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RESEARCH ARTICLE

EFFECT OF ENVIRONMENTAL ACCOUNTING AND THE CORPORATE PERFORMANCE OF SELECTED QUOTED COMPANIES IN NIGERIA

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ABSTRACT

Most oil and gas quoted companies in Nigeria have often given insufficient attention to the communities where they operate, this is usually because of the need to regularly increase their profit maximization strategy. This study focuses on the effect of Environmental Accounting and the Corporate Performance of Selected Quoted Companies in Nigeria. Ten (10) quoted oil companies were randomly selected from the Nigerian Stock Exchange. The secondary data used were from the audited financial statements of the Oil companies. Environmental accounting reporting was measured by environmental cost and disclosure. The corporate performance of the Oil companies was measured using return on capital employed (ROCE); net profit margin (NPM), Return on Equity (ROE) and Return on Assets (ROA). The data were analyzed using multiple regression analysis. The findings of the result show that there is significant positive relationship between environmental accounting and Return on Capital Employed (ROCE) and net profit margin (NPM), Return on Equity (ROE) and Return on Assets (ROA).Based on the findings, it is therefore recommended that government should make environmental disclosure compulsory and also impose sanctions on the violation by any Oil company in Nigeria; compliance by the Oil companies should be taken seriously so that the environment will be safe for economic growth and development. Government should give tax credit to organizations that comply with its environmental laws and that environmental reporting should be made compulsory in Nigeria so as to improve the performance of organizations and the nation as a whole.

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INTRODUCTION

Environmental accounting is an issue that has since the early 1970s gradually taken the center-stage in international discussion. The movement for environmental accounting and conservation of natural resources began in the advanced countries[i]. In 1992, the United Nations Framework Convention on Climate Change was signed by most countries to consider steps to reduce global warming and palliate climate change. In 1997, a treaty known as the Kyoto Protocol was signed, setting binding targets for 37 industrialized countries and the European community to reduce their greenhouse gas (GHG) emissions. It should be noted that environmental accounting and reporting awareness only began to feature prominently in the scheme of things in most developing countries in the decades of the 1980s and 1990s. This is not surprising. Third World countries confront more urgent problems of how to satisfy the immediate basic needs of the populace and are preoccupied with the attempt to generate a faster rate of economic growth. The concern for the environment was thus considered premature by some analysts[ii].

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It was indeed reasoned that Third World countries could ill-afford the luxury of being concerned with the environment at the expense of the attempt to break off the shackles of poverty and underdevelopment. Interestingly, most developing nations have today experienced serious effects of environmental degradation. This has in turn impacted positively on the level of environmental awareness of these nations, including Nigeria. However, there is yet a yawning gap between the increasing environmental awareness on the one hand and effective positive actions towards environmental accounting on the other hand. The unfortunate situation exists at the levels of government, corporate bodies, communities, and individuals [iii]. Environment accounting 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. In this sense, it is a comprehensive approach to ensure good corporate governance that includes transparency in its societal activities. [iv] Accounting for the environment helps an inaccurate assessment of the cost and benefits of environmental preservation measures of companies. [v] It provides a common framework for organizations to identify and account for past, present, and future environmental costs to support managerial decision making, control, planning, and public disclosure. [vi] Environmental accounting helps present in

a transparent manner, the utilization of natural resources of the country, the cost incurred to use them, and the income earned there from. It helps in measuring the contribution made by various companies in fulfilling their social responsibilities. [vii] One way of making use of environmental data is by way of disclosure. By this, those users of the information would get an understanding of the company's stance on environmental conservation and how it specifically deals with environmental issues. [viii] 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 the government becomes another option to protect the environment from being ruined. The disclosure of environmental accounting information as one of the key elements in an environmental report enables those parties to utilize this information to get an understanding of the company's stance on environmental conservation and how it specifically deals with environmental issues. Thus, Environmental Accounting disclosure should generate benefits, to be a sustainable business practice. A corporation should not continue a policy that generates negative cash flow. [ix] Therefore, Environmental Accounting disclosure should have bottom-line benefits to be gain significant performance.

The increase in global environmental awareness and the campaign for sustainable economic development is redirecting the attention of firms towards environmental sensitivity. [x] The quest for sustainability has caused an emergence of many global institutions enunciating varying norms that guide human interaction with the environment. These standards are influencing business corporations to understand that their strategic position in society has the power to influence behavior and alter the state of physical, social and economic environment. Environmental accounting describes the effort of accounting standard setters, professional organizations and governmental agencies to get corporations to participate proactively in cleaning and sustaining the environment and to describe fully, their environmental activities in either their annual reports or stand-alone environmental disclosure. Environmental accounting is seen by corporate managers and environmental advocates alike as a necessary complement to improved environmental decision-making in organizations. Whether the goal is pollution prevention, or some broader notion of "corporate sustainability", there is a widespread belief that sound environmental accounting will help firms identify and implement financially desirable environmental innovations. [xi]

Although environmental regulation, pressure group activity, and consumer awareness is weak in developing countries, some corporations in these countries are becoming conscious of their international market and are making appreciable effort as regards environmental practices. The result of sampled companies in Nigeria shows that few companies are becoming environmentally friendly. However, a large number of firms are still apathetic about their environmental and social responsibility. Based on this divide, this study examines the relationship between environmental accounting and corporate performance of selected quoted companies in Nigeria.

Statement of the Problem: The response of firms to environmental liabilities has brought about the reconfiguration of corporate performance indices in a larger context under the subtle influence of environmental and social factors, in order to develop a holistic panorama of an entity's performance. This has led to a growing demand from various stakeholders for measurement of a company's environmental practices and subsequent public disclosure of this information. As a result, a new area of accounting has emerged regarding environmental accounting. The interest of accounting in the environment emerged from the reality that management needed financial data on environmental expenditures as a result of the increasing needs of different stakeholders such as; government, investors, lenders, general public, customers, etc., to have financial data on environmental performances of different organizations reported in financial statements [xii].

Nowadays, companies cause a lot of environmental challenges because of profit maximization, the endless needs, rapidly advancing technological developments, unconscious consumption of natural resources as they execute their operations [xiii]. The severity of environmental problems as a global phenomenon has its adverse impact on the quality of our lives. Accounting has an instrumental role in disclosing environmental responsibility for different entities whether industrial or commercial services and at all levels whether micro and macro. Thus, accounting became concerned with achieving new goals such as measuring and evaluating the potential or actual environmental influence of projects and organizations. [xiv] Consequently, the absence of comprehensive and verifiable information on environmental practices of companies may signal a practice where companies can pollute the environment and yet appear more economic efficient than others which incur costs to protect the environment. Based on these problems, the researcher deemed it necessary to examine how the quoted companies in Nigeria can manage their environmental accounting and at the same time earn profit for overall corporate performance.

Research Questions

- What is the effect of environmental accounting costs on the return on equity of selected quoted companies in Nigeria?
- To what extent is the effect of environmental accounting disclosure on the return on assets of selected quoted companies in Nigeria?

Objective of the Study: The main objective of the study is to evaluate the effect of environmental accounting and the corporate performance of selected quoted companies in Nigeria. Hence the following are the specific objectives:

- To determine the effect of environmental accounting cost on the return on equity of selected quoted companies in Nigeria
- To ascertain the effect of environmental accounting disclosure on the return on assets of selected quoted companies in Nigeria

Research Hypotheses: The following hypotheses formulation can be tested in this study

H_{O1}: There is no significant influence of environmental accounting cost on return on assets of selected quoted companies in Nigeria.

H_{O2}: There is no significant influence of environmental accounting disclosure on return on assets of selected quoted companies in Nigeria

REVIEW OF RELATED LITERATURE

A study on corporate social sustainability reporting and the financial performance of the Oil and Gas Industry in Nigeria [xv]. The study assessed the effect of corporate social sustainability reporting on Return on Assets, Return on Equity, and Return on Capital Employed by oil and gas companies listed on the Nigeria Stock Exchange. Ten oil and gas companies were sampled for the study. The study utilized secondary data collected via financial ratios and accounts of the individual companies and content analysis. The findings showed that social sustainability reporting exerts a negative effect on all three performance proxies, howbeit only its effect on return on equity was statistically significant. The study recommends, among others, that existing sustainability reporting standards should be aligned to reflect country-specific social and environmental challenges, while its implementation should rather be obligatory rather than voluntary.

Another study examined the nature of the relationship existing between environmental accounting reporting and Oil companies' performance in Nigeria. [xvi] Eleven (11) quoted oil companies were randomly selected from the Nigerian Stock Exchange. The secondary data used were from the audited financial statements of the Oil companies. Environmental accounting reporting was measured by the costs of air pollution, water pollution, land degradation, staff welfare, community welfare, and litigations. The performance of the Oil companies was measured using a return on capital employed (ROCE); net profit margin (NPM), dividend per share (DPS), and earnings per share (EPS). The statistics used in testing the hypothesis is multiple linear regression. The results of the analysis showed insignificant relationships between environmental accounting reporting and performance variables, that is, return on capital employed ($P = 0.175$), net profit margin ($P = 0.95$), earnings per share ($P = 0.423$), and dividend per share ($P = 0.542$). Based on the findings, it is therefore recommended that the government should make environmental disclosure compulsory and also impose sanctions on the violation by any Oil company in Nigeria; compliance by the Oil companies should be taken seriously so that the environment will be safe for economic growth and development.

A recent study examined the effect of environmental and social costs on the performance of manufacturing companies in Nigeria [xvii]. The objectives of this study are to examine the relationship between environmental and social costs and the performance of manufacturing companies in Nigeria. The data for the study was collected from annual reports and accounts of fourteen (14) randomly selected manufacturing companies in Nigeria. The data were analyzed using multiple regression models. The key findings of the study showed that there is a significant negative relationship between environmental and social costs and Return on Capital Employed (ROCE) and Earnings per share (EPS) and a significant positive relationship between environmental and social costs and Net Profit Margin (NPM) and Dividend per Share (DPS). Based on this it was recommended that the government should give a tax credit to organizations that comply with its environmental laws to reduce their environmental costs and that environmental reporting should be made compulsory in Nigeria to improve the performance of organizations and the nation as a whole. Another study ascertained the effect of environmental costs on firm performance. To achieve this objective, the study made use of financial reports of Oil and Gas Companies quoted in the Nigerian Stock Exchange Market from the years 2006-2015. [xviii] Regression analysis was employed with the aid of the Statistical Package for Social Sciences (SPSS). The results of the statistical analysis indicate that better environmental performance positively impacts the business value of an organization. Moreover, environmental accounting provides the organization an opportunity to reduce environmental and social costs and improve its performance.

A study also identified environmental accounting issues and the effects of these environmental factors on the life of Nigerians. The degrading of natural resources and the continued greenhouse gas emissions in Nigeria are on the increase and of concern to the stakeholders, hence the need for increased information on the organizations' influence on the environment [xix]. It was discovered that environmentally friendly organizations that voluntarily disclose their environmental activities enjoy a high level of competitiveness. Environmental accounting motivates organizations to track their greenhouse gas emissions and other environmental elements against reduction or elimination points. It was recommended that companies should adopt acceptable and uniform standards for control and measurement of performance, and should design products which generate less waste or emission during their life cycle.

Environmental Accounting: Environmental accounting is defined as the collection, analysis, and assessment of environmental and financial performance data obtained from business management information systems, environmental management, and financial accounting systems. The taking of corrective management action to reduce environmental impacts and costs plus, where appropriate, the external reporting of the environmental and financial benefits in verified corporate environmental reports or published annual reports and accounts. [xx] It is a growing field in Accounting that identifies resource use, measures, and communicates the costs of an organization or national economy's actual or potential impact on the environment. [xxi] Environmental accounting is an inclusive field of accounting which provides information for both internal uses, that is, providing environmental information relevant for management use in the area of pricing, regulating expenditure and budgeting; and external use which involves disclosing environmental information of public interest to the public and the financial community. [xxii] The authors noted that with the increasing focus on the environment, Accounting fills an expectation role in the measurement of environmental performance. Environmental Protection Agency, [xxiii] defined environmental accounting as "the identification and measurement of the costs of environmental materials and activities and using this information for environmental management decisions".

Table 4.3. Result of Regression Analysis of environmental accounting and the corporate performance

Dependent Variable: ROE				
Method: Least Squares				
Date: 09/21/20 Time: 21:25				
Sample: 1 40				
Included observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EAD	0.811754	0.045122	17.99007	0.0000
ENVC	0.019510	0.008377	2.329068	0.0259
ROA	0.000140	0.000142	0.988821	0.3297
ROCE	0.000409	0.000260	1.573423	0.1249
NPM	0.422709	0.462855	0.913265	0.3675
EAA	1.632138	0.196504	8.305861	0.0000
R-squared	0.971941	Mean dependent var		5.892677
Adjusted R-squared	0.967815	S.D. dependent var		0.735684
S.E. of regression	0.131984	Akaike info criterion		-1.074794
Sum squared resid	0.592270	Schwarz criterion		-0.821462
Log likelihood	27.49589	Hannan-Quinn criter.		-0.983197
F-statistic	235.5462	Durbin-Watson stat		0.771727
Prob(F-statistic)	0.000000			

Source: E-views Result, 2020.

The purpose is to recognize and seek to mitigate the negative environmental effects of activities and systems. Howes [xxiv] defined environmental accounting as: 'the generation, analysis and use of monetarized environmentally related information to improve corporate environmental and economic performance'. To Howes, [xxv] environmental accounting does not only focus on internal and external environmental accounting but makes the link between environmental and financial performance more visible. It assists in getting environmental sustainability integrated within an organization's culture and operations.

Definition of Environmental Costs: Environmental costs are costs incurred by companies to protect the environment, prevent environmental problems, and minimize damages to the environment. They are those costs incurred in compliance with, or prevention of breach of environmental laws, regulations, and company policies. However, the true environmental costs to a firm can be far broader, including costs of resources both directly related to production and those involved in general business operations, waste treatment and disposal costs, the costs of poor environmental reputation, and the cost of paying an environmental risk premium. The U.S. Environmental Protection Agency [xxvi] defines environmental costs as those costs that have a direct financial impact on a company (internal costs), and costs to individuals, society and the environment (external costs). Any activity conducted by enterprises in their environments leads to the emergence of environmental costs. Some of the environmental costs arise as a result of actions taken to protect the environment and occur as a result of the use of environmental resources. Another part of these costs arises due to environmental pollution caused by these companies. Environmental costs can be divided into three different groups: reduction costs, operating costs, and damage costs. [xxvii]

Environmental Disclosure: Corporate financial disclosure is any deliberate release of quantitative or no quantitative information required by law or voluntary through any channel. [xxviii] Companies make disclosures using annual reports, conference calls, analyst presentations, investor relations, interim/quarterly reports, prospectuses, press releases, websites, sustainability reports, etc. [xxix] The annual report however has been reported to be the most important disclosure medium as a significant positive relationship was found to exist between disclosures in the annual report and other forms of disclosures. [xxx] The problem of information asymmetry and agency conflicts between management and external investors influences the demand for corporate information through disclosures, thus enhanced disclosures are expected to solve these problems. [xxxi] Companies are facing pressures to demonstrate responsibility towards the environment; in responding to these pressures' companies make disclosures on the environmental impact of their activities. Environmental disclosure, therefore, refers to the process of communicating the environmental effects of a company's activity to a particular interest group in the society or the society at large. [xxxii] According to Elkington, [xxxiii] environmental disclosures are used as a public relations tool to reassure the public as well as building the company's image. The disclosure is aimed at providing information to stakeholders about the environmental impact and operational performance of a company for stakeholders to take stock and assess their relationship with the company (Brophy and Starkey, 1996).

Theoretical Framework

Stakeholders' Theory: ***Proponents:*** 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. [xxxiv] In developing the stakeholder theory. It incorporates the stakeholder's concept into categories (i) a business planning and policy model, and (ii) a corporate social responsibility model of stakeholder management. In the first model, the stakeholder analysis focus on developing and evaluating the approval of corporate strategy decisions by groups whose support is required for the firm's continued existence. The stakeholders identified in this model include the owners, customers, public groups, and suppliers. Although these groups are not adversarial, their possibly conflicting behavior is considered a constant on the strategy developed by

management to best match their firm's resources with the environment. [xxxv] In the second model, the corporate planning and analysis extend to include external influences which may be adversarial to the firm. These adversarial groups may include the regulatory environmentalist and/or special interest groups concerned with social issues. [xxxvi] Second, the model enables managers and accountants to consider a strategic plan that is adaptable to change in the social demands of non-traditional stakeholders' groups. The stakeholder's theory proposed an increased level of environmental awareness which creates the need for companies to extend their corporate planning to include the nontraditional stakeholders like the regulatory adversarial groups to adapt to changing social demands. [xxxvii]

Strengths: Stakeholder theory is the most popular theory used by researchers in the studies of environmental disclosures. Stakeholders are individuals who benefit or harmed directly or indirectly by corporate actions. The Theory is a paradigm shift from the shareholder only company to company with interest in all social groups relating to the company. According to Deegan, [xxxviii] all stakeholders have the right to be treated fairly by a company, thus all stakeholders' groups have rights to information irrespective of their influence on the company's financial performance. [xxxix] Stakeholder theory is generally concerned with the way an organization manages its stakeholders. [xl] *Relevance to the Study:* Corporate environmental reporting is used strategically to manage relationships with stakeholders; thus, the expectations of the different stakeholders will influence the organization's operation and disclosure policies. The stakeholder theory is the most useful framework in explaining voluntary corporate environmental disclosures. The stakeholders' demand for environmental disclosures is characterized as being stakeholder issues because the production of such information is still unregulated in developing economies, especially in Africa. 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.

RESEARCH METHODOLOGY

This research employs *ex-post facto* design. The population of the study involves all quoted companies on Nigeria stock exchange which are about 192 quoted companies but for the course of this study we would consider only 5 Oil companies Exxon Mobil, Total, FORTE, Shell, Chevron. The data collection method adopted was secondary data. The secondary data on ROE, ROA, NPM &ROCE were obtained from the Nigerian Stock Exchange Fact Book and Annual Reports and Accounts of the firms quoted on the Nigerian Stock Exchange.

RESULT AND FINDING

Regression Analysis: From the result presented above, all the variables except Return on Capital Employed (ROCE) and Net Profit Margin (NPM), Return of Asset (ROA) are in line with the priory expectation. Also, we see that Environmental Accounting cost and disclosure has a positive relationship with the Net Profit Margin (NPM) and Return on Capital Employed (ROCE) and Return of Asset (ROA) in the period under study. Using the Coefficient of variation from the model presented above, it will be observed that autonomous Environmental Accounting which is represented by Environmental Cost (ENVC) is a positive0.019510 when all other variables are held constant. Consequently, a unit change in Environmental Cost (ENVC) will lead to positive change of about0.000409 units in ROCE less the autonomous component provided all other variables are held constant. Also, a unit change in ENVC provided all other variables are held constant will have a positive change of about0.019510 units in NPM less the autonomous component. Furthermore, a unit change in ENVC will lead to a positive change of about 0.422709units in NPM less the autonomous component. And a unit change in ENVC will lead to a positive change of 0.000140units in ROA.

Using the T- Ratio to test for their statistical significance, we find out that only NPM and ROCE variables are statistically significant. This is due to the fact that their observed T- values are positive and above the "rule of thumb of 2". The other variables are statistically insignificant because their observed t-values are either negative or far less than the 'rule of thumb' of 2. From the R- squared of 0.971941, the regression co-efficient indicates that about 97% of the changes in the dependent variable is explained by the changes in the independent variables. The F- value of 235.5462indicates that the parameter estimate cannot be dismissed at 5% level of significance. This is due to the fact that the calculated F- value is more than the critical F-value. The D.Wstatistic of 0.771727indicates the presence of auto – correlation. To test for the above hypotheses, we have to consider the test of significance which is the F-statistic. The tool off-statistic helps in determining the overall joint significant of the explanatory (independent) variables on the dependent or explained variable. At 5% level of significance, F critical or F tabulated is 0.001 when comparing this with the calculated value from the above table, which is235.5462. The decision rule is that, if the calculated value is greater than the tabulated, reject null hypothesis (H0). Hence, the null hypotheses are rejected since f-cal (235.5462) is greater than the f-tab (0.001). It indicates that the explanatory variables are jointly significant at explaining or causing much variation in the dependent variable (Environmental cost). We therefore reject the null hypotheses, which means that Environmental Accounting has significant relationship with the various variables used in measuring corporate performance. It is also necessary to note that this relationship with the variables of corporate performance is either positive or negative.

CONCLUSION

Environmental costs cover all costs incurred concerning environmental protection such as emissions treatment as well as wasted material, capital and labor which so called 'non product output' as a result of inefficiency production activities. Different firms may consider different elements into environmental costs but itis important that all significant and relevant costs are incorporated for sound decision making purpose. The general picture, which emerges from current reporting, is that since the disclosures of environmental information are voluntary, there is a diversity of reporting practice. Large companies tend to report more environment information in their annual reports than the medium-scale businesses; and the disclosure, tend to be more qualitative than quantitative despite the fact that there is a significant relationship between environmental Accounting and Corporate performance.

RECOMMENDATIONS

Based on the findings of this study the following recommendations are made:

- Government should make Environmental Reporting in annual reports compulsory since mostorganization hardly report their environmental activities in their report.
- Government agencies should give tax credit to organizations that comply with its environmental laws ofthe land which will encourage environmental reporting
- Corporate organizations on their part should ensure that they comply with the environmental laws of thenation as it will go a long way in enhancing their performances.

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