

Green Marketing Involvement and Firm, Sustainability: An Empirical Investigation of Nigerian Mainstream Oil and Gas Sector

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Abstract: This study focused on green marketing involvement on firm's sustainability of the Nigerian mainstream oil and gas sector. The survey research method was adopted for the study on a population comprised of eleven (11) mainstream oil and gas companies in Nigeria, quoted in the Nigerian Stock Exchange as at 2013. A sample size of eleven (11) mainstream oil and gas companies was obtained for the study, because the population was small. The number of participants in the study was one hundred and ten (110), on a sample frame of ten (10) respondents per firm. Thus, the number of respondents for the study was 110, and 110 structured questionnaire was equally distributed to them through hand delivery method. Data was pulled together by means of a structured questionnaire and the hypotheses were tested using the simple regression analysis with the aid of the Statistical Package for Social Science (SPSS) version 22.0. The study proves that green marketing involvement had a moderate and significant influence on social sustainability and environmental sustainability. The study therefore concludes that, green marketing involvement significantly influence firm's sustainability of Nigerian mainstream oil and gas sector, and recommends that, the Nigerian oil and gas sector should design green marketing involvement strategies to better attend to the necessities for more environmentally and socially responsible activities in their supply chains and to optimize their supply chain management processes to better survive firm's sustainability

Key words: Environmental sustainability, Green marketing involvement, Social sustainability Sustainability.

INTRODUCTION

Technological breakthrough in the development of petroleum resources have contributed extremely to the worldwide energy requirement and economic development over the past decades; but, it has left profound harmful impacts on the natural environment in most oil-producing host communities in the region of the world. Over the past fifty-five years, the oil-producing host communities in Nigeria's Niger Delta region has experienced a wide array of environmental pollution, degradation, human health risks, and socio-economic problems as an end result of activities linked with petroleum exploration, development, and production (Ite & Ibok, 2013; Ite, 2012).

The cost of these activities are environmental disproportion fashioned by the excessive use of natural resources, unseemly dumping of plastics and rubber, elevated levels of waste generation, and by and large

degradation of the environment (Penuelas, Sardans, Rivas-ubach, & Janssens, 2012) has caused danger to the natural environment which has harmful unfavorable consequence on civilization. At the beginning, organizations and business models gave little or no thought to environmental concerns and ever more consumed natural resources devoid of putting into practice the principles of recycling, reusing, and remanufacturing (Song, Wang, & Cen, 2015; Dubey, Gunasekaran, Childe, Papadopoulos, Fosso-Wamba, & Song 2016, 2019; El-Kassar & Singh, 2019).

The oil industry plays a central role in the modern economy and society (Ceptureanu *et al.*, 2018), but their concentrated and far-reaching exploitation of oil sources repeatedly leads to environmental dreadful conditions, thus hoisting sustainability worry. Regardless of the significance of the oil industry, the literature for the most part passes over the sustainability linked challenges in the management of supply chains (Hussain *et al.*, 2006). Therefore, increased environmental movement and consciousness, in up to date decades, has drawn increased pressure on local and national government bodies to generate environmental protection policies and austere implement them to put off additional environmental degradation (Mani, Gunasekaran, Papadopoulos, Hazen, & Dubey 2016; Song & Wang, 2018), as a result bestowing an imminence in to the necessity for sustainability in business.

The statement of the Bruntland Commission was the first to make available the notion of sustainability, and accordingly defined it as “meeting the needs of the present generation without compromising the ability of future generations to meet their own needs” (UNO General Assembly, 1989). This implies that economic growth, social inclusion, and environmental protection are the three major mainstay of sustainable development (Wichaisri & Sopadang, 2017). Sustainability connotes the implementation of business aspirations or achievement at hand but not to the harm of impending requirements. Attaining sustainability necessitates modification in industrial operation processes, in the type and quantity of resources used, in the treatment of waste, in the control of emissions and in the products produced (Krajnc & Glavič, 2003). Sustainability is the aptitude to convene the necessities of current customers at the same time as taking into thoughtfulness the requirements of future generations. These designate that conduit leading to environmental sustainability in every one industry possibly will differ but the goal remains stable (Goodland, 1995). Companies espouse a quantity of approaches in order to improve economic, environmental and social performance. One of the approaches to guarantee never-ending sustainability in the environment is green marketing involvement.

Green marketing is a most modern and fashionable inclined market which makes possible the environment-friendly idea favourable to individual, animal and planet (Rajeshkumar, 2012). Firms are well thought-out successful when they are able to use their marketing competence to produce valuable offerings for several market segments (Arnett & Wittmann, 2014). The world biosphere is sustainable; by contrast, the marketing of human consumption in its current structure may be unsustainable (Polonsky, 2011). Environmental issues have become major concern for any organization that want to succeed in the face of stiff competition. Green marketing intervention incorporates an extensive collection of activities, embracing product modification, changes to the production process, packaging changes, as well as modifying advertising.

A historic magnitude of scholarly endeavours that enclosed green marketing involvement considered predominantly its relation to consumer purchase intention (Thoria, 2018); customer satisfaction (Macharia, Kibera, Munyoki & Kinoti, 2017); consumer purchase behaviour (Jeevarathnam & Tushya, 2016); consumer purchasing patterns (Aditi, 2016); firm's performance (Bilal, Kalsom, Zainon & Tareq, 2016); consumer decision making (Aditi, 2016), however, Acee-Eke and Ikegwuru (2020) investigated the influence of green marketing on sustainable development. Straight away, it is plain from the above mentioned that the extant empirical studies portrayed minimal record on firm's sustainability, thereby

illuminating a knowledge gap. Intriguingly, for the reason that little empirical study enclosed the effect of green marketing involvement on firm's sustainability, this study was therefore, hypothesized to fill this knowledge gap, by adding to the existing literature, an investigation into the influence of green marketing involvement on firm's sustainability in Nigerian mainstream oil and gas sector.

LITERATURE REVIEW AND HYPOTHESES

Ecological Modernization Theory (EMT)

This present study is anchored on ecological modernization theory. Ecological modernization theory (EMT) derives its underpinnings from sociological theory and has been additionally developed into policy and organizational theories (Spaargaren & Mol, 1992). Ecological modernization theory is a systematic eco-innovation theory EMT is focused on mutual accomplishment of industrial development and environmental protection by means of innovation and technological development, or modernity (Janicke, 2008; Murphy & Gouldson, 2000). Ecological modernization theory advocates that ecological regulations and policies can induce green practices in the midst of manufacturers (Janicke, 2008).

Therefore, to uphold green interconnected practices, suitable institutional measures and officially authorized structures by governments are considered necessary (Kassolis, 2007). Some researchers have argued that EMT is the basis of environmental policy integration by manufacturing firms (Gibbs, 2000), and such environmental policy is necessary for green practices development (Berger, Flynn, Hines, & Johns, 2001). EMT has been commonly espoused to put in plain words environmental planning by companies and their configurations of production in an approach that minimize environmental impact by key manufacturers (Murphy, 2000). Janicke (2008) explains that companies that are decisive to ecologically bring up to date their business practices will profit equally from enhanced economical and environmental performance.

This theory is relevant to this study for the reason that, green marketing intervention strategies as an important aspect of industrial ecology, can help to achieve sustainability as a vital ecological modernization concept in mainland oil and gas companies. This is because, EMT-anchored green marketing intervention strategies espousal by mainland oil and gas companies will demonstrate how environmental policy can support the adoption of green marketing intervention strategies that can bring both economic and environmental performance for these companies.

Green Marketing involvement

Green marketing involvement constitutes all activities designed to bring about and smooth the progress of any exchanges anticipated to satisfy human needs or wants, in such a manner that the satisfaction of these needs and wants materializes, with trifling fault-finding impact on the natural environment (Polanski, 1994). The American Marketing Association (AMA) described green marketing as marketing of products that are understood to be environment-friendly, which systematizes into assorted activities such as product adjustment, modification of production processes, packaging, labeling, advertising strategies as well as increases awareness on compliance marketing amongst industries (Yazdanifard, 2011).

Green marketing involvement relates to business practice which sustains sustainable development including the marketing of goods and services that are calculated to be biodegradable and upholding the safeguarding of the environment in a sustainable way (Jeevarathnam & Tushya, 2016). Green marketing involvement involves activities that necessitate producing, pricing, distributing and promoting goods or services which are environmentally not dangerous and are capable to satisfy consumers' environmental necessities (Ansar, 2013). Green marketing involvement therefore, concerns involvement in approach of

all activities premeditated to prompt and make easy any exchanges estimated to satisfy human needs or wants, such that the contentment of these needs and wants emanates with insignificant hostile impact on the natural environment.

The Concept of Sustainability

The World Council of Environment and Development (WCED) gave the first internationally acknowledged definition of sustainability as ‘the development that meets the needs of the present generation without compromising the ability of the future generations to meet their own needs’ (WCDE, 1987: 8). This present study defines sustainability as the aptitude to meet the necessities of existing customers at the same time as taking into consideration the necessities of upcoming generations. Sustainability is internationally established as the solitary sustainable development conduit (Goodland, 1995), and it has grown to be a central marketing energy touching long term financial feasibility and competitiveness.

Herbohn, Walker and Loo (2014) caution of the risk of annihilation of iconic species or loss of complete ecosystems and water resource threats. One of the most helpful ways to realize sustainability intentions is to condense energy consumption, along with its several unfavorable consequences. Hence, discerning and putting into practice innovative technologies are significant ladders in the supply of economical, dependable, ecologically sound, and easily reached energy in the region of the globe (Troldborg, Heslop & Hough, 2014). Sustainability has three components of economics, environmental and social equity. (Tijiani, 2014). This study in line with Tijiani. (2014) adopts social sustainability and environmental sustainability as the measures of sustainability.

Social Sustainability

Social sustainability handles the affiliation amid human rights and human development, corporate power and environmental justice, global poverty and citizen action, responsible global citizenship in an unavoidable building block of what may at initial momentary look gives the impression to be minimal issue of individual consumer or moral choice (Blewitt, 2008). Social sustainability entails making certain political and economic rights of citizens, the rights of the communities in which their sources are situated, appropriate and socially mindful corporate governance structures, labour rights, community culture, sustainable human development etc. are guaranteed (Yusuf *et al.*, 2012). Social sustainability is improvement or augmentation that is attuned with harmonious growth of civil society, nurturing an environment favorable to the well-suited cohabitation of ethnically and socially miscellaneous groups’ whilst at the same time supporting social assimilation, with enhancement in the quality of life for all subdivision of the population.

Social sustainability have need of ethics, tolerance, compassion and honesty to be sustained, and should be examined as the way of realizing economic and environmental sustainability aspirations, which necessitates improving and sustaining the quality of life of citizens.

Environmental Sustainability

Environmental concern have been the principal meeting point of inquiries over the past 20 year (Carter & Easton, 2011) and are turning out to be the foremost concern of several businesses in contemporary world. Environmental sustainability speaks about safeguarding natural resources such as minerals and the atmosphere along with others, and the nonattendance of which man cannot continue living (Yusuf *et al.*, 2012). Environmental sustainability is a deposit of constriction on the four prime activities modifying the scale of the human economic subsystem: the utilization of renewable and nonrenewable resources on the

source side, and pollution and waste assimilation on the sink side (Goodland, 1995). Pollution prevention actions are value added to businesses seeing that they shrink costs by means of material use cutback or by means of averting of waste management costs (Buyukozkan & Cifci, 2010). As a result, environmental sustainability is the protection of sources of raw materials required to satisfy human wants and not the creation of additional waste in excess of what the environment have room for and equally, human consumption ought to be acquainted with and call attention to sustainability.

Empirical Review

Acee-Eke and Ikegwuru (2020) investigates the influence of green marketing on sustainable development, by means of a structured questionnaire administered to 200 management Staff of four Local Government Areas (Port-Harcourt, Obio-Akpor, Emohua and Ikwerre) in Rivers State of Nigeria. Data was analyzed using regression test between independent and dependent variables. The research findings sustained the hypotheses that green marketing significantly influenced economic sustainability, environmental sustainability and social sustainability. The study concludes that, green marketing significantly influence sustainable development of Local Government Areas in Rivers State, and recommends that Local government administrators should adopt green marketing practices that will enhance economic, environmental and social sustainability to enable them achieve sustainable development.

Thoria (2018) examined the influence of green marketing mix on consumer purchase intention in Sudan using postgraduate (MBA) students in all the universities in Khartoum State. Descriptive and quantitative research design was adopted, 417 Postgraduate students were sampled, and the multiple regression analysis engaged in analyzing the data. The study revealed a significant relationship between green marketing mix elements: product, pricing, distribution and promotion, and consumer's purchase intention.

Novela, Novita and Scherly (2018) studied the effect of green marketing mix on customer satisfaction with eco-friendly products in Jakarta, Indonesia through 7p approach, draw attention to beauty and body treatment products; and sampling 101 residents of Jakarta. Multiple linear regressions were employed in the data analyses, and the outcomes designate significant relationship between customer satisfaction and product, price, promotion proxies of green marketing mix. Diminutive or fractional significant relationship was found to exist between people, and physical evidence proxies of green marketing and customer satisfaction. In the midst of the marketing mix study constructs, place was established as the weakest influence on customer satisfaction.

Macharia, Kibera, Munyoki and Kinoti (2017) looked at the extent green marketing practices associates with satisfaction of consumers of soft drinks in Nairobi, Kenya by means of a total of 180 trade customers and 162 soft drink companies sampled for the study. Structured questionnaire was used for data collection, and descriptive statistics, correlation, analysis of variance and regression analysis were employed in analyzing the data. The study demonstrated a statistically significant positive linear relationship between green marketing practices and customer satisfaction.

Bilal, Kalsom, Zainon and Tareq (2016) investigated the effects of green marketing strategies on sales turnover of green cars in Jordan, assuming a survey research design and sampling 332 car dealers. Descriptive statistics and structural equation model were used in analyzing the data pulled together with structured questionnaire, and the results depict that while green product, promotion, and green process are positive related to sales growth of green cars, green pricing, green physical evidence, green people and green distribution demonstrated negative effect on sales growth of green cars suggesting that espousing green marketing strategy may probably lead to significant enhancement in the sales volume of green cars in Jordan.

From the review of literature, the study developed the following conceptual framework:

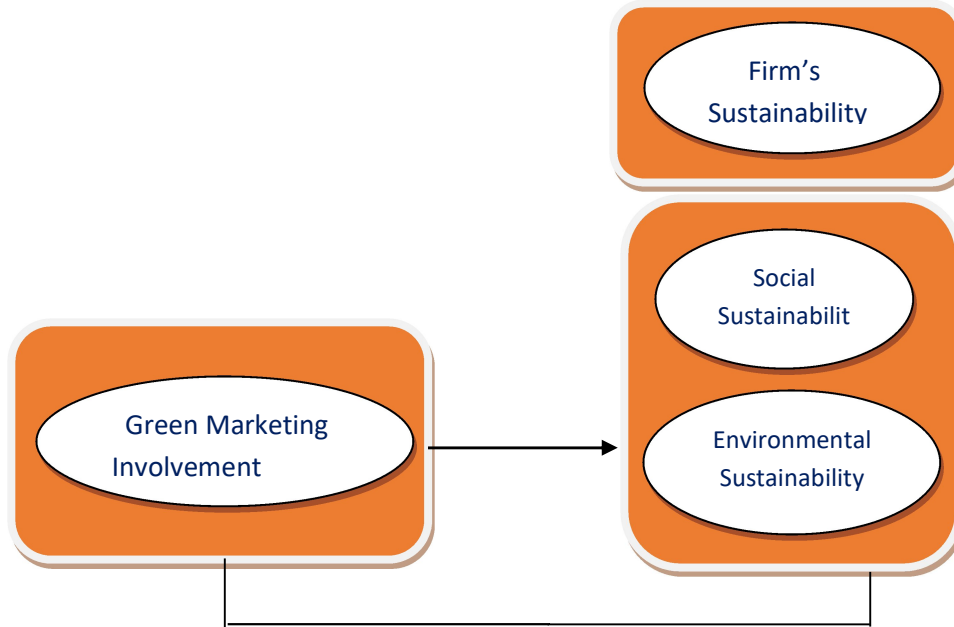


Figure 1: Conceptual framework of Green Marketing Involvement and sustainability

Source: Designed by the Researchers, (2022)

From the review of literature, the following hypotheses were formulated:

- H₀₁:** Green marketing involvement does not significantly influence social sustainability of mainstream oil and gas companies in Nigeria.
- H₀₂:** Green marketing involvement does not significantly influence environmental sustainability of mainstream oil and gas companies in Nigeria.

RESEACH METHODOLOGY

The survey research method was applied for this study, utilizing non-experimental design to provide a numeric description of the independent and dependent variables. Moreover, the causal research method was adopted to ascertain how green marketing involvement predicts firm's sustainability. The positivist ontology was also adopted as the study tries to bring about reality by dualism. The population of this study comprises all the eleven (11) mainstream oil and gas companies quoted in the Nigerian Stock Exchange as at 2013. The sample size consists of eleven (11) mainstream oil and gas companies in Nigeria, because the population is small and is also assumed as the sample size. The number of participants in the

study was one hundred and ten (110), on a sample frame of ten (10) respondents per firm. Thus, the number of respondents for the study was 110, and 110 structured questionnaire was equally distributed to them through hand delivery method. Data was pulled together by means of a structured questionnaire and the hypotheses were tested using the simple regression analysis with the aid of the Statistical Package for Social Science (SPSS) version 22.0.

Model Specification

This section specifies the subsequent model to direct the study:

The regression model is functionally specified thus:

$$FSUS = f(GMI)$$

where:

FSUS = Firm's Sustainability.

GMI = Green Marketing Involvement

The functional model is presented in econometric form as:

$$FSUS = \alpha + \beta_1 GMI + \epsilon \text{ where:}$$

A = Constant term

B = Beta coefficients

β_1 = Independent variable

ϵ = Error term

Apriori Expectation

From the theoretical prescriptions, green marketing involvement is mechanism of growth in and transporter of adeptness symbolize is projected to optimistically influence firm's sustainability (social sustainability and environmental sustainability)

RESULTS

Of the 110 copies of questionnaire that were distributed to the respondents, 100 copies were returned, yielding a response rate of 91 percent. The remaining 10 (9%) copies produced and distributed were not returned and were unaccounted for. The returned and usable rate 91 percent was thought-out as satisfactory for the analysis

Statistical Test of Hypotheses

Decision Rule:

Significant/probability value (Pv) < 0.05 (level of significance = conclude significant influence.

Significant probability value (Pv) > 0.05 (level of significant = conclude insignificant influence.

Influence of Green Marketing Involvement on Social Sustainability

Table 1: Influence of Green Marketing Involvement on Social Sustainability (n=100)

Model Summary				
Model	R	R square	Adjusted Square	R std error of the Estimate
1	.589 ^a	.437	.434	.50668

ANOVA of Green Marketing Involvement and Social Sustainability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59.765	1	59.765	265.579	.000
	Residual	29.780	99	.297		
	Total	89545	100			

Coefficients of Green Marketing Involvement and Social Sustainability

Unstandardized Coefficients			Standardized Coefficients		
Model	B	Std. error	Beta	T	Sig.
	.690	.259		3.569	.000
	.780	.853			
			.589		.000

Source: SPSS 22.0 window output (2022)

Decision: Since for hypothesis one, the significance is .000 which is lesser than 0.05, there is a significant effect of green marketing involvement on social sustainability. The regression helps us to conclude with the R (coefficient of correlation) that there is 58.9% direct relationship between green marketing involvement and social sustainability. R-squared value of 43.7% shows that green marketing involvement has a significant positive effect on social sustainability.

The ANOVA Table explains the fitness of the model as shown by. The F-ratio in the model is 265.579, which is very significant at $p < 0.05$. This implies that there is significant substantiation to extrapolate that green marketing involvement is linearly related to social sustainability. This proposes that the model is measured to be fit and that green marketing involvement has some influence on social sustainability. There is also a standardized coefficient of .589 which is perfect as well as corresponding P value (sig.) of .000 which is less than alpha (0.05). Therefore, we conclude that green marketing involvement significantly influences social sustainability of mainstream oil and gas companies in Nigeria.

Influence of Green Marketing Involvement on Environmental Sustainability

Table2: Influence of Green Marketing Involvement on Environmental Sustainability (n=100)

Model Summary				
Model	R	R square	Adjusted Square	R std error of the Estimate
1	.568 ^a	.465	.463	.000

ANOVA of Green Marketing Involvement and Environmental Sustainability

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.087	1	.087	299.886	.000 ^a
	Residual	.006	99	.000		
	Total	.093	100			

Coefficients of Green Marketing Involvement and Environmental Sustainability

		Unstandardized		Standardized			
		Coefficient		Coefficient			
Model		B		Std. error	Beta	T	Sig.
1	(Constant)	.1.866	.	.068		26.786	.000
		.567		.048	.568	19.675	.000

Source: SPSS 22.0 Window Output (2022)

Decision: Since for hypothesis two, the significant .000 is less than 0.05, there is a significant effect of green marketing involvement on environmental sustainability. The regression helps us to conclude with the R (coefficient of correlation) that there is 56.8% direct relationship between green marketing involvements and environmental sustainability. R-squared value of 46.5% shows that green marketing involvement can affect environmental sustainability.

The ANOVA Table explains the fitness of the model as shown by. The F-ratio in the model is 26.786, which is very significant at $p < 0.05$. This implies that there is significant substantiation to extrapolate that green marketing involvement is linearly related to environmental sustainability. This proposes that the model is measured to be fit and that green marketing involvement has some influence on environmental sustainability. There is also a standardized coefficient of .568 which is perfect as well as corresponding P value (sig.) of .000 which is less than alpha (0.05). Therefore, we conclude that green marketing involvement significantly influences environmental sustainability mainstream of oil and gas multinational companies in Nigeria.

DISCUSSION OF FINDINGS

The results of hypotheses one and two show that green marketing involvement has a moderate, positive and significant influence on social sustainability (0.589: $0.000 < 0.05$) and environmental sustainability (0.568: $0.000 < 0.05$). As evidenced by the statistical results the null hypotheses of no significant influence of green marketing involvement on social sustainability and environmental sustainability were rejected and the alternative hypotheses of significant influence of green marketing involvement on social sustainability and environmental sustainability were accepted. Consistent with our expectation *a priori*, these findings suggest that green marketing involvement can positively influence social sustainability and environmental sustainability.

Sustainability entails an included approach of economic, social and environmental dimensions of a business (Ceptureanu *et al.*, 2018; Elkington, 1998). Given that business accomplishment depends to a larger extent on efficient Supply Chain Management (Chen & Paulraj, 2004; Lambert & Cooper, 2000), it is therefore decisive that sustainability thoughtfulness be incorporated in the management of supply chain tasks (Jayaramen, Klassen & Linton, 2007). This study has therefore proved that, the espousing of green marketing involvement in organizations contributes to firms' success by illuminating firm's sustainability for superior distinctiveness in business. This corroborates Acee-Eke and Ikegwuru (2018), findings that green marketing significantly influenced economic sustainability. The findings is also in line with Bilal *et al.* (2016) whose findings revealed that implementation of green product, promotion, and green process were of a great importance and largely impacted sales growth of green cars.

CONCLUSION AND RECOMMENDATION

This study seeks to understand the impact of green marketing involvement on firm's sustainability of the Nigerian mainstream oil and gas sector. It explores the influence of green marketing involvement on two firm's sustainability metrics- social sustainability and environmental sustainability. The main findings of our analyses are as follows. The study proves that the Nigerian mainstream oil and gas sectors' firms' sustainability (social sustainability and environmental sustainability) was definitely impacted by green marketing involvement. The study therefore concludes that, green marketing involvement significantly influence firm's sustainability of Nigerian mainstream oil and gas sector, and recommends that, the Nigerian oil and gas sector should design green marketing involvement strategies to better attend to the necessities for more environmentally and socially responsible activities in their supply chains and to optimize their supply chain management processes to better survive firm's sustainability.

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