

Environmental Accounting and Financial Performance of Oil and Gas Companies in Nigeria

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Abstract

Environmental accounting serves as a systematic approach in managing the environmental aspects of company activities. The shift in business economics towards environmental issues has led to the realization of the increasing importance of research in environmental accounting. This study employs the use of questionnaires in order to receive direct (primary) information from companies that produces environmentally friendly products. The findings in this study suggests among other things, that lack of environmental reporting and disclosure standards significantly affects the reporting and disclosure uniformity of environmental related information in financial statements, annual reports and accounts. Thus, environmentally friendly organizations who voluntarily disclose their environmental activities enjoy high level of competitiveness. Still, such disclosure is guided by the social responsibility and commitment on the part of entities that work as strong agents for polluting the environment. Conclusively, issues related to financial performance, managerial accounting, external and internal auditing, tax and financial accounting need to be studied further in order to deal with other environmental issues effectively. This study thereby gave some recommendations among others is the recommendation that government should make environmental reporting in annual reports compulsory since most organizations hardly report their environmental activities in their reports.

Keywords: Environment Accounting, Disclosure, Financial Performance, Oil and Gas.

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Introduction

The impact of oil business activity on the environment is found in several forms: air, water, underground pollution, drinking water, land and habitat for endangered and threatened species, oceans, atmosphere, land, mass etc. An array of pollutants, including toxic, hazardous and 'warming' is accountable to business activities. They expressed that from this range of environmental impacts, multiple disciplines are needed for analysis of effects, and for integration into management decisions and accounting reporting (Yakhon&Dorweiler 2004). In today's business environment when the increased industrial/economic activity have been detrimental to man's livelihood. The increasing industrial/economic activities have largely affected the environment which is an integral constituent of human existence. Natural capital such as clear air, clean water, land, greenhouse gases, climate, energy, ecosystems, biodiversity and other natural elements are degraded and altered and environmental sustainability threatened. The mechanized agricultural system adopted for greater yield involving large scale cultivation has led to the loss of animal and plant habitat, deforestation and extinction of endangered species.

Nigeria being a developing nation, endowed with abundant natural resources such as petroleum, natural gas, coal, limestone, vegetation etc. is not devoid of environmental degradation. The nation, in an attempt to tap these resources to enhance its economic development and well-being of the citizenry invariably finds herself experiencing an array of pollutants including carbon dioxide, warming and other greenhouse emissions. According to Beredugo&Mefor (2012), Natural resources constantly explored and exploited by oil and gas companies are not without their imminent environmental impact such as emissions, hazardous waste, soil contamination, biodiversity loss (wildlife, Agro diversity) and global warming. These natural resources are tapped to enhance economic development are finite and non-renewable in nature subject to diminution. However, huge amount of money is derived daily by the country (like Nigeria) from sales of crude oil and its by-products. Therefore, one would generally assume that this money should have significant impact at least on the development of oil and on the mineral producing communities. This should be so because it is on record that the oil and gas industry remain the major income earner (about 90% of the total revenue) for the nation (National Economic Empowerment and Development Strategy [NEEDS], 2004 and Shell, 2000).

Environmental disclosure aligns with the triple bottom line framework which emphasizes balancing all stakeholder concerns. Employees are major stakeholders whose welfare is paramount for enhanced organizational performance and as such worker's health and safety cannot be overemphasized. Oil and gas operations in Nigeria are mainly extractive in nature and employees are predisposed to dangerous and hazardous experiences such as mechanical, chemical, physical and biological risks factors. However, the International Labour Organization (ILO) (1959) emphasized that employee health and safety should be part of organizations culture aimed at protecting workers against health hazards as a result of work schedules. Cole (2002) noted that employees who are healthy and safe at work are more committed and utilize the best of their potentials to work thereby yielding results.

Considering this observation, a rational being as man should always be in deep thought of calculation on how to make maximum use of his environmental resources to better his life. The need for this desire drives a man into various activities which should include among others: production of goods and services, seeking for adequate accommodation, urban development, portable water supply and others. Going by the increasing environmental activities within the environment having continuous impact on the ecosystem has led to environmental diminution, resource exhaustion, and environmental data misuse. With the continuous degradation of the environment as a result of increasing industrial activity, there is an increasing call for environmental accounting in organization with the aim of keeping the records of environmental activities in order to know whether the data generated have a significant impact on the performances organizations most of especially the of oil companies who are the most significant organizations releasing the highest toxic into the society due to its onshore and offshore operations (Oti and Mbu-Ogar, 2018).

It is based on this background, that this study is intended to look into environmental accounting and financial performance of oil and gas companies in Nigeria. The study provides insight on how firms report environmental financial performance, quantitative (verifiable or auditable) environmental information in their annual reports and the extent this reasonably affects the firms' profitability and overall financial performance.

The remainder of this conceptual paper is organized as follows. In the next after the introduction is the review of related literature, which contains the overview of oil and gas industry in Nigeria, conceptual framework, conceptual studies, and hypotheses. After which comes the methodology. In it is the research design, data collection method and statistical analysis. The next model on this study is the econometric results and discussion. Follows by the conclusion and recommendation.

Review of Literature

Environmental quality model is the ideal state of zero-damage to the environment, 'which is analogous to environmental quality management (EQM), a zero-defect state of total quality management. This is certainly compatible with the concept of eco-efficiency. Environmental costs incurred are costs arising because poor environmental quality exists or may exist and these have to be prevented, reduced or remedied. Various theories such as the Stakeholder's theory, the Political economy theory and the corporate social responsibility theory have been found relevant to this work. Also, in the environmental theory postulated by O'Riordan (1997), Pepper (1986) and Dobson (1990) as cited by Acti et al (2013), emphasizes the need for environmentally friendly products and clean technology and stresses the need for business to produce a balanced report that includes reporting the impact of business activities on the environment. This study adopts the Environmental Quality Cost Management Theory.

Brief Overview of Oil and Gas Industry in Nigeria

In 1956, the Shell Group discovered crude oil in Nigeria and ever since, Oil and gas industry have been vibrant in the country. However, the sector was largely dominated by multinational corporations until the early 1990s when Nigerian companies began to make a foray into the industry. Local participation was boosted with the implementation of the Nigerian Content Directives issued by the Nigerian National Petroleum Corporation (NNPC) about a decade ago, and eventually, by the promulgation of the Nigerian Oil and Gas Industry Content Development (NOGIC) Act (The Act) in 2010. The Act seeks to promote the use of Nigerian companies/resources in the award of oil licenses, contracts and projects.

When it comes to structure, the industry is broadly divided into: Upstream sector and Downstream sector. The upstream sector is characterized by exploration and production of crude oil and gas (petroleum operations). The upstream oil sector is the single most important sector in the Nigerian economy, accounting for over 90% of the country's exports and about 80% of the Federal Government (FG's) revenue. The Downstream Sector on the other hand consists of transmission and Conveyance which involves the transportation of oil and gas to the refinery and gas stations. There is a pipeline network from the wellhead to the refinery or plant. Tankers and purpose-built vessels are also used for this purpose; And the refining which involves transforming the crude to products such as PMS, diesel, kerosene, etc. Also, the distribution and Marketing- which entails the distribution and marketing of refined petroleum products and other complementary activities. Distribution also involves the transportation of refined petroleum products from the refineries through pipelines, coastal vessels, road trucks, rail wagon etc. to the storage/sale depots.

Listing rules requires companies to disclose/report on their environmental footprints, these requirements are not met by most firms in the oil and gas sector and as a result, the business environment becomes volatile and uncondusive for businesses to thrive as these firms are perceived as environmentally unfriendly which impedes corporate image and adversely affects financial performance.

Theories on Environmental Accounting as related to Nigeria Oil and Gas Industry

This study examined the theoretical background of environment accounting based on the social theories of accounting. According to the legitimacy theory, organization seek to establish congruence between the social

values associated with or implied by their activities and the norms of acceptable behavior in the larger system of which their activities are part.

The social theories of environmental accounting discussed in this study include, stakeholder, legitimacy and positive accounting theories. This approach is extended to stakeholder's theory by explaining information disclosure as an obligation and the right of the stakeholders. Stakeholders are groups, which are influenced by the corporate activities or which can affect the corporation. The organization's survival in the long run requires stakeholder's support and approval. The more powerful the stakeholders are, the more the organization must adapt to their interests and demands.

Stakeholders Theory

The basic proposition of the stakeholder's theory is that the firm's success is dependent upon the successful management of all the relationships that a firm has with its stakeholders a term originally introduced by Stanford research institute (SRI) to refer to those groups without whose support the organization would cease to exist (Freeman, 2003).

The main concern of the stakeholder's theory in environmental accounting is to address the environment cost elements and valuation and its inclusion in the financial statements.

Legitimacy Theory

According to Tilling (2004), legitimacy theory offers a powerful mechanism for understanding voluntary social and environmental disclosure made by corporations, and that this understanding would provide a vehicle for engaging in critical public debate. The problem for legitimacy theory in contributing to the understanding of accounting disclosures specifically and as a theory in general is that the term has an occasion been fairly loosely. This is not a problem of the theory itself, and the observation could be equally applied to a range of theories in a range of disciplines. Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values and definitions (Suchman, 1995).

Positive Accounting Theory

Positive accounting theory suggests and explains why firms make voluntary social disclosures. Based on the original work of Watts and Zimmerman (1986), the positive accounting theory have directly sought to establish evidence for the political cost hypothesis as an explanation for firms' social disclosures. Along with numerous others, Gray et al (1995) dismiss the positive accounting arguments on the grounds of the underlying assumptions of the theoretical framework. As they suggest positive theories are not about what (social) reporting should be, but rather about what it is on the face of it, and on the basis for explaining why firms are making social disclosures, positive accounting explanations are less easily dismissed. Casual observations, for example reveals that positives accounting explanation rely on empirical evidence largely identical to that used in support of other explanation (most notably, legitimacy theory) of social disclosure, explanations which, incidentally Gray et al (1995) seem to find more acceptable. As Gray et al (1995) note, a number of empirical studies have shown strong associations between disclosure and firm size, and between disclosure and type of industry. In fact, the size disclosure and type of industry. In fact, the size disclosure relationship appears empirically the most robust. Such results are claimed in support of legitimacy theory (Patten, 1991, Deegan and Godon, 2006), as well as in favour of positive accounting theory.

Empirical review

The status of environmental accounting and financial performance of oil and gas companies in Nigeria is been evaluated by these studies. Among the studies are the study conducted by Bassey, Effiok, and Eton, (2013) that examines the impact of environmental accounting and reporting an organizational performance with particular reference to oil and gas companies operating in the Niger Delta Region of Nigeria. The study was conducted using the Pearson's product moment correlation co-efficient. The elements were selected by means of random and stratified sampling technique. Data were gathered from primary and secondary sources. Data collected were presented using tables and analyzed using the Pearson's product moment correlational analysis. It was found from the study that environmental cost has satisfied relationship with firm's profitability. It was concluded that environmentally friendly firms will significantly disclose environmental related information in financial statements and reports. The study recommended 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.

Another study was also conducted by Obara, and Nangih, (2017) on the extent to which Accounting practices affect the profitability of Oil and Gas companies in Nigeria, particularly those in the upstream sector. The specific objectives were: to determine the effect of accounting practices on Return on Assets (ROA) and Return on Capital

Employed (ROCE) of Oil and Gas Companies in Nigeria. The study objectives guided the empirical review. The Researchers used Stratified Sampling Design approach. The target population comprised of Oil and Gas Companies in Nigeria. A total of 84 respondents were drawn from the population. Both primary and secondary data were used in the study. Primary Data were collected using questionnaires drawn using the Likert's Scale with five points ranging from very great extent to no extent, while secondary data were sourced from already published materials. Hypotheses were formulated and data were analyzed using SPSS Software and other Descriptive statistical tools such as; percentages and tables. The result of the study showed that accounting practices had a significant relationship with performance of Oil and Gas Companies, particularly, the Return on Assets and Return on Capital Employed. It was recommended that proper and best accounting practices should be adopted by Oil and Gas companies to ensure better performance on one hand and fair, transparent and reliable financial reports on the other hand.

Nwaiwu, and Oluka, (2018) study was on environmental cost disclosure and financial performance of oil and gas in Nigeria. This study empirically examines the effect of environmental cost disclosure and financial performance measures of quoted oil and gas companies in Nigeria. Time series data were collected from annual financial reporting and economic review of Central Bank of Nigeria; Pearson product moment coefficient of correlation and multiple linear regression analysis with the aid of special package for social sciences (SPSS) version 22. The econometric results reviewed adequate disclosure on environmental cost, compliance to corporate environmental regulations have positive significant effect on financial performance measures. Thus the study recommended regulatory enforcement for adequate environmental cost disclosure and proper reporting. Management of oil and gas companies in Nigeria should develop a well articulated environmental costing system in order to guarantee a conflict free corporate atmosphere for improved corporate performance.

Shehu (2014) examines the effect of environmental expenditure on the performance of quoted

Nigerian oil companies, within a period of twelve years (1999-2010) using selected firm financial statement of all quoted oil companies listed in the Nigerian Stock Exchange. The data was analysed using multiple regression, employing ROA and three independent variables; Cost of Environmental Remediation and Pollution Control (ERPC), Cost of Environmental Laws Compliance and Penalty (ELCP), Donations and Charitable Contributions (DCC). The result reveals that environmental expenditure has significant effect on the performance of quoted oil companies in Nigeria. They therefore recommended among other things that the management of oil companies in Nigeria should increase spending on environmental issues in their host community in other to improve their performance. The interest here is to provide a synopsis of environmental cost disclosure empirical research in developed and less developing countries. Although the historicity of environmental cost disclosure is not new, however, its popularity and growth are a recent trend.

Oti, and Mbu-Ogar, (2018) examined the impact of environmental and social disclosure on the financial performance of quoted oil and gas companies in Nigeria. Time series data for five years were collected and analyzed using the ordinary least square regression technique. The theoretical framework was hinged on stakeholder and legitimacy theories which describe the tie between organizations and the social/societal strata need for disclosure and financial performance. Results from the statistical analysis revealed that disclosure on employee health and safety and community development do not significantly affect financial performance while disclosure on waste management had a positive and significant effect on firm's financial performance. The study recommended that oil and gas companies should constantly review their waste management strategy and employ bespoke technology in waste management to mitigate their impact on the environment. Furthermore, Oil and gas companies should improve on employee health and safety as part of their mission and vision statement for enhanced firm value. Companies should also ensure sustained development of their host communities to avoid hostility by stakeholder groups which will have negative effect on its operations and in turn affects performance.

According to Eze, Nweze, and Enekwe, (2016), the study identifies environmental accounting issues and the effects of these environmental factors on the life of Nigerians. It was discovered that environmentally friendly organizations who voluntarily disclose their environmental activities enjoy high level of competitiveness. Environmental accounting motivates organizations to track their greenhouse gas emissions and other environmental elements against reduction or elimination point. It was recommended that companies should adopt acceptable and uniform standards for the purpose of control and measurement of performance, and should design products which generate less waste or emission during their life cycle.

Concept of Environmental Accounting

Environmental accounting is a term that has different meaning. According to Seetharaman, Mohamed, and Saravanan (2007), environmental accounting is used to assess full environmental costs associated with activities and / or products. They also emphasized that environmental accounting can be used to track environmental performance of organization in more measurable manner. The key areas for monitoring are aggregated emission to air, water effluent discharge, soil contamination and boundary noise level. Also, James 2008 opined that environmental accounting is taken to mean the identification and reporting of environmental specific costs, such

as liability costs or waste disposal costs. Environmental accounting involves any costs and benefits that arise from changes to a firm's products or processes, where the change also involves a change in environmental impacts.

Environmental Accounting Approaches

Environmental accounting adopts two major approaches which are: The Physical approach and the Monetary approach. Firstly, the physical approach was suggested by the United Nations where a complete guide to be prepared indicating the available resources within a country classified according to its state and uses (for instance, agriculture, desert land etc). Depending on this approach the environmental operations are presented in a physical term, the current balance of the resources and the additions and deductions from that resource. No monetary value is assigned according to this approach (Ahamed, 2002).

According to Hamid 2002, the monetary approach emerged due to the fact that the physical approach does not fulfill the requirements of the environmental accounting. The physical approach is very important to get physical information about the resources which enables to prepare the environmental statistics and is considered the first step in the monetary approach. Despite the difficulties associated with the monetary approach, it gained a lot of interest as such data will enable to know the profit and loss associated with environment operations and to get an environmental adjusted economic indicator.

Environmental Accounting Disclosure in Financial Reports of Organizations and the importance

According to Adediran&Alade, (2013), Environmental data generated can be applied within the organizations, but can also be used by the public through disclosure in environmental reports. The data will be important for disclosure in organization reports as it will help users of the information get an understanding of the company's stance on environmental conservation and how it specifically deals with environmental issues (Uwaigbe&Jimoh, 2012). Again, the deepest thought in man's mind is that one day the environmental resources might be exhausted without commensurate reward. Therefore, the enactment of environmental laws and regulations by government become another option so as to protect the environment from being totally ruined. Similarly, due to uncontrolled activities in the environment as a result of "leakages" in the regulatory framework and weaknesses in policy implementation, gas flaring, waste disposal, air, land and water pollutions have made the development of natural resources and environmental accounting reporting an area of significant interest in Nigeria.

Nature of Environmental and Social Accounting Disclosure

environmental and social disclosures is defined by the World Business Council for Sustainable Development (WBCSD) (1999) as the persistent endeavor by businesses to act in ethical manner by contributing to economic advancement as well as enhancing the quality of life of its employees, host community and the society at large. Environmental and social disclosure describes the provision of information by organizations on the impact of corporate activities and the efficacy of corporation's programs as a medium of firms carrying out its social responsibilities (Parker,1986). Also, Seetharaman, et al., (2007) added that environmental accounting provides information both financial and non-financial by entities on the impact of its undertakings on the environment. It emphasizes gathering and assessing data on an entities environmental status taking into consideration its products life cycle from introduction to disposal, recycling or termination (Brainbridge, 2006).

The paradigm shift in the way business activities are carried out in Nigeria is as a result of an increasing concern by the different stakeholders/green-houses pressure groups on environmental sustainability. Organizations awareness on the need to disclose/account for its environmental/social issues has become extremely necessary owing to the fact that most investors, particularly institutional investors are sensitive to entities "green credential" i.e information about company's social and environmental policies and achievements. Environmental disclosure has been defined as information relating to the impact of company activities on the environment. It also consists of information pertaining to a firm's strategies about its environmental activities and performance (Wilmshurst & Frost 2000). According to Berthelot, Cormier and Magnan (2003), opined that corporate environmental disclosure comprises set of information about firm's environmental management policies which can take the form of qualitative statements, quantitative facts or assertions, financial statements, figures/footnotes.

Environmental Activities and Nigerian Experience

Nigeria as a developing nation with her abundant natural resources (Oil and Gas products) is facing difficult challenges in the control of environmental degradation. Oil exploration and government activities may have reduced the quality and usefulness of life through gas flaring, industrial pollution, oil spillage, deforestation, irregularity in the distribution of oil proceeds, and other related issues. Although, the country derives huge amount of money daily from the sale of crude oil and its by-products, one would generally assume that this money if properly managed should have significant impact on the development of oil and non-oil producing areas of the country. The researcher observes that most of the oil producing communities continues to dwell in abject poverty, despite the fact that the huge amount of the nation's resources is obtained from there. The multi-national companies

that explore the crude oil and its by-products from these communities often fail to consider that they should pay adequate attention to the social demands of the host communities and become environmentally friendly with them. The oil producing communities often find it very difficult to cope with their natural environment because of the oil spillage, industrial pollution, deforestation etc from these foreign companies. The impact of these environmental pollution to the host communities cannot be over-emphasized. In line with the stakeholder theory, one would ask if the multi-national companies are doing their best to ensure enhancement of quality of life of the host communities.

This entail providing the communities with good drinking water, construction of good roads, health care Center, schools, electricity employment opportunities especially for junior cadres, and finally ensure adequate environmental control measures in line with international regulatory laws.

However, for non-oil producing Nigerian states, the emergency of corrupt practices in the economic management of oil proceeds by government officials of questionable integrity has made life unenjoyably for them. The reported irregularities in the national dailies and other media agencies about the disbursement of oil proceeds by government officials and other agencies have affected negatively on the economic, social and environmental welfare of the people. It is wise to express that the money meant for the poor masses is now in the hands of the very few people who use their positions to accumulate illegal wealth for themselves.

The inability of the oil companies and often the government to meet the demands of the oil producing communities and the citizens in general creates unwholesome and hostile relationships between the parties. A situation whereby the oil communities discover that a chunk of their naturally endowed resources is being tapped without commensurate reward by the multi-national companies and the Government creates a negative attitude by the communities to the oil companies which sometimes affects operational stability of the companies.

Failed promises to Oloibiri people as stated by Foloranmi (2014). He pointed out that Chief Inegite lamented that all the promises made to the people of the oil community, when oil was discovered there have not been fulfilled, while the federal government abandoned the people. Highlighted that during the exploration, they did a lot of damage to our crops and aquatic life.

What they said (oil companies) was that they were going to compensate us for the deforestation and replace the trees they have damaged. They would pay some money to us to compensate for the period we have suffered. But today, we the natives have not seen anything and you can count the number of years. Chief Inegite, went on to express that, there are thing we have been crying for. Erosion is threatening us; our water front has been washed away. We are not puppets; we are humans and have really suffered. Oil companies should compensate us.

However, dangerous hydrocarbons are emitted into the air whenever there is oil spillage or leakages. This is dangerous to man and other living organisms. The effects of petroleum and crude oil pollution on man, plants and microbial population cannot be over-emphasized. Various effects of different hydrocarbons on health have been discussed. These include benzene which on chronic exposure may cause leukemia and birth defects, ethylbenzene which may cause dizziness, slower reflexes, loss of consciousness and death; zylene may cause damages to a developing foetus, liver, kidney, skin, eyes, and bone marrow (Mabogunje, 2007).

The search for profitability by the multinational oil companies, large scale fishing industry, lumbering companies and mineral extracting companies have made such companies exceedingly rich to the detriment of the environment. This has made the issue of environmental management very difficult more so when man's continual exploitation of natural resources is without recourse to emerging stress and problems arising from such activities (Olorunfemi and Jimoh, 2000).

Unfortunately, in spite of all the above-mentioned economic gains from exploration of the environment, little or no attention is being paid to the environment (Camozzi, 1994). It is the researcher's view that urgent and bold attempt should be exercised to eradicate or minimize environmental problems in a developing country like Nigeria.

Firm's Performance and profitability

The definition of firm performance and its measurement continues to challenge scholars due to its complexity. A firm performance can be measured with the financial performance indicators.

Firm's performance needs to be distinguished from the broader construct of organizational effectiveness. According to Venkatraman and Ramanujan (1986) offered an enlightening figure of three overlapping concentric circles with the largest representing organizational effectiveness. This broadest domain of organizational effectiveness includes the medium circle representing business performance, which includes the inner circle representing financial performance. Organizational effectiveness covers other aspects related to the functioning of the organization as absence of internal strain and faults, engagement in legitimate activities, resource acquisition and accomplishment of stated goals (Cameron, 2006). Business performance, or firm performance as we refer to it in this study, is a subset of organizational effectiveness that covers operational and financial outcomes.

Measures of Financial Performance

Measures of corporate performance are numerous. Traditional common measures include; Return on Assets (ROA)

and Return on Capital Employed (ROCE). These measures are discussed below.

Return on Assets (ROA)

Return on assets gives an idea as to how efficient management is at using its assets to generate earnings. This is an indicator of how profitable a company is relative to its total assets. It is calculated by dividing a company's annual earnings by its total assets. It is computed as follows:

Return on assets (ROA) = Net income (EBIT) / Total assets (expressed as a percentage).

Return on assets tells us what earnings were generated from invested capital (assets). Return on assets for public companies can vary substantially and will be highly dependent on the industry.

Return on Capital Employed (ROCE)

Return on capital employed is expressed as a percentage and can be very revealing about the industry in which a company operates in, the skills of management and occasionally the general business climate. These therefore indicates the efficiency and profitability of a company's capital investment. It is one of the most important operating ratios that can be used to assess corporate profitability. As a general rule, a firm with a high return on capital employed will probably be a very profitable business. Return on capital employed is calculated as follows:
Return on capital employed (ROCE) = PBIT (Net Income)/Capital Employed

Where: Capital Employed = Total Assets – Current Liabilities = Equity + Non-Current Liabilities.

Objectives of Environmental Accounting

Pramanik, Shil, and Das, (2007) emphasized that environmental accounting is required to fulfill a lot of demands for different stakeholders. However, the following objectives can be identified under the following:

Discharge of Organisation's Accountability: Environmental accounting would enhance the discharge of the organization's accountability and increase its environmental transparency, it helps negotiation of the concept of environment and determines the company's relationship with the society in general and the environmental pressure group in particular. This helps an organization seeking to strategically manage a new and emerging issue with its stakeholders.

Propagation of Environmental Friendliness: Because of the ethical investment movement, ethical investors require the companies to be environmentally friendly. Therefore, by upholding friendly image, companies may be successful in attracting fund from "green" individuals and groups.

Enlightenment of Environmental Commitment through Disclosure: By making environmental disclosure, companies may show their commitments towards introduction and change and thus appear to be responsive to new factors. By installing enlightenment approach of environmental accounting, companies can increase their image of being enlightened to the outside world and this, can be regarded as enlightened companies (Pramanik, et al 2007).

Engaging in environmentally unfriendly industries creates strong public emotion: There is a strong environmental lobby against these industries Green reporting may be used to combat potentially negative public opinions (Bassey, et al, 2013).

Hypotheses

H₀: There is no significant relationship between Environmental accounting and financial performance of oil and gas companies in Nigeria.

H₁: There is a significant relationship between Environmental accounting and financial performance of oil and gas companies in Nigeria.

Research Methodology

The use of secondary data was made in this study for the periods 2015, 2016 and 2017. The data were collected from the Nigerian Stock Exchange (NSE) (Annual Reports and Accounts of the Oil companies in Nigeria under). A total of eleven (11) Oil Companies operating in Nigeria (Niger Delta Region) was randomly selected by the researcher based on the availability of annual reports and accounts in the Nigerian Stock Exchange (NSE). The Oil companies used includes: Niger Delta Exploration & Production Plc, MRS Oil Nigeria Plc, Eland Oil & Gas Plc., Total Nigeria Plc., Chevron Nigeria Plc., Forte Oil Plc., Externa Oil and Gas Plc., Conoil Plc., Mobil Oil Nigeria Plc., Capital Oil Plc., and last but not the least is Eni Energy Plc.

However, these eleven (11) Oil companies qualify for inclusion in the analysis because they have their financial data on the independent variables: air pollution, water pollution, land degradation, staff welfare, community welfare, and externalities. For the purpose of this study, performance shall be measured by the Return on Capital Employed (ROCE), Net Profit Margin (NPM), Dividend Per Share (DPS) and Earning Per Share (EPS).

The model for this study was developed to capture the interrelationships between the dependent variable and independent variables. Thus, the data were analyzed using multiple regression analysis through the use of econometric model specified below:

$ENVC = f(\text{ROCE, NPM, DPS, EPS})$

Where: ENVC = Environmental Accounting Disclosure Costs is the dependent variable
 ROCE, NPM, DPS, EPS are independent variables.

Specifying it in econometric form, we have; $ENVC = + a_0 + a_1\text{ROCE} + a_2\text{NPM} + a_3\text{DPS} + a_4\text{EPS} + \mu t$

Where; a_0, a_1, a_2, a_3, a_4 and μt represent Intercepts and error terms respectively. The apriori expectation is that environmental reporting has positive relationships with independent variables (ROCE, NPM, DPS, and EPS) in the period under study. The amount spent by each Oil company as their environmental costs (on air pollution, water pollution, staff welfare (medical expenses), community welfare and externalities are used as proxies for environmental accounting reporting while ROCE, NPM, DPS, and EPS are used as proxies for corporate performance. The analysis is done based on profitability and investors' indices shown in Table 2 below.

The data obtained from the various financial statements of the eleven (11) companies using the above-stated indices, would be presented in a tabular form. The Multiple Regression Technique would be used for the analysis through the use of the econometric technique. The technique possesses the unique property of Best Linear Unbiased Estimator (BLUE) when compared to other estimating techniques. The Multiple regression estimate also possesses the desirable qualities of not bias, consistency, and efficiency. The statistics tested include the coefficient of determination (R^2), t-test, f-test and Durbin Watson (DW) statistics.

Result and Findings

This study makes use of the data from the published financial statements of eleven (11) Oil companies operating in Nigeria, particularly, the Oil companies in the Niger Delta area. The eleven Oil companies represented the sample size of this study.

Table 1.Descriptive Statistics

Descriptive Statistics	
Environmental Disclosure Costs	N232,516,970
Return on capital employed	41.03%
Net profit margin	15.09%
Earnings per share	76.84 kobo
Dividend per share	4.64 kobo

Table 2. Definition of independent variables

Type of variable	Formula	
Profitability ratio	ROCE (Return on capital employed)	$\frac{\text{Profit before Tax (PBT)} \times 100}{\text{Capital Employed}}$
Profitability ratio	NPM (Net profit margin)	$\frac{\text{Net Profit} \times 100}{\text{Turnover/Sales}}$
Investment ratio	DPS (Dividend per share)	$\frac{\text{Gross dividend} - \text{Preference dividend} \times 100}{\text{No. of ordinary shares in issue and ranking for dividend}}$
Investment ratio	EPS (Earnings per share)	$\frac{\text{PAT before extraordinary items less preference dividend}}{\text{No. of ordinary shares running for dividend}}$

Source: Researchers' compilation (2018)

Where 'PAT' Means, Profit after Tax

Table 3. Descriptive statistics

	N	Mean	Std.deviation
ENVC	33	232516970	265633662
ROCE	33	41.0385	172.11743
NPM	33	15.0867	46.82995
EPS	33	76.8431	315.96598
DPS	33	4.6485	9.01268
Valid N (listwise)	33		

Source: SPSS Output (2018)

Table 4. Results of regression analysis

Variable	Coefficient	t-statistics	p-value
ROCE	.252	1.393	.175
NPM	.011	.063	.950
EPS	.152	.814	.423
DPS	-.114	-.618	.542
Adj.R ²	.306		
Durbin Watson	1.683		

Source: SPSS Output (2018)

The result in table 4 above revealed that the explanatory variables, ROCE, NPM, EPS, and DPS have an insignificant relationship with ENVC with coefficients of .252, .011, .152 and .114 and P-values of .175, .950, .423 and .542 respectively. The 30.6% Adjusted R² indicates the variation in ENVC margin and can be explained by variability in explanatory variables as well as control variables in the model. Durbin Watson value of 1.683 affirmed that there is no first-order autocorrelation among the residuals in the model.

Therefore, the hypothesis that there is a significant relationship between environmental accounting disclosure and performance of the oil companies (H₁) was rejected and the researcher accepted H₁. The result is in agreement with the findings of Ruslaina et al., who found that financial performance has no significant relationship with environmental reporting. However, the result is contrary to the discoveries of Turban and Greening, Cochra and Wood and Makori and Jagongo that found a significant relationship between environmental reporting and firm performance. It is also observed from table 4 that, there are positive relationships between ROCE, NPM, and EPS and the dependent variable, which are in line with the apriority expectation except for DPS that is showing a negative relationship. The positive relationship between NPM and ENVC is in agreement with Makori and Jagongo. The relationship is insignificant due to the fact that the majority of the oil firms' annual reports information on environmental reporting disclosures are qualitative rather than quantitative.

Conclusions

Environmental accounting covers information relating to all aspects of the environment. It serves as a systematic approach in managing the environmental aspects of company activities. this study discovered that with environmental accounting, individuals can track environmental performance of organizations in more measurable manner; the key areas for monitoring are aggregated emission to air, water effluent discharge, soil contamination and boundary noise level. It was also discovered that the lack of environmental reporting and disclosure standards significantly affects the reporting and disclosure uniformity of environmental related information in financial statements, annual reports and accounts. Still on the research finding, it was discovered that environmentally friendly organizations' who voluntary disclose their environmental activities enjoy high level of competitiveness. It was also noted that the environmental issues affect different areas of an organization's operation such as, manufacturing, raw material procurement, energy usage, marketing, product management, disposal and waste management.

Recommendations

Based on the discovery, the researcher recommends among other that the following been put in place:

- Since most organizations hardly report their environmental activities, the government should make environmental reporting in annual reports compulsory thereby passing legislation which will compel companies to integrate environmental issues into their strategic planning process; and the publication of environmental accounting standards both locally and internationally which can be reviewed continually to ensure dynamism compliance.
- Corporate organizations on their part should ensure that they comply with the environmental laws of the nation as it will go a long way in enhancing their performances. And propagation of environmental awareness within the host communities should be encouraged as this will go a long way in creating cordial relationship between the multinational companies and the host communities.
- Government should ensure optimum utilization of proceeds accruing from the sale of our natural resources, as such, the objective disbursement of the funds to all sectors of the economy will enhance quality of life of the people.
- Companies should design products which generate less waste or emission during their life cycle. This can be carried out through life-cycle analysis.

References

- Akinlo, O. O. & Iredele, O. O. (2014). Corporate environmental disclosures and market value of quoted companies in Nigeria. *The Business & Management Review*, 5(3), 14-31
- Ali, M. E. (2002). Transfer of sustainable energy technology to developing countries as a means of reducing

- greenhouse gas emission: the case of Bangladeshi. *Review of Relevant Literature*, 8(2), 10 -15.
- Amponsah-Tawiah, K & Mensah, T (2016). Occupational health and safety and organizational commitment: Evidence from the Ghanaian Mining Industry. *Safety and Health at Work (SHAW)*, 7 (3), 225-230.
- Amponsah-Tawiah, K. & Dartey-Baah K, (2011). Occupational health and safety: key issues and concerns in Ghana. *International Journal of Business and Social Sciences*, 14, 120-126.
- Bala, S. K. & Yusuf, M. A. (2003). Corporate environmental reporting in Bangladesh: a study of listed public limited companies. *Dhaka University Journal of Business Studies*, 24(1), 31 – 41.
- Banwarie, U. R. (2011). The relationship between ownership structure and CRS disclosure. *Unpublished doctoral thesis*, Erasmus National University, Rotterdam, Netherland
- Bassey E. B., Sunday O. E. & Okon E. E. (2013). The impact of environmental accounting and reporting on organizational performance of selected oil and gas companies in Niger Delta region of Nigeria. *Research Journal of Finance and Accounting*, 33(3), 56-71.
- Bela, A. R. (2001). A study of corporate social disclosure in Bangladesh. *Managerial Auditing Journal*, 16 (5), 274- 281.
- Bennett, B. & James, A. (2008). *Regulation of corporate accounting calculates*. The World Press Calcutta Private Limited.
- Beredugo, S. B. & Mefor I. P. (2012). The Impact of environmental accounting and reporting on sustainable development in Nigeria. *Research Journal of Finance and Accounting*, 3 (7).
- Berthelot, S. Cormier, D. & Magnan, M. (2003). Environmental disclosure research: Review and synthesis. *Journal of Accounting Literature*, 22, 1-44
- Brainbridge, D. (2006). Adding ecological considerations to “Environmental” accounting. *Bulletin of the Ecological society of America*, 8 (4), 335-340.
- Callen, S. J. & Thomas, J. M. (1999). *Environmental economics and management: theory, policy and application*. USA: Thomson Learning Publishing.
- Cameron, K. (2006). A study of organizational effectiveness and its predictors. *Journal of Management Science*, 32 (1).
- Carrol, A. B. (2001). The pyramid of corporate social responsibility: Towards the moral management of organizational stakeholders. *Business Horizons* 3, 39-48.
- Cochra PL, Wood RA. Corporate social responsibility and financial performance. *Academy of Management Journal*. 1984; 27(1):42-56
- Cole, G. A. (2002). *Personal and Human resources management*: (5th ed). London Biddles Limited.
- Cooper D. (1995). *Measurement of safety climate: A component analysis*. Institute of Safety and Health (IOSH) meeting on 1 Feb, 1995. Retrieved from <http://www.bAsafe.net/artides/bsms/pdt>.
- Deegan, C, Rankin, M & Tobin, J (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15 (3), 3 12-421.
- Deegan, C. & Gordon, B. (2006). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, 26 (3), 187-199.
- Dessy, A. & Rosita, S. (2015). *The effect of environmental performance and corporate social responsibility disclosures towards financial performance*. 2nd Global conference on Business and Social Sciences GCBSS, 17-18 September 2015, Bali Indonesia.
- Eze, J. C., Nweze, A. U. & Enekwe, C. I. (2016). The effects of environmental accounting on a developing nation: Nigerian experience. *European Journal of Accounting, Auditing and Finance Research*, 4 (1), 17-27.
- Freeman, A. B. (2003). Toward an epistemology for radical accounting: beyond objectivism and relativism. *Critical Perspectives on Accounting*, 6 (1), 485-496.
- Gray, R., Kouhy, R., & Layers, S., (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal*, 8 (2), 47-77.
- Guthrie, J. & Parker, L. (2000). Corporate social disclosure practice: A comparative international analysis. *Advances in Public Interest Accounting*, 3 (1), 159-175.
- Hamid, M. A. (2002). *Theoretical framework for environmental accounting: Application on the Egyptian petroleum sector*. Conference paper available at <http://www.org.eg/9th annual conf./9thh conference-man.php>.
- Hearit, O. (1995). *Environmental accounting where we are now, where we are heading*. Available <http://www.ruenus.org/greenacct.html>
- Horngren, C. T., Datar, S. M. & Foster, G. (2003). *Cost accounting: A managerial emphasis*, 11th edn, Prentice Hall, New Jersey.
- ICAN, (2014). *Management, Governance and Ethics*. UK, Emile Wolf International
- Institute of Chartered Accountants of Nigeria (ICAN) (2009). *Costing and quantitative techniques*. VI publishers Lagos, Nigeria.

- James, B (2008). The benefits of improved environmental accounting: An economic framework to identify priorities resources for the future Washington, DC, 13 – 15.
- Jaroslava, H. and Miroslav, H. (2006). Environmental accounting: an important part of an information system in the conditions when the company approach to the environmental influences its prosperity. *Vadyba/management. Nr;* 3(12), 22- 31.
- Mabogunje, A. I. (2007). Health Challenges of Nigerian Urbanisation Paper Presented at 9th Benjamin Olukayode Osuntokun memorial. *Lecture Presented* at University College Hospital (UCH) Ibadan.
- Makori D, Jagongo A. Environmental accounting and firm profitability: An empirical analysis of selected firms listed in Bombay stock exchange, India. *International Journal of Humanities and Social Science*. 2013;3(18). (Accessed 1 May, 2018) Available:http://www.ijhssnet.com/journals/Vol_3_No_18_October_2013/24.pdf
- Miradha, H. W. Syaiful, A., Ridho, P. O. Awang, A. Kevin, S. G. & Totok, R. B. (2017). 3R implementation in waste management at PT. PJB UP Muara Tawar. *Journal of Business and Management*, 19 (6), 64-70.
- Nwaiwu, N. J. & Oluka, N. O. (2018). Environmental cost disclosure and financial performance of oil and gas in Nigeria. *International Journal of Advanced Academic Research*, 4 (2), 1 – 23.
- Obara, L. C. & Nangih, E. (2017). Accounting Practices and Performance of Oil and Gas Industry (Upstream Sector) in Nigeria: An Empirical Analysis. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7 (2), 215–222.
- Oti, P. A. & Mbu-Ogar, G. B. (2018). Analysis of environmental and social disclosure and financial performance of selected quoted Oil and Gas Companies in Nigeria (2012-2016). *Journal of Accounting and Financial Management*, 4 (2), 1 – 12.
- Oti, P. A. Effiong, S. A., & Akpan, D.C. (2017). Accounting perspective of environmental footprint of the Oil and Gas Industry in the South -South region of Nigeria. *Journal of Accounting and Financial Management* 3 (3), 1-11
- Parker, L. D. (1986). Polemical themes in social accounting: A scenario of standard setting. *Advances in Public Interest Accounting*, 1. 67-93.
- Pramanik, A.K; Shil, O.H & Das, A.B. (2007). *Environmental accounting and reporting*, New Delhi, Deep Publication P.V.T ltd.
- Prickard, M., and Wendy, V. (2000). Environmental audit-working within a restricted mandate, draft paper -20 October, 2000. Office of the controller and auditor-general. New Zealand available at <http://www.auditinggovt-nz/library/literary>.
- Ruslaina Y, Shariful A, Wan N. The economic consequences of voluntary environmental reporting on shareholders' wealth. Paper Presented at Conference on Scientific and Social Research, MARA University of Technology, Sunway Lagoon Resort Hotel, Kuala Lumpur; 2010.
- Schattegger, S. and Sturm, A. (2008). "Okologiseherationalitat: arisazpunkte zur ausgestaltung von okologischer orientierten management instrumenten die unternehmung 4. 273 -278.
- Seetharaman, A. Mohamed, I. & Saravanan, A.S (2007). Environmental accounting as a tool for environmental management system. *Journal of Applied Science, Environment and Management* 2 (2), 137-45.
- Shell Petroleum Development Company (SPDC), (1995). Shell and the Nigerian environment. Public Affairs Department.
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20 (2), 571-610.
- Tapang, A. T. Bassey, E. B. & Bessong, P. E. (2012). Environmental activities and its implications on the profitability of oil companies in Nigeria. *International Journal of Physical and Social Sciences*, 2 (3), 30-32.
- Tilling, M. (2004). Communication at the edge. Voluntary social and environmental reporting in the annual report of legitimacy threatened corporation, APIRA conference proceedings Singapore. Tool: Key Concepts and Terms, United States Environmental Protection Agency, Washington, D.C.
- Trotman, K. (1999). Social responsibility disclosure by Australian companies. *The Chartered Accountant in Australia*, 24 -28.
- Turban DB, Greening DW. Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*. 1997; 40(3):658-672.
- Veber, J. (2000). Management-basics, prosperity, globalization plague, management press.
- Watts, R. L. & Zimmerman, J. L. (1986). *Positive accounting theory*. London: prentice-hall.
- Wilmshurst, J. D. & Frost, G. R. (2000). Corporate environmental reporting: A test of legitimacy theory. *Accounting, Auditing and Accountability Journal*, 13 (1), 10-26.