Environmental Accounting Disclosures and Tax Aggressiveness of Quoted Firms in Nigeria

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Abstract
This study empirically investigated the influence of environmental accounting disclosures on tax aggressiveness of quoted Firms in Nigeria. The study is vital as it portrays the extent to which environmental accounting disclosures influence firms' tax aggressiveness. In order to determine the relationship between environmental accounting disclosures and tax aggressiveness, environmental accounting disclosure was proxy as waste management disclosure (WMD), environmental remediation disclosure (ERD) and pollution control disclosure (PCD) using the GRI G4 on content index while tax aggressiveness on the other hand was represented by effective tax rate (ETR). Three hypotheses were formulated to guide the investigation and the statistical test of parameter estimates was conducted using OLS regression model operated with STATA V.15. Ex Post Facto design was adopted and data for the study were obtained from the published annual financial reports of the entire ICT firms, health care firms and oil & gas firms quoted on Nigerian Exchange Group (NGX) spanning from 2013-2020. The findings of the study generally indicate that waste management disclosure, environmental remediation disclosure and pollution control disclosure have significant and positive influence on firms' tax aggressiveness measured by effective tax rate (ETR) at 1-5% significant level respectively. Thus, the study concludes that environmental accounting disclosures determine tax aggressiveness of the quoted firms. The study however suggests the need for firms to have a positive disposition towards environmental friendly practices and also disclose more of this information in their annual reports on her commitment of business to contribute to sustainable economic development as the level of this information disclosure has influence on firms' tax aggressiveness over the years.

Keywords: *Waste Management Disclosure, Environmental Remediation Disclosure, Pollution Control Disclosure, Effective Tax Rate, Tax Aggressiveness*

1.0 Introduction

The increase in global environmental awareness and the campaign for sustainable economic development is redirecting the attention of corporate organizations towards environmental sensitivity. The need for sustainability has caused an emergence of many global institutions enunciating varying norms that guide human interaction with the environment (Ngwakwe 2018)

The use of natural resources and continuous emissions of greenhouse gases by industries around the globe are on the increase. This is traceable to industrial revolution of late 18th century where economic activities in many areas migrated from agriculture to manufacturing. Production shifted from its traditional locations in the home and thatched workshops to factories. The industrial revolutions lead to economic improvement for most people in the industrialized society. These economic developments are not without costs. Industrialization which required the use of natural resources including energy brought about factory pollutant and greater land use, which harmed the natural environment (Dibua & Onwuchekwa, 2015). This is evidenced in environmental degradation and atmospheric pollution generally experienced in the world and particularly in Nigeria today. However, sustainable development as is generally known focuses on the creation of wealth and prosperity, whilst considering the true importance of social and environmental aspects, allowing business and public organizations to meet triple bottom line in sustainable management (Eze, Nweze & Enekwe, 2016).

Environmental accounting disclosure (EAD) has become a global issue today and has been adopted by companies to help them face pressure from stakeholders and increase their competitive advantage and superior performance (Jenkins 2009, Torugsa, O"Donohue & Hecker, 2012). Several studies have shown different findings in analysing the relationship between EAD and firm performance. Maximization of environmental and social responsibility cannot be overemphasized in the operations of corporate organizations. Business exists within an environment in which they operate, therefore business organizations need to give back positively to the environment in order to participate in development of such society. Thus, environmental and social responsibility is the way business organization gives back to society where they are operating (Olowolaju & Adelola, 2020). The discourse of environmental accounting has presumed great importance globally and Nigeria with no exception. Support has increased in the mass media for corporate organization to take a greater responsibility for the development of society by adopting best practices in the environmental initiative.

In recent times, the expectation of social services from corporate firms has become very high in Nigeria, failure of which often results to severe destruction of companies' properties by aggrieved firms' stakeholders, civil unrest and disobedience to the law and order in Nigeria. Companies often implicated in pollution of the operational environment are manufacturing and mining companies. According to Osemene, Kolawole and Oleyakun (2016), pollution from such companies are in form of noise, air, water and its so severe in Nigeria due to the inability of various government to fix the power problem. Aside the pollution from their business activities, fumes from generators contribute severe challenges to fresh air and arable land. Hence, the need for the present study to investigate on the need for corporate organizations to indulge in environmental practices and if such could influence their performance and tax aggressiveness

However, some corporations in the developing countries are becoming conscious of their international market and are creating appreciable effort as regards to environmental and social

practices. The result of sampled industries in Nigeria shows that few companies are becoming environmental friendly (Okafor 2018). However a large number of firms are still apathetic about their environmental and social responsibility. Hence the need for further study on environmental accounting practices.

Tax aggressiveness is an effort to apply lawful hitches to circumvent recompensing or minimize the payment of tax (Uniamikogbo, Bennee & Adeusi, 2019). However, when this is achieved through some illegal means, acts protect investors and other stakeholders interest and enhance the credibility of financial reporting or procedures, it is seen as a deceit or fraud and so criminal. According to Kiabel and Nwikpasi (2001), tax aggressiveness is the planning and operation of business activities within the context of existing legislation in such a way that the business realizes the optimal or best tax position while achieving its set goal. In other words, tax aggressiveness include not only the strategies aimed at minimizing tax liability of a business, it also looks at the cash flow consequence on the business regarding when it is most beneficial for a corporate entity to settle its tax liability and not incur any punishment. It is an act of transferring value from the state to the firm to promote corporate governance in business and increase shareholders' wealth. Thus, tax aggressiveness plays a very significant role in corporate organizations.

A substantial number of prior studies in Nigeria have examined whether environmental accounting discourses influence corporate performance (Nwaiwu and Oluka, 2018; Omaliko, Uzodimma and Ogbuagu, 2018; Omaliko & Okpala, 2020; Omaliko, Nweze and Nwadialor, 2020; Oti & Mbu-Ogar, 2018; Ordu & Amah, 2021; Obida, Owolabi, Enyi & Akintoye, 2019; Osemene, Kolawole & Oyelakun (2016) etc. However, there is a dearth of research addressing the influence of environmental accounting disclosures on the tax aggressive behaviour to reflect the extent of tax planning activities. This opens an opportunity to assess environmental accounting disclosures effects on tax aggressiveness since most research focused on performance other than tax aggressiveness.

Also from the a priori expectations, none of the empirical literature in the developed and developing nations' related environmental accounting disclosures to tax aggressive of quoted firms based on available literature. Hence, the present study examined the effect of environmental accounting disclosures on tax aggressiveness of firms quoted under health care sector, information communication technology (ICT) sector and oil & gas sector of Nigerian Exchange Group (NGX).

To achieve this purpose, the following hypotheses were formulated:

H_{01}: Waste Management Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

H_{02}: Environmental Remediation Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

H_{03}: Pollution Control Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

2.0 Review of Related Literature

2.1 Conceptual Frame work

2.1.1 Environmental Accounting Disclosure

Environmental disclosure is a disclosure related to company's policies, attitudes or actions toward environmental impact, emissions, pollution, cleaning, planting, or energy efficiency. Environmental accounting serves as a provider of environmental information to internal and external parties. Environmental accounting functions internally (Environment Management Accounting or EMA) to provide information to assist management in improving environmental performance of company, while function of external environmental accounting (Environment Financial Accounting or EFAs) is present information to external parties or company stakeholders. Environmental disclosure is generated by environment accounting system which is part of overall environmental information that is disclosed by company (Ngwakwe, 2018). Environmental disclosure is a disclosure on the control of emissions and effluents into environment. It constitutes the use of materials, processes, or practices to reduce, minimize, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water, and other resources (Ijeoma, 2015).

According to Weng, Chen and Chen (2015), environmental accounting disclosure is referred to as green accounting and it measures (in economic terms) the performance of firms in respect to the environment. It involves the identification, measurement and reporting of environmental specific cost, for example liability cost and waste disposal cost. It covers more than reporting or accounting for environmental cost and benefits. It is the accounting for any cost or benefit that occurs from changes in an organization's product or process, while the change can also have impact on the environment. It plays a major role in understanding the significant contribution of the natural environment to the economy and humanity survival (Baba, 2012).

2.1.2 Tax Aggressiveness

Tax Aggressiveness also known as tax sheltering or tax planning has been variously defined by scholars. Hoffman (1961) viewed it as the taxpayer's ability to organise his financial businesses in such a way as to suffer a minimum tax liability. Tax sheltering is generally defined as the procedure of arranging one's affairs in order to defer, decrease or even eliminates the amount of taxes to be paid to the government (Pniowsky, 2010). Tax aggressive practices are usually implemented to minimise the tax burden to achieve greater after-tax earnings per share and cash available for shareholders (Lanis & Richardson, 2012). Thus, it could also reflect a decline in taxable income when managed through tax planning practices that are legal as well as activities that may be viewed as illegal in some circumstances to reduce tax liability. Lanis, Richardson and Taylor (2015) provide that tax aggressiveness can be substituted with tax avoidance, tax planning and tax sheltering. Since tax aggressiveness is a form of corporate decision and action that could reflect both executives and non-executives aversion to risk, it presents a suitable setting to assess gender differences in risk taking for board members.

The recent study of Uniamikogbo, bennee, and Adeusi (2019), Lanis, McClure and Zirnsak (2017), Nwaobia, Kwarbai, and Ogundajo (2016) proxy tax aggressiveness using effective tax

rate (ETR). For the purpose of this study, tax aggressiveness was proxy using effective tax rate (ETR) which is in consonance with the apriori expectations. This is shown below thus:

$$ETR = \frac{\text{Current Reporting Tax}}{\text{Pre Tax Profit}} \times 100$$

2.2 Theoretical Framework

The theoretical framework which gives the meaning of a word in terms of the theory on environmental accounting disclosures and tax sheltering established in this study is Stakeholders Theory (ST) and Agency Theory (AT). It assumes that both the knowledge and acceptance of these theories that this research work depends upon.

2.2.1 The Stakeholders' Theory

This theory was propounded by Freeman in the year 1983. The stakeholders' theory proposed an increased level of environmental awareness which creates the need for companies to manage these interests (groups' interest) in order for them to become environmentally friendly towards the environment in which the business is domiciled. The main concern of the stakeholders' theory in environmental accounting is to address the environmental disclosure elements and valuation and its inclusion in the financial statements for external users consumption. The theory illustrates that the firm has one and only one goal – to satisfy the desires of shareholders by making profits. However, profit may not be attainable if the environment in which the business operates is neglected. As pointed out in the study of Omaliko, Nweze and Nwadialor (2020), stakeholders' theory proposed an increased level of environmental awareness which creates the need for companies to manage these interests (groups' interest) in order for them to become environmentally friendly towards the environment in which the business is domiciled. The main concern of the stakeholders' theory in environmental accounting is to address the environmental disclosure elements and valuation and its inclusion in the financial statements for external users consumption.

Thus, the study is anchored on stakeholders' theory, as its concern is to encourage business managers to carry out environmental practices which the non- financial stakeholders consider very important so as to maximize stakeholders' value as well as minimize environmental costs.

2.2.2 Agency Theory

Agency theory was propounded by Jensen and Meckling in the year 1976. Agency theory has been widely used by empirical researchers to explain the relationship between environmental practices and firm performance. According to Jensen and Murphy (1990), principal-agent theory can be used to justify the positive correlation between environmental practices and firm's tax aggressiveness.

The linkage between environmental practices and tax sheltering should provide an attractive incentive for firm to succeed since tax sheltering gives taxpayer the ability to organize his financial businesses in such a way as to suffer a minimum tax liability.

According to Desai and Dharmapala (2009), tax sheltering is a form of tax avoidance which integrates more aspects of the agency conflicts between managers and investors. From the agency viewpoint of tax, management skirting is the major problem that must be resolved by investors. Managerial opportunism or resource diversion is another form of agency problem considered under avoidance. According to Jensen and Meckling (1976), managers who are agents of the principals (shareholders), are employed to work for maximizing the returns to the shareholders. Managers of organizations are agents to the shareholders. Therefore, in order to maximize shareholders' wealth they would need to reduce their operating costs. One of such ways to reduce operating costs is to engage in tax sheltering (aggressiveness) to reduce their tax liability. However, in order to reduce the tax burden of firms, tax sheltering must be done within the legal framework. The primary reason managers of organisations involve in tax sheltering is because of the benefits they derived from an increase in after-tax returns.

Similarly, agency theory and definitions of tax sheltering have revealed significantly that, after tax returns could be uninterestedly influenced by tax minimization, while minimization of tax could be seen as tax aggressive. Hence, the study is anchored on this theory.

2.3 Empirical Review

Adediran and Alade (2013) used multiple regression analysis of 14 randomly selected companies quoted on the Nigerian Stock Exchange 2010. Their findings show that environmental accounting has a positive relationship with net profit margin, dividend per share and a negative relationship with return on capital employed and earnings per share.

Ilemona and Nwite (2020) examined the relationship between Environmental Accounting Practice (EAP) reporting and Social Responsibility Performance (SRP) also the relationship between Environmental Conservation Cost (ECC) and Environmental Conservation Benefits (ECB). Data for the study were obtained from randomly selected six (6) manufacturing firms in Plateau and Kano states of Nigeria. Structural Equation Modeling (SEM) was used in analyzing the data collected. The model was statistically evaluated and validated using Composite Reliability (CR) and discriminate validity criterion. Results indicated a positive relationship between EAP and SRP and also between ECC and ECB. It is recommended that organizations in Nigeria especially the manufacturing outfits should in addition to preparation of annual accounts, disclose sufficiently in a separate document on environmental and social responsibility reports, the effects of their activities on the environment particularly, their concern about environmental conservation and associated benefits. The disclosure can be enforced through legislation and guidelines on environment of relevant agencies at federal and state level.

Likaodui and Osei (2019) conducted a study on social and environmental accounting reporting and financial performance in Ghana. The aim was to ascertain the effect of social and environmental disclosure on the financial performance of companies registered on Ghana Stock Exchange (GSE) over a period of three (3) years (2015-2017). Data for the study were obtained from the annual statements of all registered companies on GSE. The analysis was done using regression model and t-test. Findings suggest that there is positive correlation between social and environmental accounting reporting and companies' financial performance.

Gilbert (2018) examined the effect of environmental accounting, corporate social responsibility and corporate performance on corporate reputation. The aim was to investigate the effect of moderating variable of corporate reputation on environmental accounting, corporate social responsibility with corporate performance. Data for the study were obtained from manufacturing companies listed on Indonesia Stock Exchange (ISE) for 2014-2016. The results of regression analysis indicated that variable corporate reputation, EA and social responsibility simultaneously influence corporate performance and value.

Omaliko, Uzodimma and Ogbuagu (2018) examined the comparative analysis of environmental disclosure in oil and gas industries in Nigeria. The study compared the environmental disclosure requirements of Global Reporting Initiatives (GRI) with the environmental information disclosed in the annual report of five Listed Oil and Gas firms in Nigeria for the period of five years (2012-2016). The Content Analysis research design was adopted. Secondary data for the study were obtained from the published audited financial statements of the five Listed Oil and Gas firms in Nigerian for the period under review from which disclosure compliance index was developed. The statistical tools employed were the compliance index and the Friedman Analysis of Variance (ANOVA). The findings of the study indicate that there is a significant and positive relationship between the firms' compliance and Global Reporting Initiative (GRI) disclosure requirements among the sampled oil and gas firms in Nigeria. The study however recommends among others that the accounting standard setters (IFRS) should draft a more comprehensive framework for reporting environmental concerns, specifically for the oil and gas industries because of their high propensity to environmental degradation and pollution, and also the high impact of their industrial activities on the environment.

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 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 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.

Omaliko, Nweze and Nwadialor (2020) empirically investigated the effect of social and environmental disclosures on performance of non-financial firms in Nigeria. The study is vital as it portrays the extent to which social and environmental disclosures influence firms' performance. In order to determine the relationship between social and environmental disclosures and firms performance, some key proxy variables were used in the study, namely corporate social responsibility disclosure and environmental disclosure; firms' performance is however represented by NAPS. Two hypotheses were formulated to guide the investigation and

the statistical test of parameter estimates was conducted using panel regression model. The research design used is Ex Post Facto design and data for the study were obtained from the NSE Factbook and published annual financial reports of the entire 112 non financial firms quoted on NSE with data spanning from 2011-2018. The findings generally indicate that corporate social and environmental disclosures have significantly influenced firms' performance at 5% significant level. Based on this, the study concludes that social and environmental disclosures have positively improved firms performance over the years. The study however suggests that firms should have positive disposition towards social and environmental friendly practices and also disclose more of these information in their annual reports as the level of these information disclosures have exerted significant influence on firms' performance over the years.

Modupe (2020) investigated the evaluation of environmental accounting and its impact on the sustainable economy in Nigeria using 3 selected manufacturing companies (Portland Paint and Product, Bevpak and Premier Feed Mills Nigeria ltd) located in Ibadan metropolis, Oyo State. The primary source of data was used and out of two hundred (150) questionnaires that were distributed, 136 were received and only 124 fully filled were used in data analysis with the use of simple percentage and Chi-Square statistical tool. The major result of the hypothesis tested showed that environmental accounting as a significant effect on sustainable development with (X2cal (16.65) > X2tab (16.65) at significant level 0.05) and also enhance the life of the citizen with (X2cal (16.65) > X2tab (16.65) at significant level 0.05). Findings from the analysis of the data indicated that environmental accounting has enhanced sustainable development by reducing the environmental impact while increasing the value of an enterprise, satisfying human needs, contributing to the quality of life, and resource intensity. To this end, it is recommended that there is need for government to impose a restriction on the release of a toxic substance into the environment and stipulating the requirement which industries and facilities generating waste must meet.

Makori and Jagongo (2013) also examined the relationship between environmental accounting and profitability of selected firms listed in India. The data for the study were collected from annual reports and accounts of 14 randomly selected quoted companies in Bombay Stock Exchange in India. The data were analyzed using multiple regression models. The key findings of the study shows that there is significant and 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 India so as to improve the performance of organizations and the nation as a whole.

Nwaiwu and Oluka, (2018) 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.

3.0 Methodology

In this study, ex-post facto design was adopted. The use of ex-post facto design was based on the fact that our data is secondary in nature which has existed and cannot be manipulated. The population of the study consists of the entire 31 firms quoted under health care sector, information communication technology (ICT) sector, and oil and gas sector spanning from 2013-2020 according to their financial statements. Out of 31 firms that formed the population of the study, 14 firms were tax aggressive firms, 12 were tax conservative firms while the remaining 5 firms have empty financial information within the period under review (*MTN Nigeria Comm Plc, Airtel Africa Plc, Omatek Ventures Plc, Evans Medical Plc and Nigerian German Chemical Plc)* which were removed. Based on this, a total of 14 tax aggressive firms formed our sample size with 112 observations. These firms include (Fidson Plc, Morrison Plc, Pharma Deko Plc, Union Diagnostic Plc, Ekocorp Plc, Neimeth Plc, Triple Gee & Company Plc, Chams Plc, NCr Nig Plc, Etransact Intl Plc, Ardova Plc, Japaul Oil Plc, Capital Oil Plc, and 11 Plc)

3.1 Operationalization and Measurement of Variables

3.1.1 Dependent Variable

The dependent variable in this study is tax aggressiveness and it was proxy and measured using effective tax rate. This is in harmony with the works of Uniamikogbo, bennee, and Adeusi (2019), Nwaobia, Kwarbai and Ogundajo (2016).

3.1.2 Independent Variable

The independent variables used in the study include; waste management disclosure (WMD), environmental remediation disclosure (ERD) and pollution control disclosure (PCD). The measurements are as follows:

Waste Management Disclosure (WMD), Environmental Remediation Disclosure (ERD) and Pollution Control Disclosure (PCD) were measured using a dichotomous procedure by (GRI) which was applied in scoring the items whereby specifically, a “1-point” score was awarded for each item that is disclosed in the annual report and otherwise, a “0-point”. Then, the sum of scores of all items was computed. The WMD, ERD & PCD score for the company is derived by calculating the ratio of actual sum of scores awarded to a company to a maximum of 8 years.

3.2 Model Specification

In line with the previous studies, the study adapted and modified the Model of Uniamikogbo, Bennee and Adeusi (2019) as used in in determining the influence of corporate governance on tax aggressiveness in Nigeria. Thus, the present study modified the model in determining the influence of environmental accounting disclosures on tax aggressiveness of quoted firms in Nigeria

Uniamikogbo, Bennee and Adeusi (2019): $ETRit = \beta_0 + \beta_1 BSit + \beta_2 CDit + \beta_3 GDit + \beta_4 OSit + \mu$

The explicit form of the regression modified for the study is expressed as thus:

$ETRit = \beta_0 + \beta_1 WMDit + \beta_2 ERDit + \beta_3 PCDit + \mu$

Where:
ETR = Effective Tax Rate
WMD = Waste Management Disclosure
ERD = Environmental Remediation Disclosure
PCD = Pollution Control Disclosure

Decision Rule: accept Ho if P-value > 5% significant level otherwise reject Ho

4.0: Data Analysis and Results
Table 1: Descriptive Statistics

STATS	WMD	ERD	PCD	ETR
Mean	2.76875	2.093929	2.028929	1.994643
Std. Dev.	.8924136	.7182704	.9334382	1.483893
Maximum	5	5	5	8
Minimum	0	0	0	0
Observations	112	112	112	112

Source: Researcher's Computation (2022).

Table 1 shows that on the average, in a 8-year period (2013-2020), the listed health care, oil and gas and ICT firms in Nigeria were characterized by positive effective tax rate (ETR) value of 1.994643. This is an indication that the selected firms in Nigeria have positive effective tax rate value with a standard deviation value of 1.483893. The average waste management disclosure (WMD) value for the sampled firms was 2.76875 with a standard deviation value of .8924136. This means that firms with WMD values of 2.76875 and above are environmental friendly in the management of wastes. There is also a high variation in maximum and minimum values of WMD which stood at 5 and 0 respectively. This wide variation in WMD values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher WMD values are tax aggrieved than those firms with low WMD values.

On the other hand, the average environmental remediation disclosure (ERD) value for the sampled firms was 2.093929 with a standard deviation value of .7182704. This means that firms with ERD values of 2.093929 and above are environmental responsible. There is also a high variation in maximum and minimum values of ERD which stood at 5 and 0 respectively. This wide variation in ERD values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher ERD values are tax aggrieved than those firms with low ERD values.

Also, the average pollution control disclosure (PCD) value for the sampled firms was 2.028929 with a standard deviation value of .9334382. This means that firms with PCD values of 2.028929 and above are environmental friendly as regard to pollution control. There is also a high variation

in maximum and minimum values of PCD which stood at 5 and 0 respectively. This wide variation in PCD values among the sampled firms justifies the need for this study as the researcher assumes that firms with higher PCD values are tax aggrieved than those firms with low PCD values.

4.1 Test of Hypotheses

Table 2: Result on Influence of Environmental Accounting Disclosures on Tax Aggressiveness of Quoted Firms in Nigeria.

Source	SS	df	MS
Model	105.233048	3	35.0776828
Residual	139.183736	108	1.28873830
Total	244.416785	111	2.20195301

Statistic	Value
Number of obs	112
F (3, 108)	27.22
Prob > F	0.0000
R-squared	0.4305
Adj R-squared	0.4147
Root MSE	0.1352

ETR	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PCD	.9612677	.1484918	6.47	0.000	.6669312	1.255604
ERD	.0144586	.1689932	0.09	0.032	.3496307	.3207135
WMD	.1406650	.1553966	0.91	0.036	.1673580	.4486879
_cons	.3148916	.4007181	0.79	0.043	1.109184	.4794011

Source: Result output from STATA 15.

4.2: Discussion of Findings

The result of the analysis of the study using OLS Model is expressed as follows:

H_{01}: Waste Management Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

This hypothesis was tested and the result of the regression model as exposited on table 2 indicates that the relationship between waste management disclosure and effective tax rate (ETR) is positive and significant with a P-value (significance) of 0.000 for the model which is less than the 1% level of significance adopted. Likewise the result of the positive coefficient shows that an increase in firms'environmental practices while other variables are held constant increases firms effective tax rate (ETR) by 96.1%. We consequently rejected null hypothesis and accepted alternate hypothesis which contends that waste management disclosure has significant effect on tax aggressiveness of quoted firms in Nigeria.

This agrees with our priori expectations of Omaliko, Uzodimma and Ogbuagu (2018), Obara and Nangih (2017), Nwaiwu and Oluka (2018), Omaliko, Nweze and Nwadialor (2020) who found significant and positive association between environmental sustainability and corporate performance.

H_{02}: Environmental Remediation Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

This hypothesis was tested and the result of the regression model as exposited on table 2 indicates that the relationship between environmental remediation disclosure and effective tax rate (ETR) is positive and significant with a P-value (significance) of 0.032 for the model which is less than the 5% level of significance adopted. Likewise the result of the positive coefficient shows that an increase in firms' environmental practices while other variables are held constant increases firms effective tax rate (ETR) by 1.44%. We consequently rejected null hypothesis and accepted alternate hypothesis which contends that environmental remediation disclosure has significant effect on tax aggressiveness of quoted firms in Nigeria. This agrees with our priori expectations and the studies of Uwaloma and Egbide (2016), Akinleye and Adedayo (2017), Olowolaju and Adelola (2020) who found that social sustainability ensures corporate performance. This disagrees with the status quo of Amram and Siti-Nabiha (2017), Uwaloma and Egbide (2016) who found significant but negative relationship between the variables.

H_{03}: Pollution Control Disclosure has no significant effect on Tax Aggressiveness of Quoted Firms in Nigeria

This hypothesis was tested and the result of the regression model as exposited on table 2 indicates that the relationship between pollution control disclosure and effective tax rate (ETR) is positive and significant with a P-value (significance) of 0.036 for the model which is less than the 5% level of significance adopted. Likewise the result of the positive coefficient shows that an increase in firms' environmental practices while other variables are held constant increases firms effective tax rate (ETR) by 14.1%. We consequently rejected null hypothesis and accepted alternate hypothesis which contends that pollution control disclosure has significant effect on tax aggressiveness of quoted firms in Nigeria. This agrees with our priori expectations of Omaliko, Uzodimma and Ogbuagu (2018), Obara and Nangih (2017), Nwaiwu and Oluka (2018), Omaliko, Nweze and Nwadialor (2020) who found significant and positive association between environmental sustainability and corporate performance.

5.1 Conclusion and Recommendation

Based on the findings of the study, it was concluded that environmental accounting disclosures have significant and positive effect on tax aggressiveness of listed firms in Nigeria. The implication of this is that environmental friendly and responsible firms are tax aggrieved. Based on this, the study suggest that firms should have a positive disposition towards environmental friendly practices and also disclose more of this information in their annual reports on her commitment of business to contribute to sustainable economic development as the level of this information disclosure has influence on firms' tax aggressiveness over the years.

5.2 Contribution to Knowledge

The present study adapted and modified the Model of Uniamikogbo, Bennee and Adeusi (2019) in determining the influence of environmental accounting disclosures on tax aggressiveness of quoted firms in Nigeria. This is shown below as thus:

Uniamikogbo, Bennee and Adeusi (2019): $ETRit = \beta_0 + \beta_1 BSit + \beta_2 CDit + \beta_3 GDit + \beta_4 OSit + \mu$

The above model is modified for the study as thus:

$ETRit = \beta_0 + \beta_1 WMDit + \beta_2 ERDit + \beta_3 PCDit + \mu$

The study contributed to knowledge by revealing in model that:
$ETR_{it} = \beta_0 + \beta_1 WMD_{it}\ (0.961\{0.000\}) + \beta_2 ERD_{it}\ (0.0144\{0.032\}) + \beta_3 PCD_{it}\ (0.141\{0.036\}) + + \mu$

References

Adediran, S., & Alade, S. (2013). The impact of environmental accounting on corporate performance in Nigeria. *European Journal of Business and Management, 5*(23), 141-152

Akinleye, G., & Adedayo, T. (2017). Impact of corporate social responsibility on the profitability of multinational performance of firms in Nigeria brewery sector. *European Journal of Business and Innovation Research, 5*(1), 1-15

Amran, A., & Siti-Nabiha, A. (2017). Corporate social reporting in Malaysia: A case of mimicking the West or succumbing to local pressure. *Social Responsibility Journal*, *5*(3), 358–375.

Desai, M., & Dharmapala, D. (2018). Tax and corporate governance: An economic approach', *MPI Studies on Intellectual Property, Competition and Tax Law, 3*, 13-30.

Dibua, N. O., & Onwuchekwa, J. C. (2015). Determinants of environmental disclosures in Nigeria: A case study of oil and gas companies. *International Journal of Finance and Accounting, 4*(3), 145-152.

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, E. (1984). *Stakeholders theory*; theoretical perspective, New York: Harper and Row Inc.

Gibert, R (2018). The effect of environmental accounting, corporate social responsibility and corporate social responsibility and corporate performance to corporate reputation. *Research Journal of Finance and Accounting, 9*(14), 68-79

Ijeoma, N. B. (2015). Evaluation of companies environmental practice based in Nigeria. *Social and Basic Sciences Research Review, 3*(7), 349-364.

Ilemona, A., & Nwite, S. (2020). Environmental accounting practice, reporting and social responsibility performance: Evidence from manufacturing firms in Nigeria. *International Journal of Accounting Research, 5*(4), 54-60

Jenkins, H. (2009). A business opportunity model of corporate social responsibility for small and medium-sized enterprises. Business ethic: *A European Review 18* (1), 21-36.

Jensen, M. & Murphy, K.. (1990). Performance pay and top-management incentives. *Journal of Political Economy, 2*, 225-264.

Jensen, M., & Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics, 3*, 305-360.

Kiabel, B. D., & Nwikpas, N. N. (2001). *Selected aspects of Nigerian taxes*, Owerri: Springfield Publication ltd

Lakaodi, Z. M., & Osei, A.B.M (2019), Social and environmental accounting, reporting and financial performance in Ghana. *International Journal of Economics and Finance 11*(4), 82 – 93.

Lanis, R., & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy, 31*(1), 86-108

Lanis, R., Richardson, G., & Taylor, G. (2015). Board of director gender and corporate tax aggressiveness: an empirical analysis. *Journal of Business Ethics,* 1-20

Makori, E., & Jagongo, S. (2013). Effect of non financial information disclosures on performance of manufacturing firms in France, *Journal of Empirical Literature, 2*(3), 45-51.

Modupe, O. (2020). Evaluation of environmental accounting and its impact on sustainable economy in Nigeria. *International Journal of Social Sciences and Management Review, 3(*6), 23-37

Ngwakwe, C. (2018). Environmental Responsibility and Firm Performance: Evidence from Nigeria, World Academy of Science, Engineering and Technology *46*, 22-29.

Nwaiwu, J. N. & Oluka, N. O. (2018). Environmental cost disclosure and financial performance of oil and gas in Nigeria**.** *International Journal of Advanced Academic Research Financial Management 4*(2), 1-23.

Nwaobia, A, Kwarbai, J, & Ogundajo, G. (2016). Tax planning and firm value: empirical evidence from Nigerian consumer goods industrial sector', *Research Journal of Finance and Accounting, 7*(2), 172-184

Obara, L., & Nangih, E. (2017). Tax compliance barriers and internally generated revenue in Nigeria: Empirical from small and medium enterprises in Portharcourt Metropolis. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 7*(4)

Obida, S. S., Owolabi, S. A., Enyi, P. E., & Akintoye, I. R. (2019).Environmental disclosure practices and stock market return volatility in the Nigerian Stock Exchange. *International Journal of Scientific and Research publications 9*(7), 95-108

Okafor, M. (2018). Firms liquidity and environmental disclosures, *European Journal of Business and Management, 5*(7), 13-19.

Omaliko, E., & Nweze, A., & Nwadialor, E. (2020). Effect of social and environmental disclosures on performance of non-financial firms in Nigeria. *Journal of Accounting and Financial Management, 6*(1), 40-58

Omaliko, E., & Okpala, A. (2020). Effect of environmental disclosures on dividend payout of firms in Nigeria. *International Journal of Banking and Finance Research, 6*(3), 14-28

Omaliko, E., Uzodimma, A., & Ogbuagu, N. (2018). Comparative analysis of environmental disclosures in oil and gas industries in Nigeria: A study of selected oil and gas industries on the Nigerian stock exchange. *World Educators Forum, 10*(1), 1-13

Ordu, P., Amah, C. (2021). Environmental accounting and financial performance of oil and gas companies in Nigeria. *International Journal of Innovative Finance and Economics Research, 9*(1), 182-197

Osemene, O. F., Kolawole, K. D. & Oyelakun, O. (2016). Effects of environmental accounting practices and sustainable development on the performance of Nigerian listed manufacturing companies. *Journal of Sustainable Development in Africa, 18*(2), 127-143.

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).

Pniowsky, J. (2010). Aggressive tax planning-How aggressive is too aggressive? *Thompson Dorfman Sweatman LLP, 3*, 1-3.

Steijvers, T., & Niskanen, M. (2015). Tax aggressive behaviour in private family firms - the effect of the CEO and board of directors. *Proceedings of the European Conference on Management, Leadership & Governance*

Torugsa, A., O"Donohue, W., & Hecker, R. (2012) Capabilities, proactive CSR and financial performance in SMEs: Empirical evidence from an Australian manufacturing industry sector. *Journal Business Ethics,* 109, 483-500

Uniamkogbo, E., Bennee, E., & Adeusi, S. (2019). Corporate governance and tax aggressiveness in Nigeria. *AE-Funai Journal of Accounting, 4*(1), 20-33

Uwalomwa, U., & Egbide, B. (2016). Corporate social responsibility disclosures in Nigeria: A study of listed financial and non-financial firms. *Journal of Management and Sustainability, 2*(1) 160 – 169.

Weng, H., Chen, J. & Chen (2015). Effects of green innovation on environmental and corporate performance: A stakeholder perspective. *Sustainability, 7*(1), 4997-5026

Appendix 1

S/N	SECTORS	QUOTED FIRMS IN NIGERIA	TOTAL COYS USED	% SAMPLE OF POPULATION (31)	TOTAL COYS EXCLUDED	% SAMPLE OF POPULATION EXCLUDED (5)	EFFECTIVE TAX RATE	REMARK
	HEALTH CARE							
1		Fidson Plc	1				**29**	**ETR ≤ 30%**
2		Morrison Plc	1				**25**	**ETR ≤ 30%**
3		Neimeth Plc	1				**14**	**ETR ≤ 30%**
4		Pharma Deko Plc	1				**15**	**ETR ≤ 30%**
5		Union Diagnostic Plc	1				**22**	**ETR ≤ 30%**
6		Ekocorp Plc	1				**19**	**ETR < 30%**
7		Glaxosmithline Plc			1		**177**	**ETR > 30%**
8		May & Baker Plc			1		**142**	**ETR > 30%**
9		Evans Plc			1			**NO INFO**
10		Nig German Chem Plc			1			**NO INFO**
		TOTAL NO OF COYS UNDER HEALTH CARE	**6**	**19.4%**	**4**	**12.9%**		
	ICT SECTOR							
1		Triple Gee & Company Plc	1				**29**	**ETR ≤ 30%**
2		Chams Plc	1				**11**	**ETR ≤ 30%**
3		NCr Nig Plc	1				**30**	**ETR ≤ 30%**
4		Etransact Intl Plc	1				**30**	**ETR ≤ 30%**
5		Courteville Plc			1		**47**	**ETR > 30%**
6		CWG Plc			1		**32**	**ETR >**

								30%
7		MTN Nigeria Comm Plc			1			**NO INFO**
8		Airtel Africa Plc			1			**NO INFO**
9		Omatek Ventures Plc			1			**NO INFO**
		TOTAL NO OF COYS UNDER ICT SECTOR	**4**	**12.9%**	**5**	**16.1%**		
	OIL AND GAS							
1		Ardova Plc	1				**26**	**ETR ≤ 30%**
2		Capital Oil Plc	1				**5**	**ETR ≤ 30%**
3		11 Plc	1				**30**	**ETR ≤ 30%**
4		Japaul Oil Plc	1				**8**	**ETR ≤ 30%**
5		Conoil Plc			1		**34**	**ETR > 30%**
6		Oando Plc			1		**64**	**ETR > 30%**
7		Seplat Oil Plc			1		**88**	**ETR > 30%**
8		Mrs Oil			1		**66**	**ETR > 30%**
9		Total Nig Plc			1		**33**	**ETR > 30%**
10		Amino International Plc			1		**52**	**ETR > 30%**
11		Rak Unity Pet Plc			1		**38**	**ETR > 30%**
12		Eternal Plc			1		**43**	**ETR > 30%**
31		**TOTAL NO OF COYS UNDER OIL & GAS SECTOR**	**4**	**12.9%**	**8**	**25.8%**		
		GRAND TOTAL	**14**	**45.2%**	**17**	**54.8%**		

The List of Companies Quoted under 3 Sectors of NSE
Source: Compiled from NSE Factbook & Author's Conception (2022).

Note: *Firms with **ETR > 30%** are considered as Tax Conservative Firms while firms with **ETR ≤ 30%** are considered as Tax Aggressive Firms which the present study concentrated on. Hence Tax Conservative Firms were excluded from the study.*