# ENVIRONMENTAL RESPONSIBILITY REPORTING AND FINANCIAL PERFORMANCE OF QUOTED OIL AND GAS COMPANIES IN NIGERIA Lyndon M. Etale¹ and Sunday Otuya²

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ABSTRACT: This study examined the relationship between environmental responsibility reporting and financial performance of quoted oil and gas companies in Nigeria. The study used secondary data obtained from the annual reports of 13 oil and gas companies quoted on the floor of the Nigeria Stock Exchange (NSE) for the years 2012-2017. The study adopted the ordinary least square (OLS) regression method as the basic technique of data analysis. The study found significant positive relationship between financial performance and environmental responsibility reporting in the oil and gas sector of Nigeria. However, the findings of the study indicate that environmental responsibility reporting in Nigeria is still developing and that organizations operating in the oil and gas sector report very little information about the impact of their operations on the environment. This finding is not quite surprising as most multinational oil and gas companies are not quoted on the NSE, as such were not included in the study. The study recommended, amongst others, that the relevant authorities in the country formulate regulatory policies for the oil and gas sector organizations to abide by in order to include more information on environmental responsibility practices in their annual reports.

**KEYWORDS**: Environmental Responsibility Reporting, Financial Performance, Return on Capital Employed, Assets Turnover.

# INTRODUCTION

Environmental responsibility reporting issues have captured the interest of the business community and the general public in recent times. As concerns regarding environmentally friendly practices increase, corporate organizations are facing the challenge of disseminating information about environmental issues in their annual reports. Environmental responsibility is concerned with the awareness that action taken in the present has an effect on the options available in the future hence if resources are utilized in the present then they are no longer available for use in the future, and this is of particular concern if the resources are finite in quantity. Environmental responsibility reporting is the process of communicating the social and environmental effects of an organization's economic actions to particular interest groups and to society at large.

The environmental problems in the Niger Delta region of Nigeria could be better managed if the operators in the oil and gas sector provide enough information about the effects of their economic actions and the environmental friendly policies so far adopted and implemented to their host communities and other stakeholders instead of the total neglect and impoverishment the region has suffered. The damaging effect of industrial activities on the environment is enormous in Niger Delta region of Nigeria where there is huge presence of oil exploration and production. It is sad to observe that environmental concerns rarely constitute a part of corporate

plans by these oil companies. Donwa (2011) opines that environmental degradation arising from petroleum production activities greatly influence host community agitation and associated violence by militant groups. This suggests that policies put in place to guide against environmental depletion arising from oil and exploration and production are inefficient.

The political upheaval and agitations in the Niger Delta Region of Nigeria cannot be wished away until there is a policy to incorporate environmental concerns into the nation's oil and gas industry planning, management and decision making. Ngwankwe (2009) noted that the increasing external pressures from many stakeholders such as financial institutions, socially responsible investors, government, and community lobby groups (i.e. members of host communities) among others, now make companies to have more interest in environmental accountability issues. Nevertheless, reporting corporate environmental performance is still in its developing stage in third world countries like Nigeria in spite of the availability of a number of methodologies and practices (Ite, 2004) and (Amaeshi, Adi, Ogbechie & Amao, 2006).

In general, the expectation is that firms that provide more disclosures on environmental responsibility practices in their annual reports would also experience or enjoy improved financial performance. It is also believed that large firms with better financial performance have the resources to provide more environmental responsibility disclosures than smaller firms. Several studies have been conducted by researchers at the international scene to investigate the link between environmental responsibility reporting and financial performance. However, the debate on the causality relationship between environmental responsibility reporting and financial performance cannot be exhausted as previous research findings have not produced consistent results. Alshehli, Nobanee and Khare (2018) corroborated the lack of consensus in the study findings of past researchers on the environmental sustainability disclosure-financial performance nexus. Their investigation was a systematic survey and content analysis of previous empirical literature on the subject involving 132 articles, and they found that 78% of the research findings revealed positive link between performance and environmental sustainability reporting. Past empirical literature revealed mixed findings; ranging from positive to negative or no relationship at all (Malarvizhi & Matta, 2016; and Aggarwal, 2013a). It is based on the obvious research gap that this study was aimed at examining the link between environmental responsibility reporting and financial performance of quoted oil and gas companies in Nigeria. The variables identified for this investigation are environmental responsibility reporting index and financial performance (proxy by return on capital employed and assets turnover). The specific objectives were to ascertain the extent to which return on capital employed impacted on environmental responsibility reporting and determine the degree to which assets turnover influenced environmental responsibility reporting.

The rest of the paper is organized into four sections as follows: section two which comes after this introduction will cover the review of past empirical literature on the subject. Section three will dwell on the study methodology, while the results of data analysis and discussion of findings will be presented in section four. Finally, the conclusion of the study and recommendations will be the subject of section five.

# REVIEW OF PAST EMPIRICAL LITERATURE

This section covers the review of some previous research studies on the field in different geographic regions to provide the justification for analyzing the relationship between

environmental responsibility reporting and financial performance in the oil and gas sector of Nigeria. The review on continental basis is presented under the following subheadings.

# **Studies in Europe**

Lassala, Apetrei & Sapena (2017) examined the impact of social performance (that is sustainability issues) on financial performance in Spain. The variables used include social performance, ROE, ROA (proxy for financial performance), and industry sector as control variable. Social performance consists of the set of principles and processes which brings about sustainable investments such as internal behavior, customer relations or philanthropic program. The study employed the fuzzy-set qualitative comparative analysis (fsQCA) technique in analyzing data The results of the study suggested that social performance affected financial performance. However they recommended further research on the social performance-financial performance nexus as the results of previous studies are inconclusive. In UK, Adeneye (2015) examined the impact of CSR on firm performance using a sample of 500 firms. The study employed descriptive statistics, regression and correlation techniques for data analysis. He concluded with mixed results between CSR and financial performance: significant positive association between CSR, market to book value and ROCE; while no relationship was found between CSR and firm size. He recommended that UK firms should improve on CSR performance to gain competitive advantage.

#### **Studies in Asia**

Malarvizhi & Matta (2016) investigated the environmental disclosure-firm performance nexus in India based on content analysis of 2013-14 data from the annual reports of 85 sampled chemical, energy and metal companies listed on the Bombay Stock Exchange. Environmental disclosure index (EDI) used as dependent variable was regressed against return on capital employed, return on assets, net profit margin, and earnings per share (proxy for firm performance), using simple and multiple correlation techniques. The results revealed no significant relationship between the study variables. Also, Aggarwal (2013b) examined the impact of components of sustainability performance on financial performance of listed companies in India for two accounting-year period, 2010/11 - 2011/12. Sustainability practices were represented by a firm's investments towards the community, employees, environment and government. Five measures of financial performance were captured in the variables, namely: ROCE; ROA; ROE; profit before tax; and total assets growth. The sample of 20 non-finance companies listed on the National Stock Exchange of India represents different sectors of the economy, including IT, Telecom, hospitality, manufacturing, agro-allied and food, construction, oil, gas and mining. Data obtained from the financial statements of selected companies were analyzed using descriptive statistics and multiple regression tests based on IBM SPSS software. The overall results showed that sustainability performance had no influence on financial performance. The study observed that the results were mixed and inconclusive, and therefore recommended further research on the subject.

Cortez & Cudia (2011) examined the impact of environmental sustainability practices disclosures on financial performance in Japan. The study used data generated from the annual reports of sampled electronics companies listed on the Tokyo Stock Exchange, covering nine years period from 2001 – 2009. These 10 global electronic giants publish annual sustainability reports a year after the annual financial reports in line with a format and classification code prescribed by the Japanese Ministry of Education (MOE). The study adopted content analysis method following a theoretical review and literature survey of past empirical studies. The

findings of the study indicated that environmental innovations impacted positively on revenue generation and minimize risks; and in the face of declining global demand for electronic products the financial conditions of these companies would have worsened had they not engaged in environmental sustainability practices. In another study in Japan, Nakao et al (2005) examined the effect of corporate environmental friendly practices on financial performance using data from 1999 to 2003. The study employed the Granger Causality test methodology to analysis time series panel data obtained from their sample of 278 listed corporations in Japan. The results of the study revealed that corporate environmental activities had a positive effect on financial performance.

In Singapore, Teoh et al (1996) investigated the relationship between environmental disclosures and financial performance using a sample of 60 companies drawn from the industrial sector identified as potentially polluting the environment. Data was collected covering a period of seven years (1990-1996) based on content analysis of the annual reports of the selected companies. Eight accounting ratios were used as proxy for financial performance which among others includes ROA, ROE, cash basis return on assets, and cash basis return on equity. Independent t-test was employed to analyze data. The results of their study showed that a positive relationship existed between environmental disclosures and financial performance. Based on their findings, they recommended that companies in Singapore be encouraged to increase the content of their environmental disclosure in the annual financial statements.

# Studies in other parts of Africa

Worae & Ngwakwe (2017) examined the relationship between environmental responsibility and financial performance in South Africa using time series panel data obtained from 14 manufacturing and mining companies listed on the Johannesburg Stock Exchange for the period 2008 to 2014. They performed cross-sectional dependence tests based on the Breusch-Pagan LM and Pesaran CD tests in addition to the Gcause2 Baum's Granger causality test. Financial performance measures adopted include ROA, ROE, return on sales and market value of equity regressed against emissions intensity and energy usage intensity (proxy for environmental responsibility). The results indicated mixed findings among the variables. Also, Nyirenda, Ngwakwe & Ambe (2013) evaluated the impact of environmental management practices on financial performance in South Africa using a Johannesburg Stock Exchange listed mining company as case study. Return on equity proxy for financial performance was regressed against elements of environmental management practices such as carbon reduction, energy efficiency, and water usage. Multiple regression statistics were used as methods of data analysis. The study found no significant relationship between environmental management practices and financial performance. They concluded that the mining company in question adopted environmental management practices in a desire to abide by environmental regulations and its moral obligation to mitigate the impact of climate change.

#### Studies in Nigeria

Nnamani, Onyekwelu & Ugwu (2017) investigated the effect of sustainability accounting on financial performance using a sample of 3 listed brewery companies in Nigeria. The study identified sustainability accounting as the investments on people (social), and the environment, whereas, economic performance (or financial performance) was based on profits – ROA and ROE. They used the ordinary linear regression tools for the analysis of secondary data collected for the period 2010 to 2014. The study found that sustainability accounting had significant

positive effect on financial performance. Based on their findings the study recommended that firms in the brewery industry invest more of their earnings on sustainability reporting practices. Owolabi, Taleatu, Adetula & Uwaigbe (2016) in their study examined the extent of sustainability reporting by Lafarge Africa Plc, a high environmental-impact company operating in the building materials and quarrying sector; also winner of both the Environmental Sustainability and Stakeholder Engagement in Social Enterprise Report Awards (SERAs) in 2015. Data sourced from the 2014 annual report of the company were examined through content analysis using the Global Reporting Initiative (GRI) guidelines as basis of assessment. The study revealed low sustainability reporting practice by the company (that is, no disclosures on human right issues, 3% environmental disclosures, and 30% disclosure based on 169 indicators). They recommended the regulation of sustainability reporting practices among firms in the country. Also, Jibril et al (2016) examined the relationship between CSR and financial performance of 12 listed banks in Nigeria covering the period 2008 to 2013. The independent variable CSR was represented by aggregate amount spent on CSR practices by banks, while financial performance was represented by ROE and ROA. Data obtained from the annual reports of selected banks were analyzed using multiple regression techniques based on windows SPSS statistical software. The study found that CSR had significant positive impact on financial performance.

Umoren, Isiavwe-Ogbari, Alolagbe (2016) investigated CSR disclosure practices among quoted companies in Nigeria. Data covering two years period (2013-2014) was collected from a sample of 45 companies (representing 8 sectors) among 188 listed on the NSE based the availability of data on the study variables. The exploratory variables include return on equity and firm size (total assets). The study employed descriptive statistics and correlation regression as methods of data analysis. The results revealed that firm size and the profile of audit firm influenced CSR disclosures, but return on equity had no impact on CSR disclosures. The study recommended mandatory CSR reporting framework for listed companies in Nigeria. Onyali, Okafor & Onodi (2015) also investigated the effectiveness of Triple Bottom Line (TBL) disclosure practices of corporate firms in Nigeria. Primary data for their study was obtained through the use of a structured questionnaire based on a five points Likert scale. The study adopted descriptive statistics and One Sample Z-test procedure using SPSS version 22 for data analysis. Their study revealed dissatisfactory level of TBL disclosure practices among firms in Nigeria, recommending that companies should disclose quantifiable TBL indicators. In a related study, Zaccheaus, Oluwagbemiga & Olugbenga (2014) studied the effect of CSR on stock prices of listed manufacturing companies in Nigeria. Secondary data covering the period 2008 to 2012 was compiled from the annual reports of 30 companies sampled for study out of the 73 manufacturing firms listed on the NSE. The study adopted simple OLS regression techniques and descriptive statistics to analyze data, and found no relationship between CSR and stock prices (proxy for firm performance).

In their study, Ifurueze, Etale & Bingilar (2013) examined the impact of environmental cost on corporate performance in Nigeria, using a sample of twelve oil companies quoted on the Nigerian Stock Exchange (NSE). Three indicators of environmental sustainable business practices were used as proxy for environmental cost, while ROTA was used as proxy for corporate performance. Multiple regression technique was employed to analyze secondary data obtained from the annual reports of selected companies for the eleven years period covering 2001 to 2011. The study found significant relationship between sustainable business practices and corporate performance. Also, Ekwueme, Egbunike & Onyali (2013) examined the relationship between sustainability reporting and corporate performance in Nigeria using

primary data obtained through a structured questionnaire based on the five points Likert scale. The study employed descriptive statistics, Kolmogorov-Smirnov (K-S), One Sample T-test and Multiple Regression Techniques for data analysis, and found that corporate performance was positively connected to sustainability reporting. They therefore recommended the adoption of sustainability reporting practices by corporate organizations in Nigeria.

### Content analysis of past literature and research gap

Aggarwal (2013a) conducted a literature survey to examine the relationship between environmental responsibility reporting and financial performance. He reviewed 18 past empirical studies on the subject matter. The study found that out 16 studies that treated environmental responsibility practices as independent variable, 8 showed a positive relationship between environmental responsibility and financial performance; 3 showed a negative relationship; while 5 provided mixed or no significant links. These 16 studies were carried out in different countries or geographic regions: 6 in US; 2 each in Japan and Spain; 1 each in Nigeria, Sweden, UK, Germany, US/Europe and Asia (data from 7 countries). The other 2 studies covered in his review, treated environmental responsibility as the dependent variable, and the results showed that environmental responsibility practices were influenced by harmful emissions, press release activities and external financing. He concluded that environmental responsibility practices leads to improved financial performance due to good relations with stakeholders; enhanced reputation; ability to attract and retain qualified employees, investors and customers; cost savings; operational efficiencies; innovations; long term orientation; better access to capital; secured license to operate and increased competitive edge. Similarly, Alshehhi, Nobanee & Khare (2018) investigated the relationship between corporate sustainability practices and financial performance through a systematic survey and content analysis of past empirical literature on the subject. The study involved a total of 132 research articles from around the World published between 1984 and 2017 in top-tier peerreviewed journals. The time period distribution indicated that 20% of these papers were published between 2012 and 2013, 27% between 2014 and 2015 and 28% between 2016 and 2017. The study revealed that 78% of the research findings indicated positive connection between financial performance and corporate sustainability. They however noted the scarcity of research studies on this subject and recommended further research to facilitate the understanding of the relationship between financial performance and corporate environmental responsibility practices. These reviews indicated the existence of a research gap which this study intended to contribute to.

#### **METHODOLOGY**

The methodology adopted for this study was based on the content analysis approach. Data for the study was collected through content analysis of the annual reports of quoted oil and gas companies in Nigeria over a period of six years. Kothari and Garg (2014), defined content analysis is a research procedure that is used to make replicable and valid inferences by interpreting and coding textual material. This study involves the analysis of financial statements hence this research design is considered suitable for this study. The population of the study is made up of all 168 companies quoted on the Nigerian Stock Exchange (NSE, 2018). However, for the purpose of sampling, all 13 companies from the oil and gas sector were chosen. Convenience sampling procedure was employed in choosing the study population, while judgmental sampling method was used in choosing the firms in the oil and gas sector as

the study sample. Moreover, the oil and gas sector is known to cause more damage to the environment and the reason for agitation and restiveness in the Niger Delta Region of Nigeria.

The study used data from secondary sources. The variables of the study are ENVI (used to represent environmental responsibility reporting), the dependent variable; and return on capital employed (ROCE), and assets turnover (ATOV) as the independent variables as well as proxy for financial performance. The data for the variables of the study were gotten from the financial statements of the selected oil and gas companies for the period 2012 - 2017. Ordinary Least Square (OLS) regression analysis method based on the Statistical Package for Social Sciences (SPSS) software was deployed for analyzing data.

To be able to empirically analyze the relationship between financial performance and environmental responsibility reporting, a multiple regression analysis model which has been adopted and widely used by several researchers such as Mohammed (2013), Ifurueze, Etale and Bingilar (2013), Malarvizhi and Matta (2016) to mention a few, was modified and adapted as indicated below:

$$ENVI_{it} = f(ROCE_{it}, ATOV_{it})$$

This can be stated in the form of an econometric equation as:

$$ENVI_{it} = \beta_0 + \beta_1 ROCE_{it} + \beta_2 ATOV_{it} + U_{it}...$$
 (1)

#### Where:

ENVI = Environmental Responsibility Reporting Index. In assessing the amount of environmental and social responsibility reporting in annual financial reports, the Global Reporting Initiative (GRI) Reporting Guidelines (2002) was adopted in this study. These disclosure procedures include sixty items to determine the magnitude of responsibility reporting relating to economic, social, and environmental perspectives (twenty items for each perspective). The index uses a binary coding system which assigns 1 if item is disclosed and 0 if it is not disclosed (Hossain & Hammami, 2009). As such, a sampled company could score sixty points highest and zero score at the lowest. GRI having representation in 77 countries provides a comprehensive sustainability reporting framework that is widely used around the world to achieve greater transparency (GRI, 2018). The framework and sustainability reporting guidelines, sets out the principles and indicators any organization that is seeking to develop transparency can use to report the environmental, social and economic impact of its operations;

ROCE = Return on capital employed indicates firms profitability and is calculated as the net profit after taxes plus interest on long term liabilities scaled by total capital employed (shareholders' equity plus long term liabilities) as at the end of the financial year under investigation. After all, equity owners and providers of long term liability combined have claims on the assets of the firm. This measure of financial performance is considered the best as it shows the earnings power of a firms taking into account the interest of all stakeholders;

ATOV = Assets turnover, and it is calculated as sales revenue scaled by total assets. This financial performance measure considers the revenue generating capacity of the firm's assets, as well as a measure of the efficiency in the management and utilization of the assets. Besides total assets, is also used as a measure of a firm's size. Therefore, assets turnover which includes in its calculation the total assets of a firm, combined with return of capital employed as defined in this study are adjudged the best measures of financial performance.

U describes stochastic error term, while t is the time dimension of the variables,  $\beta_0$  represents Constant and  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are coefficients of the independent variables to be estimated.

# DATA ANALYSIS AND RESULTS

**Table 1: Regression Result** 

Dependent Variable: F	ENVI			
Method: Least Squares				
Date: 10/09/18 Time: 15:23				
Sample: 2012-2017				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	5124504.	8689620.	0.589727	0.0016
ROCE	3.733452	0.413840	9.021476	0.0000
ATOV	11.45391	89975.37	1.273004	0.0001
R-squared	0.763740	Mean dependent var		212.432
Adjusted R-squared	0.653577	S.D. dependent var		101.897
S.E. of regression	1850753.	Akaike info criterion		32.52242
Sum squared resid	3.63E+13	Schwarz criterion		32.8760
Log likelihood	-101.669	Hannan-Quinn criter.		31.49707
F-statistic	73.20147	Durbin-Watson stat		2.809771
Prob(F-statistic)	0.000001			

Source: SPSS 20 Data Analysis Output 10/09/18

The variables ROCE and ATOV (proxy for Financial Performance) meet apriori expectation as they have positive link with the ENVI (Environmental responsibility reporting). The impact of the explanatory variables return on capital employed and assets turnover on environmental responsibility reporting is statistically significant as shown by the respective probability values of (0.000), (0.0001) and (0.0019), that is lower than the (0.05) critical value.

The model shows an R<sup>2</sup> stat of 0.763 which implies a 76.3% explanatory ability of the model for the systematic variations in the dependent variable with an adjusted R<sup>2</sup> value of 0.653. The F-stat (73.20) and p-value (0.0001) indicates that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected at 5% level. It means that the explanatory variables account for considerable variation in environmental responsibility reporting. The overall pooled effects of the explanatory variables are statistically significant as shown by the probability of the F-statistic. The Durban Watson statistic shows absence of any serial positive auto-correlation among the independent variables with a value of 2.81.

# **Hypothesis Testing**

In discussing the results, the multivariate regression estimates are utilized to examine the correlation between return on capital employed, assets turnover and level of environmental responsibility reporting.

# **ENVI and ROCE**

Hypothesis one examines the impact of return on capital employed used as a proxy for financial performance on environmental responsibility reporting. As observed, regression estimation reveals that a significant positive relationship exists between ROCE and ENVI (t=9.021476, p=0.0000<0.05). We therefore use this as some evidence to empirically state that financial performance of the firms had an effect on the level of environmental responsibility reporting of firms during the period covered by the study, and hence we accepted the alternative hypothesis.

#### **ENVI and ATOV**

To test this hypothesis, we read off the regression result which reveals a significant positive relationship between ENVI and ATOV (t=1.273, p=0.0028<0.05). This implies that the level of environmental responsibility reporting is directly linked with assets turnover with a positive T-statistics value at the 5 percent level of significance. Based on this, we therefore accepted the alternative hypothesis that there is a significant positive relationship between environmental responsibility reporting and assets turnover.

#### DISCUSSION OF FINDINGS

This study conducted an empirical analysis of the relationship between financial performance (proxy by ROCE and ATOV) and environmental responsibility reporting (ENVI). The study found that financial performance is positively related to level of environmental responsibility reporting, and is statistically significant. This implies that the more profits and income a company makes will go a long way in boosting the environmental responsibility reporting practices the company would make in its financial statements.

The findings also revealed that environmental responsibility reporting is positively and significantly related to assets turnover of the firms and statistically significant at 5% level. This implies that as a company achieves improvements in revenue, the firm would have more financial resources at its disposal to make sufficient environmental responsibility disclosures in its annual reports. The study also empirically demonstrated that environmental responsibility reporting is positively and significantly related to return on capital employed at 5 percent level of significance.

Based on the analysis of data obtained from the selected companies' financial reports, the study also found that, companies only report what they feel comfortable to report hence most reports avoid negative side of corporate environmental activities. Overall, the study discovered that environmental responsibility reporting in Nigeria is still at the developmental stages.

# CONCLUSION AND RECOMMENDATIONS

This study examined the relationship between environmental responsibility reporting and financial performance of the oil and gas sector of Nigeria, using secondary data obtained from the annual financial statements of oil and gas companies listed on the Nigerian Stock Exchange covering the period from 2012 to 2017. The study discovered that there is no laid down standard format or regulation guiding environmental responsibility reporting in the country. Using

empirical methods, the research study tested the relationship between return on capital employed and assets turnover (proxy for financial performance) and environmental responsibility reporting. The findings of this study, which are in line with previous studies (Onyali, Okafor & Onodi, 2015; Ekwueme, Egbunike & Onyali, 2013; Cortez & Cudia, 2011; Nakao et al, 2005; Teoh et al, 1996), revealed the existence of a significant positive relationship between the level of environmental responsibility reporting and financial performance. The results of the study indicated that larger companies with higher asset base, turnover and expanded profit margin have better quantity and quality of environmental responsibility information disclosed in the annual reports. The study therefore concludes that environmental responsibility reporting is still at the developing stage in Nigeria because of the voluntary nature of disclosure requirements. The study therefore recommends that firms should formulate and implement economic, social, and environmental friendly policies to enhance their competiveness and that the regulatory agencies should formulate and enforce the adoption of uniform reporting and disclosure of environmental responsibility practices by corporate entities for the purpose of control and measurements of performance.

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