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RESEARCH ARTICLE

Impact of Environmental Cost on Productivity of Oil and Gas Industry in Nigeria

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ABSTRACT

This study examined Impact of Environmental Cost on productivity of oil and gas industry in Nigeria. Four (4) oil and gas business- firms quoted on the Nigeria Stock Exchange were strategically selected for the study. The proxy for the dependent variable is cost of sales of oil while the independent variables are donations to orphanage and foundation, staff welfare packages and donation for community welfare. Ordinary Least Square Regression Analysis was employed to analyze the data collected from the sampled oil and gas firms during the period. The study found out that - Donations to Orphanage and Foundations (DOF), Staff Welfare Package (SWP) and Donations for Community Welfare (DCW) have positive and significant impact on Cost of Sales of oil and gas business-firms in Nigeria. It was confirmed that Oil and gas firms operating in Nigeria should regularly donate to orphanage and foundations; design appropriate staff package and welfare scheme which will ensure that staff of the firms are properly remunerated make donations for community welfare such as donations for infrastructural development, scholarship and bursary awards, skill acquisition among others to promote a amicable relationship between the firms and the host communities

Keywords: *Environmental Cost; Productivity of Oil and Gas Industry; Nigeria*

Introduction

The business organization does not exist in a vacuum but within its environment. The environment constitutes the stakeholders of a business entity whose operation can mar or make it smooth for the Organization to achieve its objective, however not much was recognized of the environmental depletion and degradation to the environment until the early 1990s, after the work of Robert Hugh Gray, when some advanced countries realized that it was not good having corporate profit without making adequate provision for cost management for the ecosystem. It was noticed that degradation and pollution destroyed the ecosystem. It then became imperative that the objective of profit maximization of firms should be managed with the environmental cost needs (Uwuigbe, 2011). Environmental costs are costs incurred by organizations in order to prevent environmental problems and minimize damages to the environment. They are those costs incurred in compliance with, or to the prevention of the breach of environmental laws, regulations, and organizations' policies. The genuine environmental costs to a firm, according to Iheduru & Chukwuma (2019), the cost can be much encompassing to include costs of resources, both those directly related to production and those involved in general business operations, waste treatment and disposal expenses, the cost of a bad environmental reputation, and the cost of paying an environmental risk premium. Iheduru (2018) classified environmental costs into private costs and societal costs. He affirms that the costs that directly impact a firm's bottom line are the private costs, while the costs associated with individuals, society, and the environment for which a firm is not accountable, are called societal costs. Akani (2018) maintains that environmental cost should be properly reported because of its relevance to accounting information. Chron (2020), states that a firm may impact the environment in a number of ways, including air pollution, manufacturing emissions, wet land impact and waste disposal.

This study adopted donations to orphanages and foundations, staff welfare package, and donations for community welfare as proxies for environmental costs.

An orphan is a kid under the age of 18 who has lost one or both parents for any cause, according to UNICEF and Global Partners (2018). An institution dedicated to caring for such children is called an orphanage. Firms donate to orphanages as part of their environmental costs and corporate social responsibility expenses. The total of all awards granted to employees in exchange for services rendered to the organization, according to Monday (2008), is the staff welfare package or compensation package

According to David (2002), one of the key reasons for excessive employee turnover is a lack of proper compensation. Community welfare, also known as social welfare, is a system that assists individuals and families through programs such as health care, food, unemployment compensation, housing help, and child care assistance, according to Kegan (2021). The study's independent variable is the cost of sales. The cost of sales is a measure of the cost of goods produced or services provided by a company over a certain period, according to Accounting Couch (2021). It covers the cost of direct materials utilized in the manufacture of the items, as well as direct labor costs and any additional direct production costs. It is computed as the cost of finished goods in beginning inventory + the cost of products manufactured during the accounting period minus the cost of completed goods in ending inventory in a manufacturing firm like oil and gas. Environmental cost management is aimed at controlling the costs that are associated with the environmental impact the organization has through its business activity. Factors such as factory emissions and waste disposal could have an impact. Environmental cost management is used for two main reasons. One is that reducing these expenditures will have a positive influence on the environment by indirectly reducing environmentally harmful activities. Another reason is that it has the potential to boost business profitability by lowering costs in specific areas and perhaps assisting in the development of a favorable brand image. Environmental cost management is used by companies in advanced economies to build a favorable brand image and boost profitability.

However, firms such as oil and gas with considerable environmental activities have yet to take advantage of this opportunity in new or emerging economies, particularly Nigeria. Oil spills, air pollution, continuous gas emissions, and environmental degradation are the outcome, particularly in the Niger Delta locality, where oil and gas companies are concentrated. This causes restlessness among youngsters, as well as the damage and vandalism of oil pipelines, a lack of trust, and a sour relationship between oil and gas companies and their host towns. As a result, some of these oil and gas companies have had poor financial performance and may eventually go out of business. This development prompted the current study to look into the influence of environmental costs on the oil and gas industry's productivity in Nigeria.

Review of Related Literature

Ileana-Sorena (2014) states that Environmental costs are defined as the expenses of creating, detecting, remediating, and preventing environmental damage. Environmental costs are broken down into four categories: environmental cost avoidance, environmental cost recognition, environmental internal failure, and environmental external failure. Murphy (2010) equally defines environmental cost as a term used to describe the social cost that is incurred when substances are released into the air, water, or land resulting in the pollution of the environment. Idris (2012) states that environmental issues arise because of the interaction between economic and environmental activities. The higher the intensity, the higher the impact on environmental degradation. As a result of this, environmental issues have been a serious problem to be monitored and need precautionary action from stakeholders. Environmental accounting has also been liked to sustainable development. Beredugo & Mefor. 2012

Donations to Orphanages & Foundations

Catholic Encyclopedia. (2019) An orphanage is a facility dedicated to caring for children who have lost their parents or who are suspected to have been abused, abandoned, or neglected in some way. Generally seen as a poor substitute for foster care and adoption. Orphanages can be privately or publicly supported, and religious organizations may administer them. An orphan is a person who has lost both parents, usually a child. Historically, certain birth parents, such as children born out of wedlock or into poor homes, were frequently pressured or compelled to give up their children to orphanages. UNICEF & Global Partners (2018) state that there have been nearly 140 million orphans globally in 2015, including 61 million in Asia, 52 million in Africa, 10 million in geographic region and therefore the Caribbean, and 7.3 million in Eastern Europe and Central Asia.

A foundation, according to Foundation Source (2021), is the name given to several sorts of NGOs and benevolent organizations. A foundation could be either private or public. A private foundation is a separate legal body established for the primary purpose of charitable giving. A private foundation receives money from a single individual, a family, or a firm, which obtains a tax deduction for donations, as opposed to a public charity, which relies on public fundraising to maintain its activities.

Staff Welfare Package

Employee benefit packages include all forms of compensation or remuneration received by employees as a result of their job. Direct compensation, indirect compensation, and non-monetary rewards are all available (Negash, Zewude, & Megersa, 2014). It is a personnel resource management actions that deals with all types of compensation that workers accept in return for doing work for the company (John, 2003). The major goals of employee benefit packages or remuneration, according to Monday (2008), are to attract competent people, protect competent personnel, and inspire hardworking employees. Compensation packages helps organizations in different ways, facilitating the realization of organizational objectives (Hajipour & Shooshtari, 2009).

Donations for Community Welfare

According to Mohant (2011) as a philanthropy and selfless service contribute positively to the welfare of society without diminishing the wellbeing of any person, resulting in a Pareto-improvement in social welfare. In other words, a society can achieve a better degree of subjective wellbeing, notwithstanding of its existing degree of development, provided the affluent elite willingly engages in service activities that benefit the less fortunate.

Cost of Sales

Fernando (2021) defines the cost of sales or cost of goods sold as the direct costs of producing the commodities sold by a company. The direct charge comprises the value of materials and labour used to create the component. It does not include indirect expenditures such as distribution, sales, and marketing. The gross profit or gross margin is calculated by subtracting the cost of sales from the sales revenue. Depending on the accounting rules employed in the calculation, the cost of the sales value will change. Beginning inventory and acquisitions are subtracted from closing inventory to compute the cost of sales. Any material that is returned outwards is deducted from the cost of sales. The inventory leftover from the previous year is the beginning inventory for the year, while the inventory left over from the current year is the ending inventory. The cost of sale is an important instrument for calculating a company's gross profit. It's computed by subtracting the cost of products sold from the revenue of the company. Gross profit is used to determine how well a company manages its labor and supplies during the manufacturing process. Cost of sales and COGS are key metrics in cost analysis. Both show the operational costs that go into producing a good or service. If cost of sales is rising while revenue stagnates, this might indicate that input costs are rising, or that direct costs are not being managed properly. Cost of sales and COGS are subtracted from total revenue, thus yielding gross profit.

Donations to Orphanages/Foundations and Firm Productivity

From 2008 to 2017, Onyekachi, Ihendinihu, and Azubike (2020) employed ordinary least square multivariate analysis to analyze the impact of environmental costs accounting on company earnings in Nigeria. For the five years of the study, cross-sectional data were acquired from the sampled firm. The findings of the study imply that environmental investments by businesses are significantly linked to their profits. In keeping with the study, all business units in Nigeria should sit up with current financial reporting concerns by engaging in, and properly reporting, investments in environmental replenishment, as this can improve their organization's image and business. The studies also revealed that because of the dearth of a world principle to enable accountability and harmonization of environmental reports, a niche exists within the reporting of enterprises' environmental actions. The report also suggested that the International Accounting Standards Board develop a specialized standard to fill this vacuum, allowing the accounting profession to effectively contribute their quota to a sustainable world.

Between 2006 and 2015, Okafor (2018) checked out the impact of environmental costs on the performance of Nigerian-listed oil and gas companies. Environmental costs are represented by - Cost of Environmental-Remediation and Pollution Regulation, Cost of Environmental Laws Compliance and Penalty, Donations and Charitable Contributions, and one variable, return on asset (ROA), which could be a measure of corporate performance. Secondary data from the sampled oil and gas companies were obtained and evaluated using multivariate analysis. The findings of the study show that improved environmental performance encompasses a favorable impact on firm value. Furthermore, environmental accounting allows the corporate to chop environmental and social expenses while also improving its performance.

Eze, Nweze, and Enekwe (2016) used a survey research approach to analyze the implications of environmental accounting on a developing country, using Nigeria as an example. To complete this study, the researcher used both primary and secondary data sources. Interviews were the first source of data, with secondary sources including the web, textbooks, journals, national dailies, and government publications. The information was analyzed using multivariate analysis. Findings showed that organization that had cordial relationship with her environs, who willingly made known their environmental actions, enjoy a high level of competitiveness. With Environmental accounting organizations were moved to discover their point of emissions and other environmental elements so as to reduce or eliminate it. It absolutely was recommended that companies define and use a uniform method for the control and measurement of performance. The product that has less wastage or emission during production should also be considered.

Bassey, Sunday & Okon (2013) appraised the impact of environmental accounting and reporting on organizational performance of oil and gas firms operating in the Niger Delta region of Nigeria. Correlation analysis was used to analyze the data collected for the study. The finding of the analysis indicates that environmental cost has a statistically significant relationship with a firm’s profitability. The study concluded that there to be control and measurement of productivity, there should be reporting and disclosure standard to be adhered to and publishing of accounting standards both locally and internationally.

Staff Welfare Package and Firm Productivity

Onuora and Christian (2019) studied the impact of environmental costs on the financial performance of 7 Nigerian oil and gas businesses listed on the stock exchange. Secondary data from the sampled firm was gathered for the years 2017 and 2018. The data collected from the firms were analyzed using ordinary least square regression analysis. Environmental expenditures have no substantial impact on gross profit margin, according to the study's findings. The environmental cost has a considerable impact on return on capital utilized, according to the findings. The study recommended that the management of oil and gas companies should continue to engage in incurring environmental costs accordingly as well since they had no significant effect on financial achievement.

From 2007 to 2016, Mohammed, Tjjani, and Ibrahim (2018) investigated the effect of environmental costs on the performance of Nigerian oil and gas companies listed on the stock exchange. The analysis was conducted using panel data from the National Petroleum Management Investment Services relating to four Nigerian oil and gas companies. Data was also gathered from the four firms' annual reports and accounts. The study's independent variables and proxies for environmental costs include remediation control costs, pollution prevention costs, waste management costs, and laws compliance costs, whereas the dependent variables and proxies for business performance are firm profit during the time. The acquired data were analyzed using panel data regression analysis. According to the findings, three of the four environmental expenses employed as proxies had a considerable impact on the performance of Nigerian-listed oil and gas companies. In light of these findings, it was suggested that the amount spent by Nigerian oil and gas companies on environmental remediation control costs be increased, while prevention control costs are reduced to a significant extent, as this will go a long way toward improving the performance of Nigeria's publicly traded oil and gas companies. The amount spent on environmental laws and compliance penalties should also be increased as this will eventually translate into better performance for the listed Oil and Gas firms in Nigeria.

During the global financial crisis, Manrique & Ballester (2017) employed correlation analysis to assess the impact of business environmental performance on company financial performance. A total of 2982 major businesses from developed and developing countries around the world were sampled for the study. Corporate financial performance, such as return on assets and Tobin's Q ratio, is the dependent variable, while corporate environmental performance is the independent variable. Cash flow, current ratio, leverage, size, R&D, capital, growth, and market share are all control variables. Secondary data for the years 2008 to 2015 was acquired from the selected firms. For clustering by firm and year, standard errors were corrected. According to the findings, environmental practices have a considerable and favorable impact on firm financial achievement in both advanced and developing countries. This aftermath, however, is stronger for enterprises in poor countries than for those in rich countries.

Uwuigbe, Uwuigbe, and Ajayi (2011) investigated the corporate social responsibility disclosures made by a publicly visible company in Nigeria. The analysis included thirty (30) companies that were listed on the Nigerian Stock Exchange between 2006 and 2010. In addition, the study established and used a disclosure index to assess the level of corporate social responsibility disclosure provided by companies in their annual reports throughout the time period. The correctional data gathered for the study was analyzed using regression analysis. According to the findings, there is a significant link between corporate environmental visibility and the extent of corporate social responsibility disclosure among Nigerian listed companies. Environmentally prominent enterprises also provide more environmental information in their annual reports to legitimize their operations and avoid political risks associated with public scrutiny, according to the study.

Odesa, Igbru &Agbasi (2016), work on the effects of environmental cost on firm performance of selected manufacturing and Oil and gas companies in Nigeria sampled selected firms in Nigeria for period 2010 to 2014. Using descriptive statistics, correlation and regression analysis, finding revealed a positive significant relationship exists between corporate social responsibilities, employee health and safety cost, waste management and firms' performance while community development cost has a negative and insignificant relationship with firm performance.

Donations for Community Development and Firm Productivity

Iheduru & Chukwuma (2019) investigated environmental and social costs on manufacturing business performance in Nigeria in 2016. A random sample of 14 food and beverage manufacturing companies listed on the Nigerian Stock Exchange was chosen at random. Secondary data from the selected firms in 2016 was obtained and analyzed using multiple regression models. Environmental and social costs have notable adverse association with return on capital employed and earnings per share, whereas environmental and social costs have a significant positive bond with net profit margin and dividend per share. It was recommended that government provide a leverage to organizations that go with its environmental laws to scale back their environmental costs while environmental reporting should be made compulsory in Nigeria to enhance the output of organizations and therefore the nation at large.

Agbo, Ohaegbu & Akubuilo (2017) empirically examined the effect of environmental cost on organizational performance in Nigerian Brewery Plc. Donations, medical expenses, training, recruitment & canteen expenses were used as the independent variables and measures of environmental cost while return on assets (ROA) is the dependent variable and measure of organizational performance. Secondary data was gathered from Nigeria Brewery's annual report and financial statements from 2011 to 2015. Multiple Regression Analysis was used to examine the given data. According to the findings, donation and medical expenses are negatively connected to return on assets, but training, recruitment, and canteen expenses are positively related to return on assets.

Nwabueze (2015) examined the consequence of environmental costs on the performance of manufacturing firms in Nigeria from 2005 to 2014. The study targeted a total population of 22 manufacturing firms listed on the Nigerian Stock Exchange during the period. A sample of 5 firms was selected from this population judgmental sampling technique. Nestle Nigeria Plc, GlaxoSmithKline Nigeria Plc, Guinness Plc, Unilever Nigeria Plc, and Nigerian Breweries Plc were the 5 firms selected for the study. The dependent variables and proxies for financial performance are return on capital employed, net profit margin, earnings per share, and dividend per share. The secondary data collected for the study were analyzed using Ordinary Least Square Regression Analysis. Environmental expenses have a negative but insignificant effect on ROCE and EPS, and a positive but insignificant effect on NPM and DPS, according to the findings. recommended in the light of these findings that Government, Financial and Regulatory Bodies should make environmental reporting in annual reports compulsory and Government Agencies should give tax credit, subsidies, and financial/non- financial awards to organizations that comply with the environmental laws of the country to encourage environmental reporting.

Makori & Jagongo (2013), examined the relationship between environmental accounting and profitability of sample of some firms quoted in Bombay Stock Exchange in India. analyzing the data using multiple regression models showed significant negative relationship between Environmental Accounting and Earnings per Share (EPS)/Return on Capital Employed (ROCE) and a significant positive relationship between Environmental Accounting and Net Profit Margin and Dividend per Share. They also advise that Firms that comply with environmental laws should be compensated with tax credit.

Theoretical Framework

The stakeholders' Theory developed by Edward Freeman in 1984 is well suited for the study. Therefore, we anchored the study on the Stakeholders' Theory. Edward Freeman propounded the favored Stakeholders' Theory in 1984. The theory is an improvement to Agency theory. Whereas Agency theory focus of shareholders and management, stakeholders' theory do not only consider the relationship between the shareholders/owners of the business and the management but extended it to other stakeholders or groups within the environment which the organization carries out its activities.

Freeman (1984), argues that since organizations cannot exist in a vacuum without having interaction with its environment like the customers, employees, host community, suppliers and others whose activities can mar the operation of the business, the interest of these groups are paramount in the strategic planning of the business. Lawal

(2011), in his argument suggested that maximization of the shareholders wealth should not be the only concern of the management but also the interest of other stakeholders should be treated with care. It has been argued that for an optimum achievement, the relationship between the management and stakeholders should be cordial and enhanced. The Board should be flexible enough to accommodate the interest of these stakeholders who in one way or the other are affected by the activities of the firm and whose adverse action can deter the optimum achievement of the Organization. The stakeholder's theory suggested an enhanced level of environmental awareness which introduces the necessity for companies to increase their corporate plan to include the non-traditional stakeholders just like the regulatory opposed groups to adapt to changing social demands as in (Malarvizhi & Yadav, 2008). The stakeholders' theory in environmental accounting is primarily concerned with environmental cost factors and value, in addition as their inclusion in financial statements

Methodology

This section is divided into research design, data sources, area of study, the population, the sample size determination, the model specification and method of data analysis. This study is an ex-post-facto study, historical financial data were collected from the financial statements of selected oil and gas firms listed on the on the Nigeria Stock Exchange for the study. The research was carried out in Nigeria, with a focus on oil and gas companies that were listed on the Nigerian Stock Exchange from 2013 to 2019. The population of the study constitute 11 oil and gas companies quoted on the Nigeria Stock, however 4 samples were targeted and selected for the study. The determination was on disclosure of corporate social responsibility and environmental cost information in the financial statement which was the main criteria used in selecting the firms. The firms selected are; Seplat Oil Nigeria, MRS Nigeria, Mobil Oil, Nigeria, and Eterna Oil. The independent variables of the study and proxy for environmental cost are, donations to orphanages and foundations, staff welfare package, and donations for community welfare while the dependent variable and proxy for firm productivity is the cost of sales. The model developed in line with the variables of the study is;

$COS = f(\beta_0 + \beta_2 DOF + \beta_3 SWP + \beta_3 DCW) + \varepsilon$
Where:
f = Function of
COS= Cost of Sales
DOF = Donations to Orphanages & Foundations
SWP = Staff Welfare Package
DCW = Donations for Community Welfare
β = Beta
ε = error terms

The data gathered from the sampled oil and gas enterprises during the period were analyzed using Ordinary Least Square Regression Analysis. The adjusted R-square was used to determine how well the independent variable explained fluctuations in the dependent variables. Donations to orphanages/foundations, staff welfare packages, and donations for community welfare are the study's independent variables and proxies for environmental cost, while the cost of sales is the study's dependent variable and proxy for environmental cost.

Discussion of Findings

Table 1: Ordinary Least Square Regression Analysis

Dependent Variable: COS
Method: Least Squares
Date: 6/07/21 Time: 13:13
Sample (adjusted): 4 28
Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41425.09	18750.11	1.346700	0.4252
DOF	0.007523	2.60E-05	4.983269	0.0000
SWP	0.004524	5.74E-05	5.115067	0.0278
DCW	0.006808	10407.90	1.399689	0.0105

R-squared	0.780011	Mean dependent var	389002.45
Adjusted R-squared	0.745064	S.D. dependent var	65384.02
S.E. of regression	10126.02	Akaike info criterion	25.51280
Sum squared resid	1.51E+88	Schwarz criterion	21.89555
Log likelihood	-528.5331	Hannan-Quinn criter.	21.35353
F-statistic	72.78245	Durbin-Watson stat	2.812147
Prob(F-statistic)	0.000000		

Source: E-View 8

Table 1, presents the regression analysis of the study. The result from the table indicates that Adjusted R-Square is 0.745064. This means that 75% of the changes in selected firms' cost of sales during the period is explained by the independent variables, namely, donations to Orphanage and Foundations and Staff Welfare Package and Donations for Community Welfare while the remaining 26% is explained by other variables not captured by the model of the study. Therefore, the independent variables are significant in explaining the variation in the dependent variable during the period. This result is also collaborated by the coefficient of F-Statistic in the regression analysis, which is significant at 0.05 level of significance (0.05<0.000000). Thus, the overall model is significant in explaining the changes in the dependent variable of the study. Durbin-Watson Statistics also shows that there is no trace of autocorrelation in the model of the study. This is confirmed by the value of Durbin-Watson Statist which is 2.81214 (2.81214 > 2).

Discussion of Findings One: Table 1 indicates that the value of Donation to Orphanage and Foundations (DOF) in the regression model is 0.007523, which is positive. The table also shows that the significance of DOF is significant at 0.05 level of significance (0.0000<0.05). Based on these results, we assert that Donations to Orphanages and Foundations (DOF) positively and significantly impact the Cost of Sales of oil and gas firms in Nigeria during the period. This result is consistent with the Stakeholders' Theory by Edward Freeman in 1984 which maintains that firms cannot exist in isolation without relating with their immediate environment and therefore should accommodate the interest of all stakeholders in its process of strategic decision making.

Discussion of Findings Two: Results from the regression table also revealed that the coefficient of Staff Welfare Package (SWP) and its significant value are 0.004524 and 0.0278 respectively. It can be stated based on these results Staff Welfare Package (SWP) positively and significantly impact the Cost of Sales of oil and gas firms in Nigeria during the period. This result is also following the Stakeholders' Theory The theory argues that firms cannot exist in isolation without relating with their immediate environment and therefore should accommodate the interest of all stakeholders in its process of strategic decision making.

Discussion of Findings Three: Results from the regression table equally indicate that the coefficient of Donations made for Community Welfare (DCW) and its significant value are 0.006808 and 0.0105 respectively. It can be stated in the light of these results that Donations for Community Welfare (DCW) positively and significantly impact the Cost of Sales of oil and gas firms in Nigeria during the period. This result is consistent with the Stakeholders' which argues that firms cannot exist in isolation without relating with their immediate environment and therefore should accommodate the interest of all stakeholders in its process of strategic decision making.

Conclusion And Recommendation

Because of the literature gaps currently existing in Nigeria in this area of study, we analyze the impact of environmental cost on the productivity of oil and gas firms listed on the Nigeria Stock Exchange. A total of 11 oil and gas firms were listed on the Nigeria Stock Exchange during the period. We selected 4 of the firms to conduct the study using disclosure of environmental cost in financial statements as criteria for the selection. Cross-sectional data were collected from the selected oil and gas firms from 2013 to 2019. The data collected were analyzed using Ordinary Least Square Regression Analysis. In line with the findings from the analysis, we concluded the overall model is significant in explaining the variations in the independent variables of the study. We also conclude that the three independent variables (Donations to Orphanage and Foundations, Staff Welfare Package, and Donations for Community Welfare) positively and significantly impact the Cost of Sales of oil and gas firms in Nigeria during the period.

Recommendations

In line with the findings of the study and the conclusions, we suggest the following recommendation for oil and gas firms operating in Nigeria:

I. Oil and gas firms operating in Nigeria should regularly donate to orphanages and foundations. This is important as such donations boat the firms' productivity. The donations create a positive image about the firms which in turn attracts investors and customers to boast firms' sales and financing.
II. Oil and gas firms in Nigeria should design appropriate staff packages and welfare schemes that will ensure that staff of the firms is properly remunerated. Motived and well-remunerated staff will increase firm productivity as indicated in the findings of this study.
III. Lastly, the firms should make donations for community welfare such as donations for infrastructural development, scholarship and bursary awards, skill acquisition among others. This will promote a cordial relationship between the firms and the host communities. The cordial relationship will no doubt boast firms' productivity and promote mutual benefits of the firms and the host communities.

Limitation of Study

This study is however limited by the fact that it only examined the Oil and Gas industry of the Nigerian economy out of the 11 oil and gas firms listed on the Nigeria Stock Exchange Market only 4 have information on Environmental cost on their financial statement needed for the study. Future research could evaluate other sectors of the Nigerian economy.

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APPENDIX I

Raw Data

FIRM	YEAR	DONATIONS ORPHANAGE & FOUNDATIONS N (000)	STAFF WELFARE PACKAGE N (000)	DONATIONS COMMUNITY WELFARE N (000)	COST OF SALES N (000)
MRS	2013	-	558,927	-	85,010,323
	2014	869	127,995	600	22,559,230
	2015	-	131,888	-	19,721,369
	2016	369	671,315	400	100,879,939
	2017	3,411	713,023	6,279	99,393,668
	2018	1,000	685,373	3,179	85,256,239
	2019	900	570,848	810	61,160,282
SEPLAT	2013	1,932	13,219,000	20,228	11,216,000
	2014	-	18,205,000	25,488	50,647,000
	2015	396	24,156,000	169,495	63,705,000
	2016	-	5,340,000	-	47,076,000
	2017	451	7,925,000	104,900	73,414,000
	2018	225	8,618,000	121,458	103,086,000
	2019	135	7,347,000	72,525	85,987,000
ETERNA	2013	500	25,503	3,000	95,412,455
	2014	650	26,007	2,150	78,925,805
	2015	700	30,262	2,650	88,985,055
	2016	750	210,561	2,574	98,319,195
	2017	800	207,971	14,367	166,692,948
	2018	750	148,548	4,100	247,235,487
	2019	750	23,995	7,850	224,324,578
OANDO	2013	160	9,499,057	130,142	390,584,435
	2014	300	12,966,340	162,473	149,584,435
	2015	-	6,164,587	93,804	149,610,781
	2016	97,426	6,205,073	47,798	106,752,639
	2017	149,014	6,959,928	104,790	426,933,813
	2018	205,097	11,029,287	106,488	409,341,126
	2019	-	12,057,861	224,690	181,244,401