

Relationship between Environmental Costs and Financial Performance of Oil and Gas Firms in Nigeria

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Abstract:

This study explored the relationship between environmental costs and financial performance of oil and gas firms in Nigeria for the period 2010 – 2019. The dependent variable and proxies for financial performance were return on assets, return on equity and earnings per share while environmental costs is the independent variable of the study and was measured by corporate social responsibility expenses. A sample of 5 firms was selected from the 11 oil and gas firms listed on the Nigeria Stock Exchange for the period of study. Secondary data were sourced from the annual reports and accounts of the selected firms and analyzed using Pearson's Product Moment Correlation analysis. Findings from the analysis indicate that the relationship between corporate social responsibility expenses and return on assets was negatively weak and insignificant. It was also found that corporate social responsibility expenses of oil and gas firms has weak positive and insignificant associations with return on equity and earnings per share. In view of the findings of the study, we recommend that firm managers should avoid incessant investment in assets and invest only on those assets that will enable them achieve cardinal corporate objective of profit and wealth maximization for the firm owner. It was also recommended that firm managers should use more of equity financing in their capital structure. This will increase return on equity thereby boosting the firms' corporate social responsibility performance. It was further recommended that the firm should repurchase some of its share floating around the Stock Exchange Market in order to increase the firms' earnings per share and thus enhance corporate social responsibility performance of the firms.

Keywords: *Corporate Social Responsibility, Return on Assets, Return on Equity, Earnings per Share, Oil & Gas Firms, Nigeria*

1. Introduction

Over the decades, the uncontrolled impact of industrial activities on the natural environment has created critical ecological concerns. This is coupled with the aggravation of phenomena like climate change, ozone layer depletion, and over exploitation of natural resources, air pollution and toxic wastes which are negatively affecting the sustainable development of the planet and of the economic system. However, the increase in global environmental awareness and campaign for sustainable economic development is redirecting the

attention of firm towards environmental sensitivity. At the global level, government regulation, society pressure groups and green consumer pressure has led to the awakening of firm to the reality that is no longer business as usual [1]. Firms are now directed through regulations to engage in environmental cost management and accounting which enables them to control the costs associated with the environmental impact of its business operations. Firm operations may impact the environment in a number of ways, including air pollution, manufacturing emissions, wet land impact and waste disposal [2].

USA Environmental Protection Agency [3]

defines environmental costs as actions carried out or to be carried out for the responsible management of the environmental impact of a firm's activity, as well as other costs obtained as a result of the firm's environmental objectives. Chron [2] asserts that environmental costs include current and future environmental impacts of firm activities and the labor costs associated with accounting for environmental costs. Effective control of environmental costs and promotion of environmental benefits will increase a firm's overall profitability. Ambec & Lanoie [4] state that environmental dimension of corporate social responsibility became important after Rio declaration on environment and development. It promoted sustainable development as a society priority around the world for governments, firms and individuals. Business activity generates pollution and waste that can damage natural systems, causing irreversible harms, which reduce environmental resources available to society. In view of these, firms must take care of preventing and reducing their environmental impact through corporate environmental practices. Putri and Wardiha, [5] also opine that environmental accounting or green accounting depicts an effort to combine the cost and benefit of environmental activities in economic decision making.

Using corporate social responsibility as the independent variable and proxy for environmental cost while return on assets, return on equity and earnings per share as the dependent variables and proxies for financial performance, this study investigated the relationship between environmental cost and financial performance of oil and gas firms in Nigeria. Return on assets is a profitability ratio that provides how much profit a firm is able to generate from its assets. It measures how efficiently a firm's management is in generating earnings from the economic resources (assets) at its disposal [6]. Return on equity is a ratio that provides investors with insight into how efficiently a firm or its management is handling the money that shareholders have contributed to it. It measures the profitability of a firm in relation to shareholders' equity [7]. Earnings per share (EPS) are the portion of a company's net income that would be earned per share if all profits were paid out to shareholders. EPS tells you a lot about a company, including a company's current and future profitability [8].

Despite the benefits of environmental cost management, information on environmental performance of oil and gas firms in Nigeria are

only available to some extent, however, the oil and gas firm managers that make business decision are unable to link environmental information to economic variables and are thus lacking environmental costs information. As a result of this development, the managers fail to recognize the economic value of natural resources such as the financial value of good environmental performance. Some oil and gas firms in the country have failed as a result of inability to properly identify and control the costs associated with the environmental impact. This resulted in poor financial performance and eventually extinction of the firms. This development instigated the current study to examine the relationship between environmental costs and financial performance of oil and gas firms in Nigeria.

2. Review Of Related Literature

2.1. Concept of Environmental Cost

Murphy [9] describes 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. However, some new regulations relating to environmental protection has resulted in internalization of some of these environmental externalities by firms operating in an environment. For instance, there is new requirement of additional investment in equipment or training, or for fines and fees resulting from noncompliance by firm. Thus, as environmental externalities become internalized, and investors start to pay attention to the environmental risks of their "investments" new costs emerge. These new costs must be captured by the traditional cost accounting system, so that product costs remain accurate enough to facilitate sound decision making by policy makers and business managers.

Chron [2] state that when business operations cause significant environmental damage, the costs of recovery may be great enough to cause the firm to fail because it may bring about lawsuits that may take years to close. Again, trying to manage environmental costs on the spur of the moment may lead to a serious mistake that will cause significant damage to the environment. In view of this, effective planning is best accomplished through the efforts of well-designed teams that have the resources available to research all of the possible ramifications of every action the firm may take over the next year, and maybe over the next five years. Environmental planning includes

making assessments, studies, evaluating safety features and cost evaluations. Once all of the possible environmental ramifications have been considered, an accurate determination of how much environmental impact will cost.

2.1.1 Concept of Corporate Social Responsibility

Schooley [10] describes corporate social responsibility as a type of business self-regulation with the aim of being socially accountable. There is no one right way that firms can practice corporate social responsibility. However, many corporate social responsibility initiatives strive to positively contribute to the public, the economy or the environment. In today's socially conscious environment, employees and customers place a premium on working for and spending their money with businesses that prioritize corporate social responsibility. Rasche et al [11] state that corporate social responsibility is the integration of an enterprise's social, ethical, environmental, and philanthropic responsibilities towards society into its processes, operations, and core business strategy in cooperation with relevant stakeholders.

Simona & Veronika [12] assert that corporate social responsibility could influence existing key business metrics. On the other hand, the concept and its application could be affected by firm characteristics, such as firm size, age, composition of management, or firm financial performance. Corporate social responsibility expenditures could cause additional costs for the firms and divert funds from more profitable potential investments. It may lead to a temporary decline in business performance. On the other hand, stakeholder theory suggests that firms should participate in good relationships with all stakeholders and that corporate social responsibility expenditures could accelerate financial performance because of indirect benefits.

2.1.2 Concept of Return on Equity

Calamar [6] describes return on equity as the amount of earnings generated by each dollar of equity invested in a business. It is a measure of how much profit a firm can generate on the equity capital investors and deployed in the business. It can be used over time to evaluate changes in a firm's financial situation. The higher the return on equity, the better, as high return on equity firm, all other things being equal, will produce more earnings and free cash flow that can be used to support a higher level of growth, keep the firm

financially strong, and provide cash returns to shareholders. Fernando [13] also asserts that return on equity is a measure of financial performance of firms calculated by dividing net income by shareholders' equity. Since shareholders' equity is equal to a firm's assets minus its debt, return on equity is considered as equivalent to return on net assets. Thus it is a measure of the profitability of a firm in relation to shareholders' equity. It essentially measures the rate of return that the owners of ordinary shares of a firm receive on their shareholdings. Return on equity signifies how good a firm is in generating returns on the investment it received from its shareholders.

Sabrin et al [14] asserts that profitability ratios are measures that are widely used for return on assets and return on equity. Profitability ratio measured by return on assets and return on equity reflects the attractiveness of the business to the investors. While return on assets measures the ability of firms as a whole to make profit with the overall assets available within the firm, return on equity measures the ability of the firm to generate profits with total owners' capital employed. Calamar [6] states that return on equity is calculated as the company's annual net income after taxes (profit for the year), divided by the average shareholder equity. Profit for the year or net income is the amount of profit that a firm has made after all expenses and taxes are deducted from revenues.

$$\text{Return on Equity} = \frac{\text{Profit for the Year}}{\text{Average Shareholders' Equity Net}}$$

2.1.3 Concept of Return on Assets

Hargrave [15] defines return on assets as a profitability ratio that indicates how profitable a company is relative to its total assets. Return on assets gives a manager, investor, or analyst an idea as to how efficiently a firm's management is at using its assets to generate earnings for the firm. Haniffa and Huduib [16] also confirm return on assets as an indicator of how profitable a firm is relative to its total assets. Return on assets gives an idea as to how efficiently management is using its total assets to generate earnings for the firm. It is calculated by dividing a firm's annual earnings by its total assets. Return on assets is usually stated as a percentage and the measurement is such that the higher the return on assets, the more effective Management uses the firm's total assets to the advantage of the shareholders.

Siminica, Circiumaru and Simion [17] opine that the rising pressure exercised by shareholders and the limited funds available make the firms to search the best ways to increase the efficiency of the firm assets, in order to maintain competitiveness. To achieve this goal, the firms need to properly assess the return on assets. On the other hand, Nixon and Stoeber [18] assert that profitability measure is the ultimate test of Managements operating effectiveness and success of a firm. Return on asset is one of the best measurements of efficiency in order to assess the firm's performance. It had been widely used as a measurement of profitability and it reflects the ability of Management to generate income on a given amount of total assets. It is one of the popular profitability measures, which is a ratio between earnings after tax and total assets.

Clarkson et al [19] equally state that the most used accounting measures of financial performance is Return of Assets. Return on assets tells you what earnings were generated from invested capital and in public companies it can vary substantially and will be highly dependent on the industry. This is why when using return on assets as a comparative measure, it is best to compare it against a company's previous return on assets numbers or the return on assets of a similar company.

$$\text{Return on Assets} = \frac{\text{Profit for the Year}}{\text{Average Firms' Total Assets}}$$

2.1.4 Concept of Earnings per Share

Arma [20] states that earning per share is a market prospect ratio that measures the amount of net income earned per share of shares outstanding. It is the amount of money each share of stock would receive if all of the profits made by a firm were distributed to the outstanding shares at the end of the year. Earnings per share are a term that is of much importance to investors and people who trade in the stock market. The higher the earnings per share of a firm, the better is the profitability of the firm. While calculating the earnings per share, it is advisable to use the weighted ratio, as the number of shares outstanding can change over time.

Sumangala [21] suggest that earnings per share are an important variable affecting the market value of equity share. Once a successful firm starts earning attractive sum and building up reserves, the shares of the firm will have more and more demand which will result in increase in market

value of the equity. Sharma [8] also affirm this when he argues that earning per share is the strongest determinant of the market value in a constructive track. This is because investors take earnings per shares variable into account before investing in any firm. Fernando [13] asserts that earnings per share are calculated as a firm's profit for the year divided by the outstanding shares of its ordinary shares. The resulting number serves as an indicator of a firm's profitability. It is common for a firm to report earnings per share that is adjusted for extraordinary items and potential share dilution. Jatoi et al, [22] also affirm that earnings per share are usually derived by dividing earning (after deduction of tax, interest, dividend and depreciation) with total number of outstanding shares.

2.2 Theoretical Framework

2.2.1 Stakeholders' Theory

This study was premised on Stakeholders' Theory propounded by Edward Freeman in 1984. The theory state the contrary to agency theory that view organizations as a system of relationship between shareholders and management, stakeholders' theory view organizations as a system that accommodates not only the interest of the owners but also the interests of other groups within the environment which the organization operates. The theory argued that since organizations cannot operate and exist in isolation without relating with its immediate environment then the interest of other stakeholders like employees, customers, suppliers and host community might be considered in the process of strategic decision making. Therefore, the main argument of the theory, as pointed by Lawal [23], is that organizations should not only maximize the returns of shareholders alone, but also the expectations of other stakeholders should be considered. Finally, the theory argued that for a firm to achieve effective performance in the market, cordial relationship must exist between the firm and the stakeholders and the firm's board should be large and diversified enough to accommodate the interest of other stakeholders. The stakeholder's theory proposed an increased level of environmental awareness which creates the need for companies to extend their corporate planning to include the nontraditional stakeholders like the regulatory adversarial groups in order to adapt to changing social demands as in [24]. The main concern of the stakeholders' theory in environmental accounting is to address the

environment cost elements, valuation and its inclusion in the financial statements.

2.3 Empirical Review

2.3.1 Corporate Social Responsibility and Return on Equity

Onyekachi, Ihendinihu and Azubike [25] analyzed the effect of environmental costs accounting and the earnings of Oil firms in Nigeria. The period covered by the study was 2008 to 2017. *Ex - post facto* research design was adopted and secondary data were obtained from financial reports of the five (5) oil and gas firms selected for the study. Ordinary least square regression model was used to analyze the data collected for the study. Results disclose that firms' investments on the environment associates significantly with firm earnings. It was recommended in view of this that all business units in Nigeria should keep pace with contemporary financial reporting issues by engaging in, and adequately reporting their investments in the replenishment of the planet as that will promote their organizational image and business. It was also observed that a gap exists in the reporting of environmental activities of firms as a result of unavailability of the global accounting standard to ensure accountability and harmonization of environmental reports. In the light of this observation, the study recommended that International Accounting Standards Board should deliver a dedicated standard to fill this gap and to enable the accounting profession to effectively contribute its quota towards a sustainable planet.

Using Pearson's Product Moment Correlation Co-efficient Basse, Sunday and Okon [26] conducted a study to examine the impact of environmental accounting and reporting on organizational performance of some selected oil and gas firms operating in Niger Delta region of Nigeria. Result of the analysis reveals that environmental cost has statistically significant relationship with firm's profitability. On the strength of this analysis, it was concluded that firms should adopt a uniform method of reporting and disclosed environmental issues for the purpose of control and measurement of performance and that accounting standards should be published locally and internationally and reviewed continually to ensure dynamism and compliance to meet environmental and situational needs.

Using Correlation and Regression Analysis Amole, Awolaja and Adebisi [27] examined

corporate social responsibility and profitability of Nigerian Banks using First Bank of Nigeria Plc evidence. Secondary data were obtained from the annual published report of the selected bank for the period of 2001-2010 for the study. Result of the analysis indicates that positive relationship exists between banks' corporate social responsibility activities and the banks' profitability. Banks were advised to demonstrate high level of commitment to corporate social responsibility based on stakeholders' theory in order to enhance their profitability in the long run.

2.3.2 Corporate Social Responsibility and Return on Assets

Onuora and Christian [28] investigated the effect of environmental cost on financial performance of oil and gas companies in Nigeria for 2017 and 2018. A sample of seven (7) oil and gas firms listed on Nigeria Stock Exchange was used. Secondary data were collected from the sampled firm and analyzed using ordinary least square regression analysis. Findings from analysis suggest that environmental costs have no significant effect on gross profit margin and environmental cost has significant effect on returned on capital employed. It was recommended that management of oil and gas companies should continue to engage in incurring environmental costs accordingly as well, since they do not have any significant effect on financial performance.

Manrique and Ballester [29] sampled 2982 large firms from developed and developing countries around the world and examined the effect of corporate environmental performance on corporate financial performance during a global financial crisis. The dependent variables were corporate financial performance such as return on assets and Tobin's Q ratio while the independent variable was corporate environmental performance. Control variables are cash flow, current ratio, leverage, size, research and development, capital, growth, market share. Secondary data were obtained from the selected firms covering the period from 2008 to 2015. Petersen correlation analysis was used to analyze the collected data, adjusting the standard errors for clustering by both firm and year. Results indicate that the adoption of environmental practices significantly and positively affects the corporate financial performance in developed and developing countries. However, this effect is stronger for firms located in developing countries than those located in developed countries.

Uadiale and Fagbemi [30] sampled 40 listed

firms in Nigeria and examined the relationship between corporate social responsibility and financial performance of the firms. Return on equity and return on assets were used as the dependent variables and measures of financial performance. Secondary data was collected from the published annual reports of the sampled firms and analyzed using Pearson Product Moment Correlation Analysis. Finding from the data analysis suggests that corporate social responsibility has a positive and significant relationship with return on equity and return on asset. Based on these findings, the study recommended that corporate entities in Nigeria should invest in corporate social responsibility activities in its ramification in order to boast their image/reputation and thus increase returns to stakeholders.

Using simple regression analysis, Uwuigbe et al [31] examined the corporate social responsibility disclosures by environmentally visible corporation in Nigeria from 2006 to 2010. A sample of 30 firm listed in Nigerian Stock Exchange was selected for the study. Also, the study critically developed and utilized a disclosure index to measure the extent of corporate social responsibility disclosure made by firms in their corporate annual reports during the period. Findings from data analysis disclose that significant association exists between the corporate environmental visibility and the level of corporate social responsibility disclosure among listed firms in Nigeria. The study equally observed that environmentally visible firms disclose more environmental information in their annual reports in order to legitimize their operations and to avoid political costs arising from public scrutiny.

2.3.3 Corporate Social Responsibility and Earnings per Share

Agbo, Ohaegbu and Akubuilu [32] analyzed the effect of environmental cost on organizational performance of Nigerian Brewery Plc from 2011 to 2015. The independent variables of the study are donations, medical expenses, trainings, recruitment & canteen expenses while the dependent variable was return on asset. Secondary data were obtained from the annual report of the brewery covering the five years period of the study. Multiple regressions were applied on the secondary data collected. Results suggest that donation and medical expenses are negatively related ($r = -0.068$ and $r = -0.072$) respectively with return on assets. Trainings, recruitment and canteen expenses and

the return on assets are positively related ($r = 0.068$).

Using judgmental sampling technique, Nwabueze [33] sampled 5 out of a population of 22 manufacturing firms listed on the Nigerian Stock Exchange and analyzed the influence of environmental costs on the performance of manufacturing firms in Nigeria. The proxies for firm performance are return of capital employed, net profit margin, earning per share and dividend per share. Secondary data were sourced from the published annual financial reports of the selected firms for a period of 2005 to 2014, and analyzed using Ordinary Least Square (OLS) regression method. Findings show that environmental costs have a negative but insignificant effect on ROCE and EPS, and positive but insignificant effect on NPM and DPS. The study recommended 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.

Beredugo and Mefor [34] applied Pearson Correlation Coefficient and Ordinary Least Square Regression Analysis on secondary data collected from some sampled firms to analyze the impact of environmental accounting and reporting on sustainable development in Nigeria. Result of analysis suggests that significant relationship exists between environmental accounting and reporting and sustainable development. Result further suggests that environmental accounting encourage organizations to track their GHG emissions and other environmental data against reduction targets and there are consequences for noncompliance with environmental accounting and reporting. The study on the basis of these findings recommended that acceptable standard such as ISAR be acknowledged and Graphical indicators be adopted illustrating to users on timely basis whether the organization is performing above, below or in line with the targets so that corrective actions can be taken as needed to successfully execute environmental sustainable initiatives.

Of the ten (10) empirical studies reviewed, nine (9) of the studies were conducted in Nigeria while the remaining one was conducted outside the country. This implies that the presence of many oil

and gas firms, breweries and cement factories which constitute environmental hazards in Nigeria are attracting researchers to conduct studies in the area of environmental accounting. However, none of the studies covered the period of 2018 and 2019, thus creating time gap that needs to be filled. In addition to this time gap, three (3) of the studies was conducted in oil and gas sector of the economy thus creating sectorial research gap. These research gaps have prompted the present study to investigate the relationship between environmental cost and financial performance of oil and gas firms in Nigeria from 2010 to 2019.

3. Methodology

The study is an *ex-post facto* research which provides an empirical solution to research problems, by using data which are already in existence. Secondary data were collected from published annual financial statements of selected oil and gas firms covering the period of 2010 to 2019. The population of the study comprised of the entire eleven (11) oil and gas firms listed on the Nigeria Stock Exchange during the period. Out of these, five (5) firms were selected for the study. Disclosure of corporate social responsibility expenses in the financial statement was the criteria in selecting the firms. Corporate social

responsibility expenses was used as measure for the independent variable and proxy for environmental costs whereas, return on equity, return on assets and earnings per share were the dependent variables and measures for financial performance.

The following model was developed by the author and it is in line with the variables of the study

$$CSRE = f(\beta_0 + \beta_1ROE + \beta_2ROA + \beta_3EPS) + \varepsilon$$

Where:

f = Function of

CSRE = Corporate Social Responsibility Expenses

ROE = Return on Equity

ROA = Return on Assets

EPS = Earnings per Share

β = Beta

ε = error terms

4. Data Analysis

The raw data collected from the selected oil and gas firms were analyzed using descriptive statistics and correlation analysis. The results are presented in tables one and two below.

Table 1. Descriptive Statistics.

	CSRE	ROA	ROE	EPS
Mean	38226.73	0.015400	0.057800	4.336200
Median	3750.000	0.020000	0.125000	1.575000
Maximum	311585.8	0.110000	0.630000	43.58000
Minimum	1.000000	-0.340000	-2.650000	-14.43000
Std. Dev.	72934.50	0.076163	0.445147	8.824504
Skewness	2.171292	-3.029577	-4.636281	2.087725
Kurtosis	7.061168	13.75724	28.81755	9.788002
Jarque-Bera Probability	73.64816 0.000000	317.5656 0.000000	1567.763 0.000000	132.3153 0.000000
Sum	1911336.	0.770000	2.890000	216.8100
Sum Sq. Dev.	2.61E+11	0.284242	9.709658	3815.722
Observations	50	50	50	50

SOURCE: E-View 8 Output.

Table 1 presents the descriptive statistics of the study. Results from the table indicate that the mean value of corporate social responsibility expenses (CSRE), return on assets (ROA), return on equity (ROE) and earnings per share (EPS) are 38226.73, 0.015400, 0.057800 and 4.336200 respectively while the standard deviations are 72934.50, 0.076163, 0.445147 and 8.824504. These results

suggest that CSRE and EPS are highly volatile while the volatility of ROA and ROE are moderate during the period. Also the Jarque-Bera Statistics, a critical statistical tool for testing data distribution indicates that all the data set are normally distributed. This is evidenced from the significance value of the variables which are all significant at 5% level of significance.

Table 2. Pearson's Product Moment Correlation Analysis.

		CSR	ROA	ROE	EPS
CSRE	Pearson Correlation	1	-.146	.031	.125
	Sig. (2-tailed)		.311	.828	.389
	N	50	50	50	50
ROA	Pearson Correlation	-.146	1	.860	.527
	Sig. (2-tailed)	.311		.000	.000
	N	50	50	50	50
ROE	Pearson Correlation	.031	.860	1	.552
	Sig. (2-tailed)	.828	.000		.000
	N	50	50	50	50
EPS	Pearson Correlation	.125	.527	.552	1
	Sig. (2-tailed)	.389	.000	.000	
	N	50	50	50	50

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

SOURCE: E-View 8 Output.

Test of Hypotheses

Decision Rule in Testing Hypotheses:

- The hypothesis is restated in both null and alternative forms.
- The level of significance (α) = 0.05.
- The result in the table is compared with the level of significance (0.05).
- The null hypothesis is either rejected or accepted based on its level of significance.

Hypothesis One

H_0 : There is no significant relationship between corporate social responsibility expenses and return on equity of oil and gas firms in Nigeria.

H_1 : There is significant relationship between corporate social responsibility expenses and return on equity of oil and gas firms in Nigeria.

Table two indicates that the significant value of return on equity (ROE) is not significant at 0.05 level of significance ($0.828 > 0.05$). Based on this, we accept the null hypothesis which states that there is no significant relationship between corporate social responsibility expenses and return on equity of oil and gas firms in Nigeria.

Hypothesis Two

H_0 : There is no significant relationship between corporate social responsibility expenses and return on assets of oil and gas firms in Nigeria.

H_1 : There is significant relationship between corporate social responsibility expenses and return on assets of oil and gas firms in Nigeria.

The correlation table also shows that the significant value of return on assets (ROA) is not significant at 0.05 level of significance ($0.311 > 0.05$). In view of this, we accept the null hypothesis which states that there is no significant relationship between corporate social

responsibility expenses and return on assets of oil and gas firms in Nigeria.

Hypothesis Three

H_0 : There is no significant relationship between corporate social responsibility expenses and earnings per share of oil and gas firms in Nigeria.

H_1 : There is significant relationship between corporate social responsibility expenses and earnings per share of oil and gas firms in Nigeria.

The correlation table further disclose that the significant value of earnings per share (EPS) is not significant at 0.05 level of significance ($0.389 > 0.05$). In the light of this, we accept the null hypothesis which states that there is no significant relationship between corporate social responsibility expenses and earnings per share of oil and gas firms in Nigeria.

5. Discussions of Findings

Discussion of Result One: From the correlation analysis in table two, it can be observed that the correlation coefficient and the significant value of return on assets are -0.146 and 0.311 respectively. Based on this it can be stated that the relationship between return on assets and corporate social responsibility expenses of oil and gas firms listed on the Nigeria Stock Exchange during the period is negatively weak and insignificant. This study is in contrast with Onuorah and Christian [28] who found that corporate social responsibility has a positive and significant relationship with return on capital employed. It also contrast Uadiale and Fegbemi [30] who found that corporate social responsibility has a positive and significant relationship with return on equity and return on asset. The result, however, is in agreement with Agbo et al [32] who found that donation and

medical expenses are negatively related with return on assets.

Discussion of Result Two: From the correlation table two also, it can be ascertained that the correlation coefficient and the significant value of return on equity are -0.031 and 0.828 respectively. Therefore, we state that the relationship between return on equity and corporate social responsibility expenses of oil and gas firms listed on the Nigeria Stock Exchange during the period under study is positively weak and insignificant. This result is in line with Uadiale & Fagbemi [30] who found that corporate social responsibility has a positive relationship with return on equity and return on asset. Amole, Awolaja and Adebisi [27] who suggest that banks corporate social responsibility associates with banks profitability.

Discussion of Result Three: The table equally reveals that the correlation coefficient and the significant value of earnings per share are 0.125 and 0.389 respectively. In the light of this result, we can say that the relationship between earnings per share and corporate social responsibility expenses of oil and gas firms listed on the Nigeria Stock Exchange during the period under study positively weak and insignificant. This result is consistent with Nwabueze [33] who found that environmental costs have positive but insignificant effect on net profit margin and dividend per share. Onyekachi et al [25] who found that firms investments on the environment associates significantly with firm earnings. Manrique and Ballester [29], also found that environmental practices significantly and positively affect corporate financial performance in developed and developing countries.

6. Conclusion and Recommendations

This study analyzed the relationship between environmental costs and financial performance of oil and gas firms in Nigeria. A total of 11 oil and gas firms were listed on the Nigeria Stock

Exchange during the period from which a sample of 5 oil and gas firms was selected using disclosure of corporate social responsibility expenses in the audited annual financial statement as a criterion for the selection. Time series data of 2010 to 2019 were obtained from the sampled firms and analyzed using descriptive statistics and Pearson's Product Moment Correlation Matrix. On the strength of the findings from the correlation analysis, we conclude that there is positively weak and insignificant relationship between return on equity and earnings per share on one hand and corporate social responsibility expenses on the other hand. This study equally concludes that there is a negatively weak and insignificant relationship between return on assets and corporate social responsibility expenses of the listed oil and gas firms in the country.

In line with the findings of the study, we recommend the followings for oil and gas firms operating in the country:

- i. The managers should avoid incessant investment in assets and invest only on those assets, short or long term that will enable them achieve cardinal corporate objective of profit and wealth maximization for the firm owners. Thus, firm managers should review their firms' budgeted production capability and thereafter invest only in those assets that will assist the firms attain its capacity.
- ii. The firm managers should use more of equity financing in their capital structure. This will increase its return on equity thereby boasting the firms' corporate social responsibility performance.
- iii. The firm should repurchase some of its shares floating around the Stock Exchange Market. In order to increase their earnings per share and thus enhance corporate social responsibility performance of the firms.

Appendix

Table 3. Raw data from the selected firms.

FIRM	YEAR	PROFIT FOR	TOTAL	TOTAL	ROA	ROE	EPS	CSR
		THE YEAR	ASSETS	EQUITY				N(000)
		N(000)	N(000)	N(000)				
MRS	2010	41,080	46,330,313	18,639,866	0.00	0.00	7.27	-
	2011	615,624	72,700,238	18,988,685	0.01	0.03	2.42	1,200
	2012	205,121	55,595,688	19,054,010	0.00	0.01	0.81	2,200
	2013	634,418	65,694,626	19,629,147	0.01	0.03	2.50	-

FIRM	YEAR	PROFIT FOR	TOTAL	TOTAL	ROA	ROE	EPS	CSR
		THE YEAR	ASSETS	EQUITY				N(000)
		N(000)	N(000)	N(000)				
OANDO	2014	746,404	57,846,626	20,218,121	0.01	0.04	2.94	2,290
	2015	935,625	66,893,741	20,977,324	0.01	0.04	3.68	5,374
	2016	1,465,905	81,364,815	22,169,841	0.02	0.07	5.77	768
	2017	1,385,056	62,190,318	23,109,497	0.02	0.06	4.54	9,690
	2018	(1,264,941)	54,283,202	20,720,698	(0.02)	(0.06)	(4.15)	4,179
	2019	(1,704,010)	44,209,648	19,107,616	(0.04)	(0.09)	(5.59)	1,710
	2010	14,374,966	324,022,700	51,225,000	0.04	0.28	8.29	-
	2011	3,446,643	400,864,761	85,591,771	0.01	0.04	1.61	-
	2012	11,523,371	515,063,788	75,221,070	0.02	0.15	2.01	-
	2013	10,893,153	556,707,119	71,872,418	0.02	0.15	(0.75)	113,512
TOTAL	2014	(93,636,502)	882,253,671	162,328,636	(0.11)	(0.58)	(1.55)	162,772
	2015	(31,197,703)	946,321,309	55,998,437	(0.03)	(0.56)	(4.23)	95,840
	2016	(25,387,914)	99,544,976	101,639,609	(0.26)	(0.25)	0.30	146,253
	2017	13,469,219	1,040,175,904	99,587,920	0.01	0.14	1.13	253,784
	2018	12,299,056	1,075,110,435	76,848,651	0.01	0.16	0.40	311,586
	2019	18,959,540	1,079,942,062	67,743,149	0.02	0.28	1.07	224,690
	2010	5,436,638	54,601,360	8,929,188	0.10	0.61	16.01	79,216
	2011	3,813,202	58,719,811	10,026,215	0.06	0.38	11.23	80,921
	2012	4,670,917	76,067,065	76,067,065	0.06	0.06	13.76	132,292
	2013	4,800,601	79,331,587	13,240,785	0.06	0.36	15.71	132,123
ETERNA	2014	5,290,458	95,512,428	13,929,778	0.06	0.38	13.03	-
	2015	4,047,051	83,653,555	16,242,481	0.05	0.25	11.92	54,729
	2016	14,797,096	136,928,160	23,570,097	0.11	0.63	43.58	-
	2017	8,019,298	107,981,873	26,225,551	0.07	0.31	23.62	-
	2018	7,960,893	132,520,783	30,730,888	0.06	0.26	23.45	4,000
	2019	2,278,979	133,787,731	28,319,784	0.02	0.08	6.71	4,000
	2010	722,751	9,278,500	4,623,820	0.08	0.16	0.47	-
	2011	1,211,159	14,711,813	5,446,912	0.08	0.22	0.80	2,870
	2012	946,356	33,212,850	6,397,105	0.03	0.15	0.73	2,500
	2013	703,196	18,253,144	7,110,709	0.04	0.10	0.54	3,500
FORTE	2014	1,289,566	18,566,875	8,420,172	0.07	0.15	0.99	-
	2015	1,278,073	28,565,409	9,684,307	0.04	0.13	0.96	3,400
	2016	1,477,559	31,690,081	10,828,227	0.05	0.14	1.13	3,324
	2017	2,001,902	48,045,732	12,417,042	0.04	0.16	1.54	15,167
	2018	1,989,899	53,145,208	12,878,205	0.04	0.15	0.77	4,850
	2019	111,440	28,533,386	12,407,879	0.00	0.01	(0.11)	8,608
	2010	(2,744,309)	57,850,632	25,378,780	(0.05)	(0.11)	(2.54)	15,956
	2011	(15,584,459)	45,225,938	5,889,294	(0.34)	(2.65)	(14.43)	-
	2012	1,007,507	42,512,938	7,582,842	0.02	0.13	0.93	5,942
	2013	5,004,397	104,678,000	42,349,307	0.05	0.12	4.32	2,001
2014	4,456,617	139,238,298	44,334,669	0.03	0.10	2.20	4,489	
2015	5,794,055	121,757,956	46,280,743	0.05	0.13	4.11	10,136	
2016	2,796,830	140,756,492	43,333,577	0.02	0.06	2.27	5,100	
2017	5,073,892	148,163,530	45,746,268	0.03	0.11	0.50	350	
2018	5,259,721	60,729,733	13,748,970	0.09	0.38	0.26	-	
2019	(190,844)	53,641,036	17,507,906	(0.00)	(0.01)	3.88	-	

iv. Source: Annual Reports and Financial Statement of the Firms.

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