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Analysis of Listed Nigerian Basic Materials Sector Companies' Environmental Accounting and Corporate Performance Nexus

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ABSTRACT
There is an increased awareness of the interaction between organizations and the environment in which they operate in recent times; and for organizations to achieve performance on a consistent basis and sustain corporate growth they need to meet the environmental accounting and reporting demands of stakeholders. Therefore this study examined the association between environmental accounting and corporate performance of the Nigerian Stock Exchange quoted basic materials sector companies for the period 2011 to 2020. Environmental accounting parameter was regressed against profit after tax and earnings per share as proxy for performance. Secondary data was obtained from the annual reports of six companies used as sample out of the 12 basic materials listed firms in an ex post facto research design. The study employed multiple regression analysis based on the OLS technique with the aid of E-views 9 software in order to determine the direction of relationship between the variables. The results showed that environmental accounting had significant association with corporate performance among the basic materials sector listed companies in Nigeria. The evaluation specifically revealed that environmental accounting had a negative and significant relationship with profit after tax, but a positive and significant link with earnings per share. Based on the findings of this study it was recommended that managers of basic materials sector companies should maintain and increase the current environmental accounting framework, because it will increase the shareholder value; and other basic materials sector companies who are yet to be involved in environmental accounting should indulge in this practice.

KEYWORDS: Basic materials, Corporate, Earnings, Environmental accounting, Performance, Profit

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I. INTRODUCTION

An entity can be established but for it to be a going concern there should be a consistent positive corporate performance. Performance here refer to improve turnover as a result of patronage from the consumer community which will in turn reflect on the net profit for the year. However, for an entity to achieve these corporate profit, sustainability and growth on a consistent basis, they should meet the stakeholder accounting and reporting demand on environmental accounting (Iliemena, 2020). Environmental accounting is a significant issue of sustainability accounting and reporting, thus, it emanates reviews that offer environmental facts to assist make inner control choice and outside use via way of means of stakeholders. Nevertheless, the business environment is apparently becoming an issue of concern to the local community, customer and investor which has increased the interest at large on social and environmental question.

There has been an increased awareness of the interaction between organization and the environment in which they operate in recent times. This discovery has been hastening by concern about resource scarcity, environmental degradation and firm's activities that destroy the ozone layers and thereby causing an imbalance in the environment. The daily concern about the effect of firm's activities on the environment have resulted to the development of environmental accounting in areas of significance. This therefore means that inn modern time, the success and failure of an organization may be determined not only by the product or services it offers to customer but also by the way it interact to the complexity of its environment.

The gravity of environmental problems in Nigeria and beyond is known to have negative impact on life expectancy generally. According to Yakhon and Dorweiler (2004), the impact of business activities on the environment is found in several forms which include air, water, underground pollution, drinking water, land and habitat for endangered and threatened species, oceans, atmosphere, and land pollution. As it is obvious that firm's activities give rise to industrial pollution, deforestation, oil spillage, and gas flaring, and measures are being taken both at the national and international level to curtail its economic, social and health impacts generally.

The researchers observed from the empirical literature reviewed that environmental accounting disclosure and reporting has received a lot of attention from both scholars and non-academic investigators around the world. Most of the researches carried out looked at the impact of environmental accounting disclosure on the profitability of companies (Daniel & Ambrose, 2013; Nkwoji, 2021; Nwaiwu & Oluka, 2018; and Utile, Tarbo & Ikya, 2017), while some others focused on the impact of environmental accounting on stock price of the firms (Omoike, Uwalomwa, Olubukola, Ilogho & Ajetunmobi, 2018, and Thi, Ngoc & Thi, 2019). Whereas most of these studies were conducted in countries where the business environment is quite different from that of ours (Daniel & Ambrose, 2013; & Thi, Ngoc & Thi, 2019); but even the ones carried out in Nigeria focused on the oil and gas industry (Iliemena, 2020; Bassey, Sunday, & Okon, 2013; Ikpor, Ituma & Okezie, 2019; Nkwoji, 2021; and Nwaiwu & Oluka, 2018). This therefore means that little or no research has been carried out on basic materials sector companies. This has created a research gap which this study on the effect of environmental accounting on corporate performance using ten years empirical data spanning from 2011 to 2020 from the basic materials manufacturing sector of the Nigerian Stock Exchange in contribution to filling that gap.
The main objective of the study is to examine the impact of environmental accounting on corporate performance in Nigeria with focus on listed basic materials companies. While the specific objectives are to:

1. Examine the relationship between environmental accounting and profit after tax of listed basic materials sector companies in Nigeria.
2. Determine the relationship between environmental accounting and earnings per share of listed basic materials sector companies in Nigeria.

These objectives formed the basis of the research questions answered and hypotheses tested in this study. Furthermore, this study on the relationship between environmental accounting and corporate performance is significant because it provides useful insight for managers of companies manufacturing basic materials on how environmental accounting relates to their performance and the attainment of their sustainable goals. The study also provided a useful guide for the management of basic materials sector companies in decision making and formulating appropriate policies regarding environmental and socially responsible practices.
The rest of the paper dwelt on the review of related literature; the methodology adopted for carrying out this study; the results of data analysis and discussion of findings; and at the end the summary, conclusion and recommendations respectively.

II. REVIEW OF RELATED LITERATURES

Conceptual Clarifications

Environmental Accounting

Protection of the environment has become a topic for discussion all over the world in recent times. So many factors are responsible for destruction of environment. One of the major factor is growing hazardous industrialization all over the globe. The issue of environmental accountability and the sustainable industrial development has given birth to environmental accounting and reporting.

Studies have shown that environmental accounting is relatively a recent entrant in the domain of accounting. It therefore refers to the process of identification, measurement and communication of information about the environmental performance of an entity to permit economic decision (Dauda & Suleiman, 2018). In the other words, Environmental accounting forms that part of accounting that deals with environmental concerns.

The concept of environmental accounting has given room for authors to variously define it. Uwuigbe (2011) defined environmental accounting as an inclusive field of accounting that provides reports for both internal uses, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting, and external use; disclosing environmental information of interest to the public and to the financial community. Steele & Powell (2002) sees environmental accounting as that aspect of accounting which has to do with the identification, allocation and analysis, of material streams and their related money flows by using environmental accounting systems to provide insight in environmental impacts and associated financial effects. Leontief (1970) viewed that, it is an accounting system that can be used to support the National income accounting, Financial accounting, and or internal business managerial accounting. Environmental or green accounting involves measuring the environmental performance of an organization, including government bodies and manufacturers in economic terms. It is a type of cost benefit analysis system, which relates to the monetary assessment of environmental costs associated with the development and operational activities and the economic benefits of good environmental management (United Nations, 2000).

In addition to the above definitions, the International Federation of Accountants (2005) defined environmental accounting as the management of environmental and economic performance through the development and implementation of appropriate environment related accounting systems and practices. While this may include reporting and auditing in some companies, environmental accounting typically involves life cycle costing, full-cost accounting, benefits assessment, and strategic planning for environmental management.

A more distinctive definition was provided by the United Nations Expert Working Group (2001) on environmental accounting, which highlighted both the physical and monetary sides of environmental accounting. This definition was developed by international consensus of the group members, representing 30 nations. According to them, Environmental accounting involves the identification, collection, analysis and the use of two types of information for decision-making: i) Physical information on the use, flow of energy, water and materials (including wastes) and (ii) Monetary information on environment-related costs, earnings and savings.

Corporate Performance

Corporate performance can be viewed, as the level of performance of an organization at a point in time. This could be measured in terms of overall profits and losses or asset utilization. According to Iliemena and Okolocha (2019) the measures of financial performance of an organization are as varied as the motive for the measurement. Corporate performance is measured to give the account of stewardship by the management team to the shareholders. The key aspect of this involves measuring the profitability, market value and growth prospect of a company. The measurement of the effect of environmental accounting on performance examines the nature of the relationship between some indicator of environmental reporting or performance with the company's financial performance obtained from the accounting information such as the historical audited financial statements of the respective companies (Iliemena, 2020). Financial performance is mostly used as an indicator of an organization financial health over a given period of time. Corporate performance can be defined or measured in various ways including profitability, increase in turnover, gauge return, market share growth, return on investment, return on equity, return on capital employed and liquidity measures.

Although management efficiency can be measured in a lot of ways including the profitability or reported profit, this can only be achieved through implementation of adequate policies to cut down operating costs (Iliemena & Amedu, 2019). A firm can, by being environmentally sustainable, differentiate its products and thus increase its turnover. Similarly, a firm can save costs on resources, regulatory costs, capital and labour and wherefrom increase its net profits and return on capital employed. Environmentally friendly organizations generate cost savings on environmental litigations, which also add to corporate profitability.

Theoretical Frameworks

This study is anchored on two theories: the legitimacy theory and the stakeholder's theory.

Legitimacy Theory

The legitimacy theory is probably the most widely used to explain environmental disclosure. The theory implies that environmental disclosure is a function of the intensity of societal and political pressure faced by a company regarding the environmental performance (Deegan, Rankin, & Tobin, 2002). As a reaction on this pressure, companies try to provide more environmental information. 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). According to Tilling (2008), legitimacy theory offers a powerful mechanism for understanding voluntary social and environmental disclosure made by companies, and that this understanding would provide an avenue for engaging in critical public debate.

This theory proposes that a company may be in one of four phases with regard to its legitimacy, which are: establishment phase, maintaining phase, extending phase, and defending phase. Establishing legitimacy which represents the early stages of an organization development and tends to revolve around issues of competence, particularly financial, but the organization must be aware of socially constructed standards of quality and desirability as well as performance in accordance with accepted standards of professionalism ((Hearit, 1995).

Maintaining legitimacy is the phase that most organizations would generally expect to be operating in, where their activities include: ongoing role performance and symbolic assurance, that all is well, and attempts to anticipate and prevent or forest all potential changes to legitimacy (Ashford & Gibbs, 1990)). However, the maintenance of legitimacy is not as easy as it may at first appear because of some dynamic construct community expectations.

Extending legitimacy refers to when an organization enters new markets or changes the way its relates to its current market. This can increase the need to extend legitimacy which is apt to be intense and proactive as management attempts to win the confidence and support of wary potential constituents (Ashford & Gibbs, 1990).

Defending legitimacy occurs when legitimacy is threatened by an incident (internal or external) and therefore requires defense. Legitimation activities tend to be intense and reactive. Even baring a major incident, it is likely in the capitalist system that almost every corporations will regularly needs defend its legitimacy, but the fact that corporation must fulfill both a competence and community concerns while, conversely, responsibility to the larger community requirements to realize legitimacy, satisfaction of stakeholders interested often occurs at the expenses of community concern while, conversely responsibility to the larger community often occurs at the expense of the stockholders (Hearit, 1995).

Stakeholders Theory

The fundamental assumptions of this theory is that a company's success rely upon the successful management of all the communications that the management has with its stakeholders; and this ideology emanated from Stanford Research Institute (SRI). For better understanding of the stakeholder theory, Freeman (1983) divided the stakeholders' concept into two models; (i) a business planning and policy model, and (ii) a corporate social responsibility model of stakeholder management.

Under the business planning and policy model, the stakeholder analysis focus on the development and evaluation of the corporate strategic decisions taken by the company and the reaction from the groups whose continuous support is required for the company's continued existence. The stakeholders in this model refers to the owners, customers, public and suppliers. Overtime, it has been observed that the stakeholders' interest is always similar but the possibility of having a conflicting behavior is considered a constant on the strategy developed by management to best match the company's resources with the environment (Deegan & Gordon, 1996).

Under the corporate social responsibility model of stakeholder management, the corporate planning and analysis stretched to include external factors which may be hindrance to the company. These adversarial include the regulatory environmentalist and/or special interest groups concerned with social issues (Guthrie & Parker, 1990). This model assist management to consider a strategic plan that is flexible to changes in the social demands of nontraditional stakeholder's groups. The stakeholder's theory suggests an increased level of environmental awareness which creates the need for companies to extend their corporate planning to include the non-traditional stakeholders like the regulatory adversarial groups in order to adapt to changing social demands (Trotman, 1999).

Empirical Review

Nkwoji (2021) investigated the relationship between environmental accounting and profitability of selected quoted oil and gas companies in Nigeria. Specifically, it examined the relationship between environmental expenditure and Net profit of quoted oil and gas companies in Nigeria. Explanatory, historical and correlational design was adopted for the study while secondary data was utilized for the study. Data were gathered from annual reports and accounts of the companies available on their websites and from Nigerian Stock Exchange (various years). The data collected was from the period 2012 – 2017. The Annual reports includes, annual financial statements; annual sustainability reports as well as Annual Reports of global tax payment to nations by the quoted oil firms, annual returns submitted at Nigerian Stock Exchange for the years under study. Regression was used for data analysis and testing of the hypothesis. The result of the study shows that there is no significant relationship between environmental expenditure and net profit of the oil and gas companies in Nigeria under study. The study therefore recommends that amongst others that the management of the oil and gas companies should channel efforts towards engaging in adequate environmental spending and its disclosure as way of increasing stakeholders trust and showing more transparency in their operations.

To ascertain the effect of environmental accounting practices on corporate performance of listed oil and gas companies in Nigeria, Iliemena (2020), collected data from stock exchange fact books, corporate sustainability reports and annual reports of sample firms. The study used ex-post facto research design and the analysis was carried out using simple linear regression. The study reveal that environmental accounting practices and accounting have significant positive effects on both turnover and Return on capital employed; while the effect on net profit even though positive, was insignificant. The theoretical outcome of this study is the Performance Improvement Theory (PIT) which states that firms are involved in sustainability accounting generally for the reason of improved corporate performance benefit drivable through good reputation and cost reduction. It is therefore recommended amongst others that corporate organizations should extend their management accounting and financial reporting systems to environmental accounting as a way of ensuring long-run corporate sustainability. The research study focus on the oil and gas industry, therefore, the recommendation is mainly applicable to the oil and gas industry.

To re-examine the effect of the neglected but important issue of Environmental accounting in the context of how it affects sustainable financial performance of firms in Nigeria, Ikpor, Ituma and Okezie (2019), used data from ten petroleum companies operating in the Niger – delta part of Nigeria over a period of 48 years (1970-2017). The study analyzed the data through the use of ordinary least square regression method, they found that environmental operating costs and environmental prevention costs have significant and negative effect on the performance of petroleum firms in Nigeria. Also, the study found important differences in the correlates of firm's capital expenditure on sustainable financial performance. Because the study was conducted in the Niger Delta region and because of the cultural behavior and response of the people from that region which is not exactly the same with that of other region of the country, this research finding cannot be generalized.

Thi, Ngoc and Thi (2019), carried a study to investigate the environmental information disclosure of enterprises listed on Vietnam's stock market. The study was conducted with 170 listed companies on the Hanoi Stock Exchange (HNX) and Ho Chi Minh City Stock Exchange (HOSE) through descriptive statistics and value testing methods and an in-depth interview. The research results show that in Vietnam, the level of enterprises announcing environmental information disclosure is still low. For example, materials and construction industry, food and beverage industry have less than 55% of enterprise disclosing environmental information. At the same time, the enterprises from environmentally sensitive sectors such as materials and construction, electricity, petroleum, gas, chemicals, etc., have more environmental information disclosure than other industries, and the environmental information published only focuses on the environmental debt, the amount of resources consumed, the number of environmental violations, environmental policies and objectives.

Omoike, Uwalomwa, Olubukola, Ilogho and Ajetunmobi (2018) carried a study to investigated Corporate Social Environmental Reporting and its association with stock prices (using market price per share as at the financial year end) among listed firms in Nigeria. The study used a cross-sectional research design comprising 50 publicly listed companies across various sectors for the period of five years (2011– 2015). For the selected firms, the annual report was used to collect the data. This research utilizes the panel data regression in analyzing the influence of the independent variable (measured by corporate social and environmental expenditure) on the dependent variable measured using the market price per share) for the respective years. Also, in an attempt to examine the relatively market price per share across the sampled industries, the study made use of the one-way analysis of variance; while the Granger causality test was also conducted to ascertain whether bi-directional relationships exist between explanatory variable and the dependent variable (i.e. corporate social and environmental expenditure and market price per share). Findings from the study revealed that the association between corporate social and environmental expenditure and the market price of the firm (when considered in aggregate) is not significant. The result from the Analysis of Variance (ANOVA) showed that the market price per share is significantly different across the industries.

To examine the effect of environmental cost disclosure and financial profitability of oil and gas in Nigeria, Nwaiwu and Oluka (2018), used time series data collected from the annual financial report of understudy companies and the economic review of central bank of Nigeria. Data was evaluated using Pearson product moment coefficient of correlation and multiple linear regression analysis with the aid of Statistical Package for Social Sciences (SPSS) version 22. The econometric results revealed adequate disclosure on environmental cost, and compliance to corporate environmental regulations have positive significant effect on financial profitability 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.

To examine the relationship of environmental accounting disclosures and financial performance of food and beverage companies in Nigeria, Charles, John-Akamelu and Umeoduagu (2017), collected secondary data from source. The data were analyzed using Pearson's correlation statistical technique and multiple regression, with the aid of SPSS version 20. The study revealed that there is a significant relationship between environmental accounting disclosures and return on equity of selected companies. It also revealed a negative relationship between environmental accounting disclosures and return on capital employed and net profit margin of selected companies. Based on these findings, the researcher recommends among others, that firms should adopt uniform reporting and disclosure standards of environmental practices. This will enhance control and measurement of performance. The study also advocates that firms (especially smaller ones), should be encouraged to disclose their environmental practices in their annual reports in order to enhance their competitiveness which would subsequently, lead to higher corporate performance.

To investigate the effect of environmental reporting on the financial profitability of listed manufacturing companies in Nigeria, Utile, Tarbo and Ikya (2017), used secondary data collected from the financial report of companies under study. The study aims at determining the effect of erosion control reporting (ECI), waste management reporting (WMI) and air pollution reporting (API) on the financial Profitability of listed manufacturing firms in Nigeria. The study adopted an ex-post facto research design using the random effect regression analysis as the major technique for data analyses. The sample of the study was drawn from ten manufacturing firms listed on the Nigerian Stock Exchange. It was found that both erosion control reporting and air pollution reporting has significant effect with firm financial Profitability while waste management reporting has negative but significant effect on firm financial Profitability of companies under investigation. The study concluded that environmental reporting has significant effect on firm financial performance. They recommend that the Environmental Regulation Agency should collaborate with the Financial Regulation Council of Nigeria to make environmental reporting a necessity in annual reports of listed firms in Nigeria.

In a research to examine the relationship between environmental accounting and profitability of firms listed in India, Daniel and Ambrose (2013), collected annual report and accounts of 14 randomly selected quoted companies in Bombay Stock Exchange in India. The data were analyzed using multiple regression models. At the end of the research, they found that there is a significant negative relationship between environmental accounting and return on capital employed (ROCE) and earnings per share (EPS) and a significant positive relationship between environmental accounting and net profit margin and dividend per share. Based on these findings, they therefore recommended that government should give tax credit to organizations that comply with its environmental laws and that environmental reporting should be made compulsory in India so as to improve the performance of organizations and the nation as a whole. This research gives a very good background for the assessment of the impact of environmental accounting but however, it was carried out in India were the business environment is significantly different from Nigeria, and therefore the research findings are not applicable in Nigeria.

To examine the impact of environmental accounting on corporate performance in Nigeria, Adediran and Alade (2013), collected data from annual report and accounts of fourteen randomly selected quoted companies in Nigeria. The data were analyzed using multiple regression analysis. The findings of the result show that there is significant negative relationship between environmental accounting and return on capital employed (ROCE) and earnings per share (EPS) and a significant positive relationship between environmental accounting and net profit margin and dividend per share. Based on this it was recommended that 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. Because the data are collected from random companies in Nigeria, the outcome of the research cannot tell the true picture of the impact of environmental accounting in specific industry and sector.

To 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, Bassey, Sunday and Okon (2013), collected both primary and secondary data. 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 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. This study is almost similar with that of Iliemena (2020) which also focuses on the oil and gas industry and is therefore limited to that industry.

III. METHODOLOGY

The methodology adopted in carrying out the study is presented in this chapter. Subtitles discussed in the following sections include research design, source of data, model specification and method of data analysis.

Research Design

This study adopted the ex-post factor research design as the researchers made use of pre-existing secondary data to determine the extent to which environmental accounting affect corporate performance of basic material companies in Nigeria.

Source of Data

Data for this research study were secondary data obtained from the annual financial statements of listed basic material companies for ten years covering 2011 to 2020. There are 12 listed basic material companies in Nigeria as at the time of this research study. It was from this number 6 companies where sampled for study based on availability of complete data for the study variables.

Model Specification

For ease of analysis, the following model which has been widely used by past researchers was adopted:

$ENC = f\,(PAT, EPS)$

Where: ENC, PAT, EPS represent environmental cost of companies, profit after tax and earnings per share respectively.

Specifying it in econometric form, we have;

$ENC = + a_0 + a_1PAT + a_2EPS + \mu_t$ Equation 1

Where; a_α, a_1, a_2 and μ_t represent intercept, impact of PAT, impact of EPS, and error terms respectively.

The apriori expectation is that environmental accounting has a positive relationship with the profit after tax (PAT) and earnings per share (EPS) in the period under study. Amount spent by each company as their environmental cost was used as proxy for environmental accounting while PAT and EPS were used as proxy for corporate performance.

Methods of Data Analysis

The study employed descriptive statistics and multiple regression analysis with the aid of E-views 9 software, following the model specification above. This method is consistent with previous studies carried by other researchers.

IV. RESULTS OF DATA ANALYSIS AND DISCUSSION OF FINDINGS

The data obtained from various basic materials manufacturing company's annual reports were analyzed using descriptive statistics and multiple regression techniques assisted by E-views 9 computer software. The results of the analysis are presented in this section followed by the discussion of findings.

Results of Data Analysis

The results of data analysis are presented in Tables 1 and 2 as descriptive statistics and regression results. The descriptive statistics in Table 1 shows that ENC, PAT and EPS have mean values of 1972.50, 132546.50 and 37.75 respectively. The maximum and minimum values for ENC, PAT and EPS are 3368, 215967, 52, 633, 83297 and 11 respectively; while the associated value of standard deviations are 1305.47, 62814.55 and 18.87 respectively. The most (and least) widely dispersed among the variables are PAT (and EPS).

The regression equation for this study (that is Equation 1) can be translated to Equation 2 based on the regression results in Table 2 as shown below:

$$ENC = 1874.03 – 0.03PAT + 98.39EPS + 50.79 \qquad \text{Equation 2}$$

The coefficients of the PAT and EPS are the key elements for answering the research questions, while the regression results in Table 2 were relied upon in testing the study hypotheses.

Table 1: Descriptive Statistics

	ENC	PAT	EPS
Mean	1972.500	132546.5	37.75000
Median	1944.500	115461.0	44.00000
Maximum	3368.000	215967.0	52.00000
Minimum	633.0000	83297.00	11.00000
Std. Dev.	1305.471	62814.55	18.87459
Skewness	0.034450	0.551790	-0.824823
Kurtosis	1.217436	1.698606	2.016352
Jarque-Bera	0.530380	0.485252	0.614816
Probability	0.767060	0.784565	0.735350
Sum	7890.000	530186.0	151.0000
Sum Sq. Dev.	5112761.	1.18E+10	1068.750
Observations	10	10	10

Source: E-views 9 output

V. DISCUSSION OF FINDINGS

From Table 2, the regression result of the multiple regression analysis shows that earning per share has a positive and significant relationship with environmental cost, while profit after tax is negatively affected by environmental cost and the impact is also a significant one. This finding is consistent with those of Iliemena, (2020), and Charles, John-Akamelu and Umeoduagu (2017).

The R-square value of 0.999495 indicates that 99 per cent changes in ENC are explained by the combined effect of variations in PAT and EPS. In addition, the adjusted R-Square value of 0.998486 in Table 2 indicates that the model used is a proper and good fit for testing the hypothesis of the study. It therefore provided a confidence level of 99% for acceptance of it fitness. Also, the Durbin- Watson statistic value of 1.611581 is approximately 2.0 benchmark, which indicate the non-existence of serial auto correlation among the independent variables

Table 2 Regression Result

Dependent Variable: ENC
Method: Least Squares
Date: 08/08/21 Time: 10:27
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1874.030	69.64089	26.90991	0.0236
PAT	-0.027278	0.000689	-39.58382	0.0161
EPS	98.38716	2.293415	42.89985	0.0148

R-squared	0.999495	Mean dependent var	1972.500
Adjusted R-squared	0.998486	S.D. dependent var	1305.471
S.E. of regression	50.79199	Akaike info criterion	10.80706
Sum squared resid	2579.826	Schwarz criterion	10.34678
Log likelihood	-18.61412	Hannan-Quinn criter.	9.797011
F-statistic	990.4120	Durbin-Watson stat	1.611581
Prob(F-statistic)	0.022463		

Source: E-view9 output

Test of Hypotheses
In the course of the study hypothesis were formulated and these include;
Ho1. There is no significant relationship between environmental accounting and profit after tax.
Ho2. There is no significant relationship between environmental accounting and earning per share.
In order to test for the above hypotheses, we have to consider the test of significance by comparing the probability values of PAT and EPS against the decision criteria of 0.05 acceptance rule. The probability values of PAT and EPS from Table 2 are 0.0161 and 0.0148 respectively.
Hypothesis One; There is no significant relationship between environmental accounting and profit after tax. The coefficient of PAT is -0.027278, while its probability value is 0.0161 (which less than 0.05). This means PAT has negative significant link with ENC, therefore the null hypothesis is rejected.
Hypothesis Two: There is no significant relationship between environmental accounting and earning per share. Similarly, the coefficient of EPS is 98.38716, while its probability value is 0.0148 (which is also less than 0.05). This also implies that EPS has positive significant association with ENC, automatically therefore the null hypothesis two is also rejected.
Overall, from the test of hypotheses based on the regression results, this study showed that corporate performance has significant association with environmental cost accounting in the basic materials sector of Nigerian listed firms. It therefore means that the explanatory variables are jointly significant at explaining the dependent variable; as the probability of F-statistics value of the overall regression model (0.022 which is less than 0.05) provides further evidence to support the deduction that environmental accounting has significant empirical association with corporate performance of the basic materials sector listed firms. The findings of this study are consistent with that of other researchers such as (Iliemena, 2020) and (Charles, John-Akamelu & Umeoduagu 2017).

VI. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

This research study examines the impact of environmental accounting on corporate performance with focus on listed basic material companies in Nigeria. Companies environmental cost was used as proxy for environmental accounting while profit after tax and earnings per share was used to proxy corporate performance. The finding of the study can be summarized as;

1. The relationship between environmental cost and profit after tax is a negative and significant one which is indicated with a coefficient of -0.027 and a p-value of 0.0161.

2. While the relationship between environmental cost and earnings per share, is a positive and significant one, which is indicated with a coefficient of 98.387 and a p-value of 0.0148.

Conclusion

This study examined the association between environmental accounting and corporate performance of the Nigerian Stock Exchange quoted basic materials sector companies for the period 2011 to 2020. Environmental accounting parameter was regressed against profit after tax and earnings per share as proxy for performance. Secondary data was obtained from the annual reports of six used as sample out of the 12 basic materials listed firms in an ex post facto research design. The study employed multiple regression analysis based on OLS with aid of E-views 9 software in order to determine the direction of relationship between the variables. The results showed that environmental accounting had significant association with corporate performance among the basic materials sector listed companies in Nigeria. The evaluation specifically revealed that environmental accounting had a negative and significant relationship with profit after tax, but a positive and significant link with earnings per share.

Recommendations

Based on the findings of this research study the following recommendations are made;

1. The management of basic material companies should either maintain or increase the current environmental cost, because it will increase the shareholder wealth in terms of earnings per share of the owners of the business.
2. Other basic material companies who are yet to be involved in environmental accounting should indulge in it because the wealth of the owners will increase as a result.

Contribution to Knowledge

The study has contributed to knowledge by incorporating the impact of environmental accounting on corporate performance with focus on listed basic materials, so, management can rely on this study in taking environmental accounting decision. Also, this research work has added to the previous existing literature on this particular topic and therefore, future researchers will find this study useful and a reference material.

Suggestions for Further Study

This research study suggests that future studies be carried out on different industry sectors which is yet to be examined. Also, it also suggests that future study be carried on this sector (basic materials sector) involving a longer time period in order to establish the long run relationship of the parameters used.

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