehicles with green captions to differentiate their green polythene products from other competitors. The branded and well packaged distributed polythene products provide physical evidence to consumers on the practices of green marketing by polythene manufacturing companies.

Green physical evidence, according to Kumar and Rohtak (2014), refers to the use of natural and sustainable materials for products and facilities decoration. Green physical evidence, as posited by Abanyam (2019), is an element of service marketing, which enables the consumer to evaluate a firm and its products. Green physical evidence includes aspects such as the company's building/facilities and staff appearance, personal hygiene and uniforms that add value and promote the image of an organization. In addition, promotion materials and branding strategies are all elements of physical evidence that provides tangible evidence offerings to customers. As it concerns manufacturing industry, green physical evidence is viewed in terms of ambience, green packaging and green branding (Asiegbu and Powei, 2012). The Chartered Institute of Marketing (2015) maintained that choosing an unfamiliar product or service is risky for the consumer, because they do not know how good the products will be until after purchase. Hence, polythene manufacturing companies can reduce this uncertainty by helping potential customers use sample of what they are buying. This can be done through well shot video testimonials and reviews on independent websites would add authenticity. Green physical evidence adoption has shown how beneficial it can be for companies to incorporate this line of thought into their business philosophy, as this seems to be an open gateway for gaining goodwill among consumers and stakeholders.

Marketing stakeholders refer to those actors that operate in the business domain, the environment, and society in general, with the goal of designing, implementing, and evaluating marketing initiatives so as to maximize benefits for all stakeholders. They include customers, employees, and shareholders. Marketing stakeholders in this study refer to those with marketing knowledge and skills in teaching, producing, and utilizing polythene materials in south-south Nigeria. They include marketing lecturers in the universities, managers of polythene manufacturing companies, and the consumers of such polythene products.

Marketing stakeholders are becoming more aware of the harmful effects of polythene products; Polythene has potentially harmful substance that promotes endocrine disruption (Barnes et al., 2009). Consumers are exposed to chemical such as phthalates through the nose, mouth, or skin. Some of the chemicals used in polythene production can cause cancer of the lungs and dermatitis upon contact with human body (Groff, 2010*).* Kumar and Ghodeswar (2015) observed that the ideologies of these stakeholders as regards green marketing adoption and consumption have raised concerns over environmental impact of polythene marketing. This improved consciousness and thoughtfulness of marketing stakeholders to the concerns in the environment, place some responsibilities on polythene manufacturing companies to adopt green practices. Hence, the demand for green strategies to be put in place by polythene manufacturing companies in order to decrease the negative effects associated with the indecomposable polythene waste products on the environment. From the researchers' interaction with polythene manufacturers in South-South Nigeria, they have indicated willingness to adopt green distribution and physical evidence practices in polythene manufacturing, however, their greatest challenge in going green is their inability to know where to start and how this can be achieved. In bridging this gap therefore, this study seeks to determine the green distribution and physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria**.**

1.1 Research questions

The following research questions guided the study:

- What are the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria?
- What are the green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria?

1.2 Hypotheses

The following null hypotheses formulated for the study was tested at 0.05 level of significance:

- There is no significant difference in the mean ratings of the responses of marketing lecturers, managers and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.
- There is no significant difference in the mean ratings of the responses of marketing lecturers, managers and consumers on the green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

2. Methodology

2.1 Design of the study

The descriptive survey research design was adopted for this study. Abanyam et al. (2020) stated that in descriptive survey research, views and facts are collected through questionnaire, interview and observation which are used to analyze data and answer research questions.

Survey design is considered suitable for this study because this study made use of a structured questionnaire and focus group discussion (FGD) to obtain data from the respondents on green marketing practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

2.2 Population and sample of the study

The population for the study is 323, comprising 35 Marketing Lecturers, 60 Managers of polythene manufacturing companies, and 228 polythene consumers in South-South Nigeria. The population of the Marketing Lecturers was obtained from the Personnel Department of the Universities of Calabar, Uyo, Port Harcourt and Benin. These universities were selected because they offer marketing programs, and as such have lecturers teaching marketing courses. The population of the Managers of polythene manufacturing companies was however obtained from the Manufacturing Association of Nigeria (MAN); while the population of the Polythene consumers was obtained from the registered members of Table Water Associations in the six states of South-South Nigeria. The choice of the lecturers was borne out of the fact that they are knowledgeable and skilled in teaching, and are advocate for the utilization of consumers' friendly marketing practices, including green marketing. Thus, their expertise in marketing practices was needed to achieve the objectives of this study. The managers of polythene manufacturing companies were also chosen for this study because they are the ones to utilize the green marketing practices to be articulated in this work, and as such are direct beneficiaries of this study. The Table Water Producers were chosen to represent the consumers of polythene products due to the fact that they have an organized association which enhanced data collection. They were also considered useful for this study in that they are the middle men that connect the polythene manufacturers and final consumers; hence they are better placed to provide the necessary information that validated the study.

2.3 Instrument

Focus group discussion (FGD) guide and a structured questionnaire were the instruments used for data collection. A structured questionnaire tagged Green Distribution and Physical Evidence Practices Required by Polythene Manufacturing Companies for Consumers Sustainability (GDPPRPMCCSQ) with 35 items, developed by the researchers was used for data collection. The questionnaire is divided into parts I and II. Part I elicited information on the personal characteristics of the respondents. Part II, on the other hand, is divided into two sections: A and B. Section A with 18 items, elicited information on the green distribution practices required by polythene manufacturing for consumers sustainability**;** and Section B, with 17 items, elicited information on the green physical evidence practices required by polythene manufacturing companies for consumers sustainability. Each of the Sections (A-B) was structured on a four-point scale of Very Highly Required (VHR), Highly Required (HR), Slightly Required (SR), and Not Required (NR) with values of 4, 3, 2, and 1 respectively.

Focus Group Discussion (FGD) guide was also used for data collection. The discussants were workers in polythene manufacturing companies and table water factories for the purpose of obtaining required data towards enriching the findings. Five members made up a group, and there were six groups, one for each of the six states in South-South Nigeria. The FGD, according to Abanyam and Onimawo (2020), is an interview conducted by a moderator

among a small group of respondents in an informal and natural way, where the respondents are free to express their views on various topics of interest.

2.4 Validity and reliability of the instrument

The research instruments were validated by seven experts in Environmental Studies, Delta Plastic and Business Education. This was done to ensure the clarity, appropriateness of the language, coverage and to correct missing information or any other observed errors. It was also done to determine the suitability of every item or question in the instruments to elicit the desired responses. The observations and inputs of the experts were captured to help the researcher make necessary corrections, adjustments and modifications, which improved the final copies of the instruments.

The internal consistency of the questionnaire items was determined through the use of Cronbach alpha reliability method. The questionnaire was administered on a sample size of 30 respondents, comprising 5 Marketing Lecturers, 10 Managers of polythene manufacturing companies, and 15 polythene consumers in Anambra State, which is outside the study area but have similar features with the studied area. The questionnaire was retrieved and analyzed using Statistical Package for Social Sciences (SPSS) version 20 to determine the reliability coefficients of each of the two sections and the total coefficient, following the Cronbach alpha reliability formula. The analysis yielded a reliability coefficient of 0.58, 0.83 and 0.62, for sections A and B respectively. The overall reliability for the instrument was 0.89 indicating that the questionnaire is highly reliable

2.5 Procedure

The questionnaire was administered directly to the respondents with the help of five research assistants. The research assistants were chosen based on their knowledge and proximity to the study area to facilitate the administration and return rate of the questionnaire. The research assistants were briefed by the researcher on how to administer the questionnaire to the respondents. The five research assistants covered Akwa Ibom, Bayelsa, Cross River, Delta, and Rivers States, while the researcher administered the questionnaire in Edo State. Three hundred and twenty three (323) copies of the questionnaire were administered to the respondents, but Three hundred and eighteen (318) copies of the questionnaire were retrieved indicating a 98.5% return rate. The researcher personally moderated the FGD sessions in order to obtain qualitative data, with the help of two research assistants. We used tape recorders to record information as the discussions progressed. At the end of each session of the FGD, the researchers crosschecked the written information obtained in order to guard against any form of misrepresentation of facts given by the respondents on the subject matter. Five persons made up a group, and there were six groups, one for each of the States.

2.6 Method of data analysis

The mean, standard deviation and Analysis of Variance (ANOVA) statistics were the tools used to analyze the data. In the decision rule, the real limit of number was used for interpreting the analyzed data for answering the research questions as follows: Very Highly Required (VHR): 3.50 – 4.0; Highly Required (HR): 2.50 – 3.49; Slightly Required (SR): 1.50 – 2.49; and Not Required (NR): 1.00 – 1.49. A cut off mark of 1.96 was used to take decision on the standard deviation. Base on Fisher's rule in Abanyam (2019), a standard deviation below or close to 1.96 shows that the respondents' opinions are close to the mean and to each other. While a standard deviation above 1.96 of any item indicated that the respondents' opinions were not close to the mean and to one another. The analysis of qualitative data obtained from FGD was reported and summarized as indicated by the respondents. The qualitative data helped to validate or invalidate the quantitative data collected**.**

3. Results and Discussion

The data collected were analyzed and presented as follows:
Research Question One:

Table 1: Mean ratings of respondents on green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria

S/No	Items Statement	$\bar{X}$	SD	Rmk
1	Develop a green transportation plan for effective delivery of green polythene products	3.52	0.75	VHR
2	Encourage alternative modes of green transportation like carpooling for delivering green polythene products	3.20	.72	HR
3	Analyze logistics to find the best mode of making green polythene products available to the consumers	3.21	.70	HR
4	Ensure good vehicular transportation of green polythene products with less carbon emission	3.24	.72	HR
5	Offer delivery service where green polythene products cannot be transported without a vehicle	3.34	.75	HR
6	Combine green polythene product deliveries with customer follow-up service	3.35	.67	HR
7	Use couriers for local polythene product delivery	3.31	.75	HR
8	Use green courier's shipping materials that include post-consumer waste recycled materials	3.38	.73	HR
9	Ship in used nylons materials until they are eventually recycled into green polythene products	3.39	.64	HR
10	Establish a sustainable plan that minimizes the need for shipping unwanted raw materials for green polythene production	3.31	.86	HR
11	Limit distance travels for raw materials and finish green polythene products	3.30	.69	HR
12	Have a green building (multi-level warehouse) for storing polythene products.	3.42	.60	HR

13	Use biofuels as fuel alternative in transporting green polythene products.	3.53	.54	VHR
14	Establish an in-transit packaging point for effective distribution of green polythene products	3.36	.61	HR
15	Establish green polythene suppliers' partnerships to share warehouses and fleets	3.40	.57	HR
16	Use hybrid vehicles to distribute green polythene products to consumers	3.46	.54	HR
17	Provide green storage facilities to store green polythene products and production materials	3.38	.55	HR
18	Use train to transport green polythene products to distance locations	3.32	.70	HR
	Grand mean	**3.34**	**.22**	**HR**

Key X= Mean, SD= Standard deviation, Rmks = Remarks, HR = Highly required, VHR = Very highly required

Table 1 presents the mean ratings of respondents on green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Items 1 and 13 recorded mean scores 3.52 and 0.54 respectively, indicating very highly required. In contrast, items 2 to 12, and 14 to 18 recorded mean ratings ranging from 3.20 to 3.46, indicating that the items are highly required. Furthermore, the standard deviations ranged from 0.54-0.86, which were below 1.96, thus indicating that the respondents were not far from the mean and from each other in their opinions, as such, all the 18 items, were valid and reliable. Hence, with a grand mean of 3.34 and standard deviation of 0.22, Table 1 indicated that green distribution practices are highly required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

The focus group discussion sessions on green distribution practices further revealed that in addition to the use of trains, hybrid vehicles, and trucks, it is important not to neglect the use of wheel barrows, tricycle, as these are low carbon emitters. Also, green storage facilities are required as a necessary condition for any manufacturing company to claim green marketing compliance. This view as discussed by polythene manufacturers provided more credibility to the quantitative data. This therefore helps to increase the reliability of the data collected to provide answer to research question five, that all the 18 items listed in Table 1 are green distribution practices that are required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

Hypothesis One

Table 2: Analysis of variance of the mean responses of marketing lecturers, managers and consumers on green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria

Source of square	Sum of square	Df	Mean-square	F-ratio	Pvalue (sig)	Remk
Between groups	.64	2	.32	6.83	.00	S
Within groups	14.70	315	.05			
Total	15.34	317				

Key: S= Significant

Table 2 presents summary of the responses of marketing lecturers, managers and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Table 13 shows an F-value of 6.83 with a P- value of 0.00, at 317 degree of freedom which is less than 0.05 level of significance, indicating that there is a significant difference among the mean responses of marketing lecturers, managers, and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Hence, the null hypothesis of no significant difference was not upheld. To determine the source of difference, Post-hoc analysis test was carried out using Bonferroni multiple comparisons method. This is presented in Figure 1.

Figure 1 presents the Post-hoc analysis test using Bonferroni multiple comparisons method. In comparing the mean ratings of marketing lecturers with polythene manufacturers and consumers, the post hoc analysis result indicated a probability values of 1.00, which is greater than 0.05 level of significance, for both the polythene managers and consumers implying that the opinion of marketing lecturers differ significantly from those of polythene managers and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Hence, the source of difference lies between marketing lecturers and polythene consumers/polythene managers.

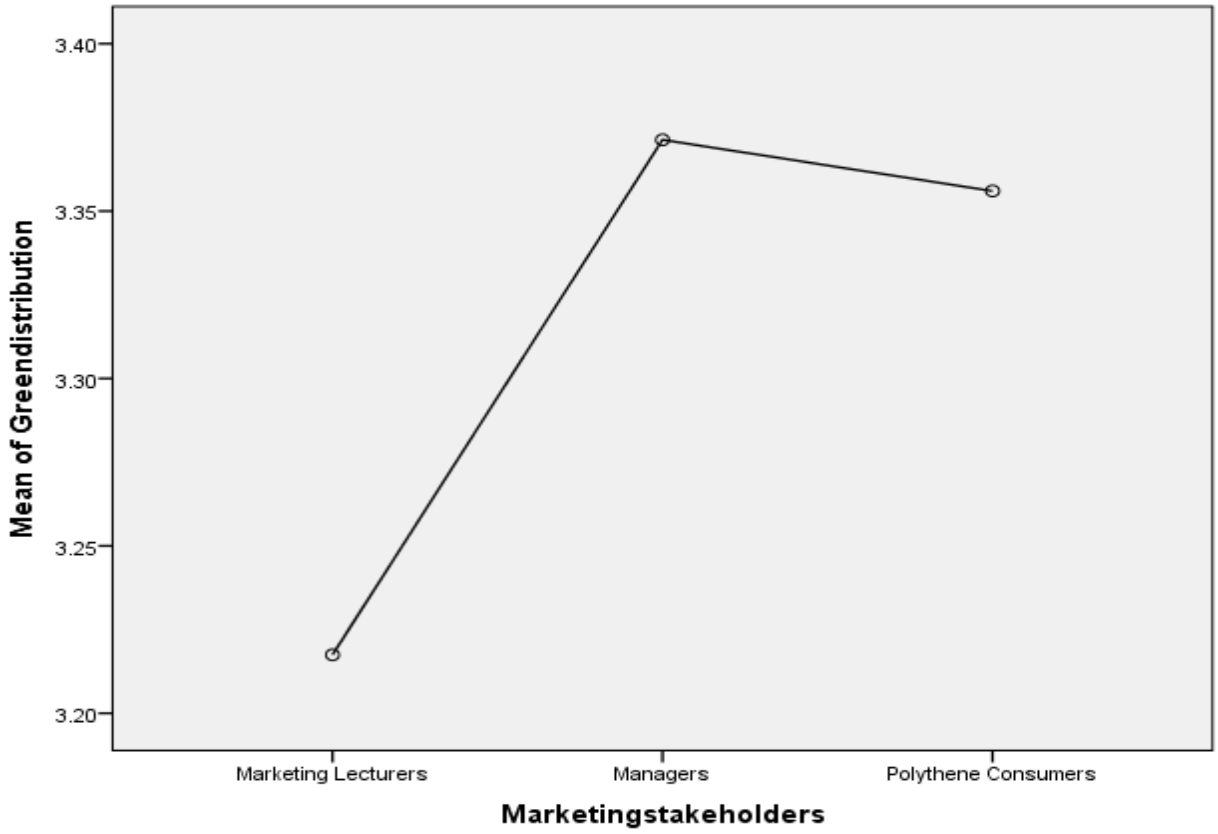

Figure 1: Post-hoc analysis test for comparing the mean ratings of marketing lecturers, managers, and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability

Research Question Two

Table 3: Mean ratings of respondents on green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. N = 318

S/No	Items Statement	$\bar{X}$	SD	Rmk
1	Adopt customer friendly staff dress code to bring out the green nature of the polythene manufacturing business	3.19	.75	HR
2	Maintain a positive relationship with green polythene customers	3.19	.76	HR
3	Manufacture green polythene that are environmental friendly and attractive to the public	3.34	.76	HR
4	Use attractive symbols to brand green polythene that have environmental friendly features	3.24	.80	HR
5	Use a green background logo for polythene products in order to appear green and more environmental-friendly	3.30	.86	HR
6	Differentiate green polythene products from those of direct competitors to create a sustainable brand	3.39	.77	HR
7	Use green polythene to build positive public image of the brand	3.55	.62	VHR
8	Use eco-branding practice to educate consumers on the necessity to use green polythene	3.50	.70	VHR
9	Produce polythene products that meets specified environmental performance standard	3.51	.76	VHR
10	Maintain uniqueness of green polythene over other polythene products in the industry	3.31	.87	HR
11	Maintain adequate lighting system in the green polythene manufacturing company	3.51	.68	VHR
12	Take into consideration the literacy level of the target market when imprinting on the green polythene product	3.38	.78	HR
13	Carefully explained dangerous chemicals during packaging of green polythene products	3.47	.71	HR
14	Ensure the production environment is kept clean all the time	3.30	.87	HR
15	Make available a comfortable atmosphere for customers to relax while waiting to be attended to	3.42	.69	HR
16	Use navigation signs that are easily understood to help green polythene customers find their way around the factory	3.29	.85	HR
17	Listen to consumers opinion to ensure quality assurance of green polythene product is maintained	3.15	.89	HR
	Grand mean	**3.35**	**.26**	**HR**

Key X= *Mean, SD= Standard deviation, Rmks = Remarks, HR = Highly required, VHR = Very highly required*

Table 3 presents the mean ratings of respondents on green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Items 1-6, 10, and 12-17 recorded mean scores ranging from 3.15 to 3.47 indicating highly required. On the other hand, items 7-9 and 11 recorded mean ratings of 3.50 to 3.55, indicating that the items are very highly required. Moreover, the standard deviations ranged

from 0.62-0.89, which were below 1.96, thus indicating that the respondents were not far from the mean or from each other in their opinions. The grand mean of 3.35 and standard deviation of 0.26 in Table 6, indicated that all the green physical evidence practice items are highly required by polythenesc manufacturing companies for consumer sustainability in South-South Nigeria.

The focus group discussion sessions on green physical evidence practices revealed among other practices that clean production environment, product differentiation, branding, packaging, and decoration of company's facilities are important green physical evidence practices required in green polythene marketing. This view, as discussed by polythene manufacturers, provided more credibility to the quantitative data. This therefore helps to increase the validity of the data collected to provide answer to research question six, that all the 17 items listed in Table 3 are green physical evidence practices that are required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

Hypothesis Two

T**able 4:** Analysis of variance of the mean responses of marketing lecturers, managers and consumers on green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria

Source of square	Sum of square	Df	Mean-square	F-ratio	Pvalue (sig)	Remk
Between groups	.09	2	.05	.71	.49	
Within groups	20.71	315	.066			NS
Total	20.80	317				

Key: NS= Not significant

Table 4 presents the responses of marketing lecturers, managers and consumers on the green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Table 4 shows an F-value of 0.71 with a P-value of 0.49, at 317 degree of freedom which is higher than 0.05 level of significance. This indicating that there is no significant difference in the mean responses of marketing lecturers, managers, and consumers on the green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Hence, the null hypothesis of no significant difference was upheld.

3.1 Green distribution practices

The study found 18 green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. Some of the green distribution practices are: to develop a green transportation plan for effective delivery of green polythene products, use bio-fuels as fuel alternative in transporting green polythene products; encourage alternative modes of green transportation like carpooling for delivering green polythene products; analyze logistics to find the best mode of making green polythene products available to the consumers; and ensure good vehicular transportation of green polythene products with less carbon emission. The findings supported the assertion of Abanyam (2019) who enumerated the following activities as best green distribution practices necessary for enterprises adopting green business to succeed in Nigeria: reduce long distance

trips for conveying raw materials and finished goods to their destinations; use green or multi-level warehouse to store products; partner with other suppliers to share warehouses and fleets; and ensuring good public transportation and non-vehicular access to stores or where product cannot be transported without a vehicle, delivery service is offered; these green business best practices of product distribution promotes small enterprises green business sustainability in Nigeria. Many small enterprises are itemizing and prioritizing the best distribution strategies and communicating these throughout the organization.

Similarly, the findings are in agreement with Cheruiyot et al. (2014) who observed that green distribution practices span from reducing the amount of fossil fuels and greenhouse gases used in manufacture and distribution to increased emphasis on the environment during distribution. Similarly, the findings of this study affirmed the positions of Dahlstrom (2011), and Zhu and Sarkis (2014) who stated that green distribution programs involve actions related to monitoring and improving environmental performance in the firm's demand chain. Tactical efforts include working with channel partners to develop product reuse or disposal arrangements and ensuring customers are able to return recyclable materials. Strategically, firms may create policies requiring suppliers and distributors to adopt more environmentally responsible standards in fulfilling their respective marketing roles. Alternatively, firms may form eco-alliances with channel partners to improve the environmental impact of their joint activities, such as reconfiguring logistics arrangements to make them environmentally efficient.

Furthermore, significant difference was found among the mean responses of marketing lecturers, managers, and consumers on the green distribution practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. The source of difference was found to be between polythene consumers and polythene managers. This difference in opinion could be as a result of the technical or on-the- experience by the managers in distribution of products to the final consumers. However, their opinions in agreement that the 18 items are highly required by green polythene companies in order to ensure the achievements of green product distribution in Nigeria.

3.2 Green physical evidence practices

The study found adopting customer friendly staff dress code to bring out the green nature of the polythene manufacturing business; maintaining a positive relationship with green polythene customers; manufacturing green polythene that are environmental friendly and attractive to the public; use attractive symbols to brand green polythene that have environmental friendly features; and using a green background logo for polythene products in order to appear green and more environmental-friendly are green physical evidence practices that are highly required by polythene manufacturing companies for consumer sustainability in South-South Nigeria. These findings corroborate the claims by Pride and Ferrell (2013) that green marketing aligns with the actions of the firm at branding, designing, and distributing products that are friendly to humans as well as the environment. Customers do not have much knowledge regarding brands that offer environmental friendly products, although they want to consume them

Similarly, the findings revealed that differentiating green polythene products from those of direct competitors to create a sustainable brand; maintaining uniqueness of green polythene over other polythene products in the industry; taking into consideration the literacy

level of the target market when imprinting on the green polythene product; carefully explained dangerous chemicals during packaging of green polythene products; and ensure the production environment is kept clean all the time; make available a comfortable atmosphere for customers. Also, there was no difference found in the mean ratings of marketing lecturers, managers, and consumers on the green physical evidence practices required by polythene manufacturing companies for consumer sustainability in South-South Nigeria.

4. Conclusion and Recommendations

The study explores the green marketing practices required by polythene manufacturing companies to ameliorate the degradation of the environment in South-South Nigeria. The environmental degradation is caused by the inability of the polythene manufacturing companies and consumers to manage polythene waste. However, many green marketing practices required by polythene manufacturing companies for consumers' sustainability were identified by this study. Many of these practices are green distribution and physical evidence practices. The adoption of these green practices in the marketing and production of green polythene products by polythene manufacturing companies will greatly improve the environment as well as sustain consumers and their use of the products.

In line with the findings of the study, it was recommended as follows:

- Polythene manufacturing companies should maintain high ethical standard in their marketing practices in order to ensure sustainable consumption of green products.
- Polythene manufacturing companies should adopt green distribution practices to reduce the amount of fossil fuels and greenhouse gases used in distributing polythene products to the consumers. This can be achieve through the use of bio-fuels, rail, bicycles and air craft to transport both staff and material resources needed in polythene production.
- Polythene manufacturing companies should adopt green physical evidence practice in polythene production so as to help reduce the amount of uncertainties faced by consumers of green products. This can be achieve by helping potential customers use sample of the products they are purchasing as well as using a well-shot video testimonials and reviews on independent websites to add authenticity. This practice will encourage polythene manufacturing companies to develop unique business practices to gain competitive advantage in the market.

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