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Environmental Management Disclosure and Financial Performance of Quoted Oil and Gas Firms in Nigeria

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Abstract: *This study is on the effect of Environmental management disclosure on financial performance of quoted oil and gas firms in Nigeria. In order to achieve the main objective of the study, a total of fourteen oil and gas companies quoted on the floor of the Nigerian stock market were selected and analyzed. Comparative data for the study were extracted from corporate annual reports and accounts of selected firms for the period 2011-2018. Financial Performance was proxy by, Profitability and two controlled variables, leverage and firm size. Twenty Testable Environmental Disclosure Index Twenty four (20) content category items within four (4) testable dimensions of corporate environmental disclosure was developed for coding environmental management disclosures. The data obtained were analyzed using the ordinary least square (OLS) regression analysis. It was found that environmentalmanagement disclosure does not significantly affect firm's profitability and leverage while firm size was found to increase with the level of environmental management disclosure. The study recommended that oil and gas firms should consider the gains of disclosing their environmental practices online to facilitate accessibility and ensure that stakeholders are aware of their efforts towards environmental sustainability.*

Keywords: Environmental management disclosures, Financial Performance, Content Category.

1. Introduction

The Nigeria economy, in line with global realities, has witnessed tremendous economic and social changes. This social and economic change has increased the complexities and sophistication of the business environment which in turn heightened interest in the concept of corporate environmental and social responsibility in the developed countries. In contrast, the developing countries are slower in responding to the increased concern about the issue of corporate environmental and social responsibility especially among the oil and gas sector with increasing waste and environmental impacts arising from oil spillage, gas flaring and so on. The environmental impacts of the activities of manufacturing firms especially in the oil and gas sector has never been so felt in the history of oil exploration in Nigeria. This has also been lend credence by the notorious environmental incidents in Nigeria, such as, an attempt in 1997 by a foreign company, acting through an agent, to dump toxic waste in the Niger Delta region (Adekanmi, Adedoyin. & Adewole, 2015).

Considering the increasingly hazardous impacts of operation of oil and gas firms, one should expect that they should be adequately disclosed in their annual reports about their environmental activities and its effects and also, to sensitize stakeholders on steps taken to ameliorate the harmful effects of such activities. Based on the foregoing argument, this study seeks to examine the extent of disclosure of environmental management practices of oil and gas companies in Nigeria and how it affects their performance.
The remaining part of this study is structured as follows: the second is discusses the literature review on disclosure and performance. The second section provides the theoretical framework for the study. The fourth and fifth sections ex-rayed the methodology and analysis of results respectively and finally, the sixth section focuses on conclusion and recommendations.

2. Conceptual Framework

Environmental Accounting

Environmental Accounting (EA) is broadly defined to be the identification, collection, estimation, analysis, internal reporting, and use of physical flow information (i.e., materials, water, and energy flows), environmental cost information, and other monetary information for both conventional and environmental decision-making within an organization (United Nations, 2001). Thus EA incorporates and integrates two of the three building blocks of sustainable development – environment and economics – as they relate to an organization's internal decision-making. According to the Institute of Management Accountants (1996), Environmental Reporting involves the identification, measurement and allocation of environmental costs, and the integration of these costs into business and encompasses the way of communicating such information to companies' stakeholders.
The critical role of accounting becomes complex when corporations are the means to inform stakeholders on firm environmental actions and responsibilities. Accounting and reporting system is also challenged by various regulatory environment and globalization perspectives under multiplicity of social, legal, political and cultural values. Accordingly, companies need to strive to aim for both economic and societal goals. These have put force for corporations to engage into environmental responsibility including environmental accounting and reporting matters (Uwuigbe & Uadiale 2011).

Environmental Management Disclosure and Financial Performance

The increased interest in environmental, social and governance issues stimulated a dynamic development of econometric and financial literature focusing on the relationship between corporate social performance and firm profitability (Manescu&Starica, 2008). Profitability is often used as a measure to assess the achievements and performance of the company or as the basis of performance assessment measures, such as earnings per share (Zaki& Othman, 2011). Profitability is an indication of the success of an enterprise, although not all companies make profits as its primary purpose, but it will require effort to maintain profits (Zaki& Othman, 2011). Profitability and value maximization are the operational phenomenon of every profit making organization and constitutes the short and long-run management planning and operating strategies (Ekwueme & Ezelibe, 2017). Profitability ratios include return on assets (ROA), net profit margin (NPM), and others which are clear indicators to financial performance.

Leverage refers to the extent to which firms make use of their borrowed funds, (debt financing) to increase profitability and is measured by total liabilities to equity. Leverage refers to the proportion of debt to equity in the capital structure of a firm. The financing or leverage decision is a significant managerial decision because it influences the shareholder's return and risk and the market value of the firm (Omondi & Muturi, 2013). Leverage is viewed as a result of events that determines companies' source of financing to run the business (Alkhatib, 2012).

On the contrary, the lower the firm's borrowings, the lower the leverage, and the risk of bankruptcy will eventually be lower which signifies that business will continue operating (Alkhatib, 2012). Firms with a high leverage are expected to disclose more environmental information than firms with low leverage. The disclosure of information can be used to lower the monitoring costs of accounts payables. Creditors(Accounts payables) would like more information to be disclosed to control their own credit risk. Business owners seek to increase their wealth and the performance of their firms. Njeri & Kagiri (2013) opine that leverage increases the level of the debt in the capital structure and the turnover of the business and hence its profit, resulting in an increase in returns to the business owners.

The size of a firm is a relative concept usually defined using extant criteria which might differ in respective countries. Size effect is one of the three economic factors that Harris (1998) considered as influencing managers environmental reporting decisions because management is more likely to disclose environmental activities if the operations of the company is big enough to impact its immediate environment.

Theoretical Framework

There are several theoretical frameworks which highlight the influence of disclosure on performance, such as stake holders theory (SHT) and Legitimacy theory (LT). Meanwhile, since there are studies that have been performed on the link between disclosure and performance, then, this work will be anchored on Legitimacy theory.

Legitimacy Theory

A number of different theories have been used to explain why corporations might voluntarily disclose social and environmental information to outside parties. The most insights into corporate social disclosure derive from the use of legitimacy theory framework which posits that social and environmental disclosure is a way to legitimize a firm's continued existence or operations to the society (Gray, Kouhy & Lavers, 1995). Legitimacy theory has been used by researchers studying social and environmental disclosures, and they indicate that corporations legitimize their activities because corporate management reacts to community expectations (Patten, 2002, Guthrie & Parker, 1990). Therefore, legitimacy theory assumes that voluntary corporate social and environmental disclosures are in response of social, economic and political factors. Many previous studies on corporate social disclosures have provided evidence that firms do voluntarily disclose information in their annual reports as a strategy to manage their legitimacy (Patten, 2002; Woodward, Edwards & Birkin 2001). Therefore since the continual existence of an organization in an environment depends on its ability to disclose on the impacts of its environmental activities, which is seen as legitimacy, then environmental management disclosure can influence performance of oil and gas sector.

Empirical Review

Olanrewaju, and Johnson-Rokosu, (2016) explored the trend in sustainability reporting practice in an emerging market. The study found that the greatest proportions of location of corporate social and environmental disclosure of the sampled companies are disclosed in the chairman's statement and directors' report.

Toluwa, Okun and Ikhenade (2016) investigated the determinants of environmental disclosure in Nigeria. The specific objectives therefore, are to examine the effect of industry type, leverage and firm size on environmental disclosure. The statistical instrument employed in the study, is the Binary logistic panel data regression. Our findings revealed that industry type, firm size has positive relationship, while leverage has no significant effect on environmental disclosure.

Juhmani, (2014) investigated the level of social and environmental information disclosure practices in websites of companies listed on Bahrain Bourse, also to determine the influence of firm size, profitability, financial leverage, firm age and audit firm size on the level of social and environmental information disclosures under legitimacy theory. The findings indicate that 57.57% of the sampled listed companies provided social and environmental information in their 2012 annual reports and their websites.

Commercial banks and insurance companies made the most disclosure of social and environmental information, while the least disclosure was made by companies in the hotels and tourism sector and industrial sector.

Ofoegbu, and Megbuluba, (2016) examined the influence of firm characteristics on the quality of Corporate Environmental Accounting Information Disclosure (CEAID) in the Nigeria manufacturing companies. The results strongly showed that firm financial performance has a significant impact on the quality of CEAID, but firm size had no impact on the quality of CEAID. The descriptive analysis showed that the highest quality of CEAID as examined using the Global Reporting Initiative and IS0 14301 environmental requirement is far below standard at 2.5%.

Uwuigbe and Uadiale (2011) investigated the level of corporate social environmental disclosure among listed companies in the brewery and building material industry in Nigeria. The corporate annual reports for the periods 2004-2008 were utilized as their main source of secondary data. The paper concluded that corporate social environmental disclosures among the selected listed companies is basically very low and still at its embryonic stage. The paper recommended that corporate social environmental disclosure themes and evidence must be established to provide foundation for improving environmental information disclosures among companies.

Magara, Aming'a and Momanyi (2015) examined the impact of environmental accounting on financial performance of corporate organizations in Kisii County. The main variables of the study were EA application being the independent variable, and perceived financial performance as the dependent variable. The population of their study was 144 consisting accountants and auditors in the 16 corporate organizations. Analysis of individual perceived financial performance parameters shows that revenue generation has been improving, cash flows are seen to be in a good state and profitability has been on the increase. Constructs of EA application (environmental information, environmental evaluation, compliance of environmental laws and tracking of environmental cost savings) are significantly positively related to perceived financial performance of the corporate organizations.

Review of previous studies reveals that it has indeed attracted several interests among the academia and practitioners, however to the best of the researcher's knowledge; there is no prior research evidence that examined the environmental disclosure practices of oil and gas companies in Nigeria and how it affects their financial performance over the period of 2011 to 2018. This is therefore the gap in literature that this study attempts.

Methodology

Content analysis research design was adopted for this study. The population of this study comprise of all the fourteen oil and gas companies listed on the Nigerian Stock Exchange. The required data was obtained from the annual reports of the companies for 2011-2018 available at the Nigerian Stock Exchange (NSE) and the Companies' websites. Twenty (20) content category items within four (4) testable dimensions of corporate environmental disclosure (see Appendix 1) were developed for coding, from other relevant prior literatures (Milne, & Adler, 1999; Abu-Baker, & Naser, 2000; Hossein & Nahid, 2012; Uwuigbe, 2012). A dichotomous procedure known as the kinder Lydenberg Domini (KLD) environmental performance rating system was used to measure the total reporting score (TRS). A score of one (1) was awarded if an item was reported; otherwise a score of zero (0) was awarded. Consequently, a firm could score a minimum of 0 and a maximum of twenty (20) points.The data obtained was analysed using the ordinary least square (OLS) regression analysis. A model was formulated to establish a relationship among the variables. The empirical model is specified as follows:

$EMD_{it} = \beta_o + \beta_1 PFT_{it} + e_{it}$ ……….. equation 1

$EMD_{it} = \beta_o + \beta_1 FSZ_{it} + e_{it}$ ……….. equation 2

$EMD_{it} = \beta_o + \beta_1 LEV_{it} + e_{it}$ ……….. equation 3

Where: EMD = Environmental Management Disclosure
PFT = Profitability.
LEV = Leverage ratio
FSZ = Firm Size
e = Error term.
t = Time period.
i = Cross section dimension and ranges from 1 to N
βo = Intercept
$\beta 1$ = Coefficient for independent variables

Data Analysis

Table 1: Regression and ANOVA Summary of Data Analysis

Dependent Variable		Environmental Management Disclosure	R^2	AR^2	Durbin-Watson
Firm Size	Coefficient	0.282	0.373	0.363	0.358

	F-statistics (P-value)	38.595 (0.000)			
Profitability	Coefficient	-0.008	0.002	-0.014	1.724
	F-statistics (P-value)	0.103 (0.750)			
Leverage	Coefficient	-0.014	0.005	-0.071	1.096
	F-statistics (P-value)	0.330 (0.568)			

Source: Researcher's Computation using SPSS Version 24

Testing of Hypotheses

Hypothesis I: Environmental management disclosure has no significant effect on firm size.

The outcomes displayed in table above reveal that environmental management disclosure has a positive and significant impact on firm size (R^2 = 0.373; AR^2 = 0.363; t-value = 6.212; F-stat = 38.595; DW = 0.358; p-value=.000< 0.05). The R square implies that environmental management disclosure is responsible for 37.3% of increase in firm size. The model is 36.3% predictable as given by the adjusted R square. For every unit change in EMD, firm size increases by 0.282 of a unit. The f statistics is the ratio of an estimated coefficient to its standard error, is used to test the hypothesis that a coefficient is equal to zero.

Decision Rule: To interpret the f-statistic, the critical f-value is obtained. This value separates the "acceptance" region from the "rejection". The hypothesis that the coefficient is zero is rejected at the 5% significance level if the calculated f-value is greater than the critical f value. In this case f calculated of 38.595 is greater than f-critical 4.00 (df= 1, 65). From this, it can be said that environmental management disclosure affects firm size positively.

Hypothesis II: Environmental management disclosure does not significantly affect firm's profitability.

The regression analyses presented in the table above show that corporate environmental management disclosure has a negative effect on Profitability as indicated by the co-efficient of -.008. However, this effect was not found significant at 0.05 level of confidence since p=.750> .05. The model statistics (R^2 = 0.002; A R^2 = -0.014; F-stat = .330; DW = 1.724; p-value=.750> 0.05) also revealed no significance. The value of the R square implies that environmental management disclosure is responsible for as little as just 7.1% of decrease in profitability. The negative adjusted R square showed no predictability.

Decision Rule: To interpret the f-statistic, the critical f-value is obtained. This value separates the "acceptance" region from the "rejection". The hypothesis that the coefficient is zero is rejected at the 5% significance level if the calculated f-value is greater than the critical f value. In this case $f_{calculated}$ of 0.103 is less than $f_{critical}$ 4.00 (df= 1, 65). From this, it can be said that environmental management disclosure does not have a significant effect on profitability.

Hypothesis III: Environmental management disclosure has no significant effect on leverage ratio.

From the table above, environmental management disclosure had a negative co-efficient of -.014 and showed no significant effect on the leverage of firms (R^2 = 0.071; AR^2 = -0.010; t-value = -.574; F-stat = .330; DW = 0.358; p-value=.568> 0.05). The value of the R square implies that environmental management disclosure is responsible for as little as just 7.1% of decrease in leverage. The negative adjusted R square showed no predictability.

Decision Rule: To interpret the f-statistic, the critical f-value is obtained. This value separates the "acceptance" region from the "rejection". The hypothesis that the coefficient is zero is rejected at the 5% significance level if the calculated f-value is greater than the critical f value. In this case f-calculated of 0.330 is less than f-critical 4.00 (df= 1, 65). From this, it can be said that environmental management disclosure does not have a significant effect on leverage.

Conclusion and Recommendation

This study sought to examine the effect of environmental management disclosure on the profitability, financial leverage and size of oil and gas firms. Conclusions are drawn based on the analysis. The study concludes that environmental management disclosure does not significantly affect profitability and financial leverage. This showed that other factors external to the study are responsible for significant changes in these performance indicators. However, size of firms was found to increase with the level of environmental management disclosure.

In line with the findings of the study, the following recommendations were made:

Oil and gas companies should consider the gains of disclosing their environmental practices online to facilitate accessibility and ensure that stakeholders are aware of the efforts of the company towards environmental sustainability.

The companies should include information on environmental expenditure, environmental costs charged to income in the notes to the accounts in their annual reports.

To ensure a successful corporate performance, it is imperative that organizations incorporate environmental agenda into their corporate strategy. Environmental concerns have to become an integral part of their routine operations.

Government agencies should give tax credit to organizations that comply with its environmental laws in Nigeria as this would encourage environmental reporting.

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APPENDIX 1

Twenty Testable Environmental Disclosure Index

Environment

Environmental pollution
Conservation of natural resources
Environmental management
Recycling plant of waste products
Air emission information

Energy

Companies' energy policies
Disclosing energy savings
Reduction in energy consumption
Received awards or penalties
Disclosing increased energy efficiency products

Research & development

Investment in research on renewal technology
Environmental education
Environmental research
Waste management/reduction and recycling technology
Research on new method of production

Employee health and safety

Disclosing accident statistics
Reducing or eliminating pollutants, irritants, or hazards in the work environment.
Promoting employee safety and physical or mental health
Disclosing benefits from increased health and safety expenditure
Complying with health and safety standards and regulations