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Abstract

The financial-related crises that raged through countries of the world which prompted the breakdown of some blue chip organizations (for example Enron, WorldCom, and so on.) have placed earnings management of financial statements in the spotlight and a developing number of organizations around the world have willfully embrace and integrate the practice of environmental accounting disclosure into their plans of action in other to improving their corporate strategies, moral conduct, and their relationship with significant cultural interest. It was against this backdrop that this study examined the impact of environmental accounting disclosure on the earnings management of quoted industrial sector companies in Nigeria. The study sample fourteen (14) industrial goods companies from 2013 to 2020 and from the pooled OLS (ordinary least square) regression analyses, the findings suggested a positive relationship between environmental accounting disclosure and discretionary accruals. It was recommended that industrial goods firms should persist in giving great concern to environmental accounting disclosure practice as it ties the growth of the firm to economic growth.

Keywords: Environmental Accounting Disclosure; Earnings Management; Discretionary Accruals.

Introduction

The subject of environmental protection has been regarded as one of the most critical issues in human society, given the ever-increasing population and limited natural resources available. Similarly, with the presence of some environmental constraints, particularly on global trade, and a tighter competition arena in today's world, business managers are under increasing pressure to reduce operational costs while also minimizing environmental impacts caused by their operational activities. The shareholders, government, media, customers, potential investors, and other stakeholders all exert such pressures. Corporations have no choice but to incorporate environmental change strategies(Nuber, Velte & Horisch, 2020) and environmental costs into their accounts to lessen the environmental implications of their operating activities (Amir, Panah & Bostan, 2014).

Norway was the first country to implement environmental accounts in the early 1970s, and it was quickly followed by a slew of other countries. In Africa, South Africa is the first nation to make sustainability reporting mandatory. Companies saw environmental reporting and disclosure as an additional burden when they were in the early stages, thus they supplied as little information as possible (Nithesh, Roopa & Aruna, 2018). Environmental accounting disclosure is optional in poor nations, particularly Nigeria. This is due to the lack of either local or international norms to guide disclosure. Companies tend to disclose this information to comply with industry practices, pressures from environmental activists and advocates, relationships with parent companies (multinational corporations), the ownership structure of the company, size and level of profitability, and so on. The current state of environmental accounting reporting and disclosures is confusing and ambiguous (Omoike, 2020).

Consequentially, earnings in accounting have consistently been one of the most utilized measures of performance. Given the flexibility of International Financial Reporting Standards (IFRSs) and the Generally Accepted Accounting Principles (GAAPs), firm's managers are given extensive open doors for practising discretion over-reporting earnings and it is not astonishing that managers/accountants manipulate earnings when the interests among them and other stakeholders mismatched. This opportunism of utilizing managers' discretion is referred to as earnings management (EM) (Almahrog, Marai and Knežević, 2015) and it could damage the image of statements of financial reports.

One of the goals of environmental accounting disclosure (EAD) is to promote financial transparency and accountability while also lowering financial volatility and capital costs (Kothari, Li& Short, 2009). At certain levels, financial accountability and transparency are technical and legal challenges, but they are vital to all stakeholders, including employees, creditors, consumers, shareholders, suppliers, the government, communities, and the rest of the public sector. There are also short and enjoyable EAD approaches that could reduce the extent to which insiders (managers) abuse their information advantage over outsiders (customers). Stakeholders have recently demanded that firms be held more accountable for the environmental impact of their operations.

The financial-related crises that raged through countries of the world which prompted the breakdown of some blue chip organizations (for example Enron, and WorldCom) have placed earnings manipulation of financial statements in the spotlight. Enron could be referred to as an ideal sample where the organization was effectively associated with promoting environmental protection activities, yet is living proof that when an organization is focused on environmental reporting, it can still be brought down by ethical wrongdoings (Wang, Yao, Peterson & Lee, 2008). Some studies believe that EM is a main consideration that is answerable for the emergency that grieved the water of some organizations, Nigeria inclusive (the Nigeria AGIP oil organization adventure is an ordinary case of this circumstance). The afore-said stimulated the stakeholders' interest in the contributing factor of EM (Uyagu & Dabor, 2017).

Over the last few years, several studies have looked into the impact of environmental accounting disclosures on earnings manipulation of companies in various countries and sectors, with mixed, inconsistent, and inconclusive results ranging from positive, negative, no relationship, statistically significant to insignificant influence. The use of various research methodologies, the various periods covered, the nature of variables considered, the availability and nature of data used, the various jurisdictions and sectors

of study, the various sample compositions, and the various measures of environmental accounting disclosures employed all contributed to these results. This research was influenced by previous scholars' differing and sometimes contradictory viewpoints. Most of the present literature has been based on international and advanced markets studies (Gerged, Albitar, & Al-Haddad, 2021; Velte, 2020; Van Ha, 2020; Toukabri, Jilani & Benjemaa, 2017; Sun, Habbash, Aly & Khaled, 2010), and little is known about the impact of EM on developing countries like Nigeria, except studies (Omoike, 2020; Uyagu & Dabor, 2017). The majority of Nigeria studies (Iliemena, 2020; Iheduru & Chukwuma, 2019; Adegbie, Ogidan, Siyanbola & Adebayo, 2020; Osemene, Kolawole & Oyelakun, 2016) concentrated on environmental accounting and firm performance relationship.

The role of EM and EA in developing markets (Nigeria) is particularly hard to come across, which could provide a new perspective on the link between the two. On the other hand, the relationship between profitability, firm value, and the benefits of EM for enterprises in developing markets may not be as strong as it is in developed markets.

It is against this backdrop, the study's main objective is to validate previous research by looking at the impact of environmental accounting disclosures (using the GRI G4 index and ISO 26000 as a standard measure of environmental disclosure) on the earnings management of selected industrial firms listed on the Nigerian Stock Exchange. The specific objective is to:

i. Evaluate the effect of materials, energy, water, biodiversity, emissions, effluents and waste, environmental compliance, and supplier environmental assessment disclosures on earnings management.

This study's novelty will be to contribute to the existing body of knowledge given recent climate change and the transformation of substantial governance and regulation around the globe and specifically in Nigeria. Finally, the study will be essential to investors and other stakeholders in decision-making, predicting future cash flows as the stability and consistency of reported earnings are fundamental.

2. Literature Review

2.1 Conceptual Issues

2.1.1 Environmental Accounting Disclosure (EAD)

The practice of communicating the social and environmental repercussions of an organization's economic actions to specific interest groups and the general public through the annual report is known as environmental accounting disclosures or reporting (Etale & Otuya, 2018). Environmental or natural accounting, also known as "green accounting" in the literature (Tanc & Gokoglan, 2015) or "environmental management accounting" (Qian, Horisch & Schaltegger, 2020), is described as recording the impacts that develop as a result of the way of the use of environmental resources, either favorably or negatively (Esmeray & Tanç, 2009).

As asserted by Tim and Kitto (2011), the main goal of environmental accounting is to give quantitative financial information on the cost of a business entity's environmental activities and the benefits of those activities to the immediate/host community. Additionally, Amiri *et al.* (2014) view environmental accounting as a set of activities that improve an accounting system's ability to detect, record, and report the effects of environmental destruction and pollution, and that can be used systematically by large and small corporations in various industries on various scales and/or based on intended

bases. Furthermore, environmental accounting disclosures serve as public relations tools that shape public perceptions of a company's image and reputation. It is an important component of sustainability or corporate social responsibility reporting that communicates environmental strategy to stakeholders and thus serves as a motivator for business policies, strategies, and management systems aimed at reducing negative environmental effects (Elkington, 1997). Environmental accounting disclosure, according to Ekemezie and Okafor (2020), comes in stages, ranging from ad hoc comments in the annual report to stand-alone environment reports.

Environmental accounting disclosures are divided into two categories by Levin and Fransen (2017) mandatory and voluntary disclosures. While mandatory environmental accounting disclosures are those in which companies' sustainability information is disclosed by the country's legal rules and regulations, voluntary environmental accounting disclosures are those in which companies' sustainability information is disclosed voluntarily and without any legal obligation. Companies' recognition that it is their corporate responsibility to achieve sustainable development by meeting current needs without jeopardizing future generations' ability to meet their needs influenced their environmental accounting disclosure practices to stakeholders in the environment where they conduct business.

According to Satu and Paulo (2016), there are two elements to consider: environmental conservation costs (monetary value) and environmental socio-economic benefits (physical units and monetary value). Accurate quantitative data measurement using EA for each of the facts is an excellent technique to identify and measure an organization's investments in its environment. EA data is utilized not just by organizations internally, but also by the general public for information regarding a company's social responsibility concerns. One method to begin incorporating sustainable development into everyday business choices is to include environmental data in a company's accounting system. One of the most significant functions of environmental accounting is to bring environmental costs to the attention of management, inspiring them to find ways to cut and avoid environmental expenditures while also lowering the company's environmental impact (Adegbei & Nwobodo, 2020).

The seven functions of environmental accounting, according to Bebbington (2015), are recognizing and attempting to mitigate the negative environmental effects of conventional accounting practices, separately identifying environmentally related costs and revenue within conventional accounting systems, actively taking steps to establish initiatives to ameliorate existing environmental effects of conventional accounting practices, and devising new forms of financial and non-financial accounting. Inventing new forms of performance evaluation, reporting and evaluating for both internal and external purposes, recognizing, analyzing, and seeking to redress areas where conventional (financial) criteria and environmental criteria conflict, and experimenting with ways in which sustainability can be assessed and incorporated into organizational orthodoxy are all examples of ways in which sustainability can be assessed and incorporated into organizational ideology. Based on the GRI- G4 Guidelines, the items expected to be disclosed include the nine 300 series (301-308) which are materials, energy, water, biodiversity, emissions, effluents and waste, environmental compliance, and supplier environmental assessments.

2.1.2 Earnings Management (EM)

Li, Abeysekera and Ma (2011) stated that earnings management or manipulation is an extensive phenomenon in firms' financial reporting which could mean accruals quality, earnings persistence, earnings predictability and earnings smoothness. According to Watts and Zimmerman (1978), EM is the level managers exercise discretion over accounting figures and numbers. Magrath and Weld (2002) defined it as practices to neither assist managers in fulfilling their obligations to stakeholders nor deceive investors. In the same vein, Scott (2009) sees EM as choices of policies or actions of accounting that affect achieving a specified goal and objectives. What is consistent among the above definitions is the thought of deliberate manipulation of reported information by managers. EM is the utilization of accruals to achieve a pre-determined target (Goel, 2016).

2.1.3 Types of Earnings Management

As indicated by Omar, Rahman, Danbatta and Sulaiman (2014), contemporarily, there are two key types of EM (accrual and real) which both have support in GAAP. Joosten (2012) stated that the accruals earnings management (AEM) essential goal is to show the true and fair performance of the company by recording revenue and expenditures to the period wherein they are incurred, as opposed to presenting the cash in and out-flow. For instance, the differed revenue is an accrual that is accounted for or estimated for when the cash flow from a sale is received before the recording of the sale (IFRS 15, IAS 18 and IAS 11). If these estimates are biased to affect the underlying true economic performance, AEM has been applied (Healy & Wahlen, 1998). AEM is used to differentiate between non-discretionary and discretionary accruals. Non-discretionary accruals are gotten from ordinary business activities or past transactions that are recorded in the books but yet realized. Real earnings management (REM) on the other hand, is an intermediary variable for the variable for discretionary cash flow. Roychowdhury (2006) characterizes REM as take-offs from normal operational practices with the target of meeting short-term earning objectives. This is to mislead probably a few stakeholders into accepting certain financial-related reporting objectives and these actions are less likely to be challenged by regulators. Realizing short-term objectives, the repercussions of REM have a cost effect on future cash flow.

This study will utilize the accrual bases (discretionary accruals) of earnings management to investigate the relationship between earnings management and environmental accounting disclosure.

2.2 Control Variables

Notwithstanding variables of interest (environmental accounting disclosure), a lot of control variables may affect EM. Subsequently, to avoid the issue of interrelated missing factors, this examination decide to fuse the firm size, the debt ratio and the return on assets. Firm size (FSIZE) is one of the most dominant components in earnings manipulation. A few investigations have proposed that bigger companies face increasing in the capital market; therefore, they tend to manage their earnings (Soyemi & Olawale, 2019). On the other hand, different investigations contend that enormous firms are frequently liable to encourage examination by outsiders, along these lines, do not manipulate their earnings (Linasmi, 2017; Lee & Choi, 2002). This dissimilarity of perspectives demonstrates that the effect of FSIZE on EM is not certain. Like Amar and Chakroun's (2018) study, this study measure size of the firm through the normal logarithm of total assets.

Debt Ratio (DEBT) is the second control variable this study will utilize in the model. It is thought to be a hazard pointer for the organization and can have an impact on EM (Amar & Chakroun, 2018). Linasmi (2017) suggested that a significant debt level can assuage the practices of EM. To consider the impact of the Debt ratio on EM, this study utilizes the debt ratio to total assets which is in line with the study of Amar and Chakroun (2018).

Return on Assets (ROA) is an accounting base measurement that estimates how proficiently an organization can deal with its resources to produce benefits. It enables both management and other stakeholders to perceive how well the organization can change over its interest in resources into benefit. Earlier studies (Soyemi & Olawale, 2019; Amar & Chakroun, 2018; Dechow, Sloan & Sweeney, 1995) recorded EM positively relates to return on assets. In this way, this examination use Return on Assets (ROA), estimated as a benefit after enthusiasm before charge isolated by all-out resources. Thus, this study uses ROA and it is measured through profit after interest and before tax divided by total assets.

3. Theoretical Review

The studies typically used the theoretical framework of stakeholder-agency theory. This study hypnotizes a positive association between sustainability reporting and earnings management by drawing on the stakeholder-agency theory which was propounded by Charles W. L. Hills and Thomas M. Jones in 1992. Although similar to agency theory, stakeholder-agency theory is based on assumptions concerning market processes that are substantially different from those underlying the finance version of agency theory. The result is a paradigm whose predictions are not always consistent with those of agency theory. While agency theory operates on the assumption that markets are efficient and adjust quickly to new circumstances, here the existence of short to medium-run market inefficiencies is admitted (Hill & Jones, 1992).

Under the theory, managers are agents of other stakeholders. This implies if the manager needs to seek after his/her advantages, such as improving an organization's profit to acquire further compensation, he/she ought to outline environmental accounting disclosure practices to fulfil the interests of various stakeholders (Prior, Surroca & Tribo, 2008). These activities are defined as those taken by the firm expected to promote social goods further than the immediate interest of the firm and which is legally necessary (McWilliams & Siegel, 2001). Furthermore, since stakeholders are occupied with monitoring managers, a stakeholder agency shows up as a suitable structure to interface agency costs like earnings management practices and executive entrenchment initiatives related to a company's environmental disclosure (Hill & Jones, 1992). In this study, earnings management is viewed as a sort of agency cost since managers take care of their benefit from financial report publications that do not present an accurate financial image of the firm. As a result, investors could settle on non-ideal venture choices (agency cost) (McWilliams, Siegel & Wright, 2006).

3.1 Empirical Review

Sun, Habbash, Aly and Khaled (2010) examined the connection between environmental reporting and earnings management of 254 United Kingdom non-financial related companies for the period between 2006 and 2007. From the Ordinary Least Square (OLS) analysis, no significant relationship between environmental reporting and discretionary accruals was found. Yip, Van Staden, and Cahan (2011) found mixed outcomes in a study of 80 food and beverage companies and 30 oil and gas companies in the United States.

CSR disclosure and EM are negatively connected in the oil and gas industry, but positively related in the food industry, according to the study. The two industries' outcomes differed due to political concerns. Litt, Sharma and Sharma (2014) provided proof of the relationship between environmental practices reporting and earnings management. It was revealed that organizations engaging with environmental reporting showed lower earnings management proxied by total discretionary accruals. Beredugo (2014) examined the impact of environmental accounting and social responsibility on the earning capacity of three Nigerian manufacturing firms. Questionnaires were used to obtain data from three Nigerian businesses, which were then examined using population t-tests, ordinary least squares, and multivariate statistics. The findings found that environmental cost proxies such as waste management, pollution abatement, and fines and penalties have a considerable impact on a company's earning potential.

From 2005 to 2009, Muttakin, Khan and Azim (2015) studied 580 organizations in Bangladesh and found that managers managed higher earnings when their company's environmental disclosure was better. They also demonstrated how important these were for both investors and governments. This is because companies that are more open about their environmental actions produce transparent financial reports and employ mandatory EM to decrease information asymmetry. Toukabri*et al*. (2017) used a sample of 682 U.S. enterprises to investigate the relationship between environmental accounting procedures and earnings management. The findings of OLS revealed that, on the one hand, CSR activities involving environmental accounting procedures do not stimulate accounting manipulations, and, on the other hand, discretionary accrual is positively associated with the social accounting dimension of CSR. However, return on assets as a control variable has the greatest influence on earnings management.

Linasmi (2017) evaluated the effect of a company's size on earnings management among listed Indonesian companies using multiple linear regression analysis to estimate data from 2010 to 2014. The result showed financial leverage (debt) to have a positive significant impact on earnings management while the company's size and earnings management relationship depicted otherwise. In Nigeria, Uyagu and Dabor (2017) concentrated on the effect of CSR reporting on earnings management among Nigeria manufacturing companies by using the OLS procedure. A sample of 52 companies was utilized and the outcome showed a positive connection between CSR reporting and earnings management. Brahmana, Tan, and You (2018) investigated the link between corporate environmental accounting (CED) and earnings management by looking at 238 publicly traded businesses across three industries(construction, technology, and trading). It was revealed that CED, ROA, and EM have a positive and substantial association while control variable firm size and leverage have no relationship with earnings management.

Gerged, Al-Haddad and Al-Hajri (2019) applied a fixed-effects model to inspect the corporate environmental reporting and earnings management in Kuwait. The study further employed the 2SLS model and a generalized method of moment (GMM) model to address any worries regarding endogeneity issues. The outcome suggested a noteworthy and negative connection between corporate environmental reporting and earnings management. Dasmaran and Mulyani (2019) looked for moderating variables in the adoption of environmental accounting, research development on Earning Response, and ethics. The hypothesis was tested using multiple regressions, and the results revealed that environmental accounting has no effect on the earnings coefficient response, research and development disclosure, and research and development ethics have no effect on the earning response coefficient.

The relationship between environmental performance, carbon performance, and earnings management was investigated by Velte (2020). The research used panel regressions and looked at the financial years 2014–2018 for companies featured on the STOXX Europe 600 index (1,509 firm-year observations). As independent variables, environmental (carbon) performance proxies are used, along with two earnings quality metrics, accrual-based earnings management (ACC) and real earnings management (REM). Environmental (carbon) performance reduces ACC but enhances REM, according to the studies. From 2011 to 2018, Van Ha, Sibghatullah, Chae, and Aldeehani (2020) examined the link between environmental and social disclosure and earnings persistence as a proxy for earnings quality in 136 Bursa Malaysia-listed companies. Based on the regression of the time series model, the measure of earnings persistence was obtained from the panel data and the result showed that environmental and social disclosures are positively connected with earnings persistence.

Omoike (2020) empirically examined corporate social environmental reporting (CSER), earnings management and quoted firm share prices for selected non-financial firms in Nigeria. To achieve the objective of the study, a sample size of 70 listed companies from the Nigerian non-financial sector was selected using Burley's formula popularized by Taro Yamane for sample size determination. The study utilized panel data and Granger Causality to test the hypotheses. Findings from the study showed that only the environmental dimension of CSER has a significant and bi-directional relationship with firm share prices. However, the other dimensions of CSER have an insignificant bi-directional relationship with share prices. From 2010 to 2014, Gerged *et al.* (2021) investigated whether internal corporate governance systems influence the link between corporate environmental disclosure and EM practices within a sample of 100 Jordanian-listed companies. While the association between CED and earnings manipulations is negative, the links between CG arrangements and EM are diverse in that they may have reduced or increased earnings manipulations in Jordan, according to the findings of the multivariate regression analysis.

In line with the reviewed literature and its inconsistent conclusion, the null (H_0) hypotheses were formulated:

H_{01}: The practice of environmental accounting (materials, energy and water) disclosure does not influence earnings management among Nigerian industrial companies.

H_{02}: The environmental accounting (biodiversity, emissions, effluents and waste) disclosure practices do not impact earnings management among Nigerian industrial companies.

H_{03}: Environmental accounting (environmental compliance and supplier environmental assessments) disclosure does not affect discretionary accruals earnings management among Nigerian industrial companies.

4. Methodology

The research approach for the study is quantitative because the study employed numerical values derived from the annual report of sampled companies and the research design adopted for this study is ex-post facto research design. While the study population consists of 14 Nigerian industrial goods companies as of 31st December 2021 and the census sampling technique was utilized because of the possibility of studying the entire population. More so, data was sourced through secondary means from the audited annual report of the sampled companies between 2013 and 2022. The choice of this period

is hinged on the need to examine the compliance level of environmental accounting after the adoption and implementation of IFRS in Nigeria which was 2013. Similarly, the Year 2013 is chosen to be the year the latest GRI guidelines which are GRI-G4 guidelines started. While the year 2021 was the year in which the annual reports of sampled industrial goods firms were readily available for public access. To improve the reliability of the results, certain robustness tests such as pear-wise correlation and variance inflation factor(VIF) were carried out before employing the multiple regression analysis to evaluate the data. The post-estimation diagnostic such as Breusch and Pagan Lagrangian Multiplier (BP-LM) was also conducted.

4.1 Model Specification

The below model was used to test the premise that environmental accounting disclosure practices have an impact on discretionary accruals:

Earnings management = f (environmental accounting disclosure, firm size, debt ratio, return on assets)

It is econometrically depicted as:

$$DAC_{it} = \beta_0 + \beta_1 EAD_{it} + \beta_2 FSIZE_{it} + \beta_3 DEBT_{it} + \beta_4 ROA_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

4.2 Measurement of Variables

Table 1: Definition and Measurement of Variable Used in the Study

Variable acronym	Variable name	Measurement	Type of Variable
DAC	Discretionary accruals	Total accruals (change in non-cash current assets minus change in current liabilities excluding the current portion of long-term debt) minus depreciation and amortization) scaled by lagged total assets	Dependent Variable
EAD	Environmental accounting disclosure	Content analysis of 9 items (materials, energy, water, biodiversity, emissions, effluents and waste, environmental compliance, supplier environmental assessments)	Independent Variable
FSIZE	Size of companies	The logarithm of total assets.	Control variable
DEBT	Debt ratio	Non-current liability divided by total assets	Control variable
ROA	Return on assets	Profit after interest before tax divided by total assets	Control variable

Source: Author's compilation, (2022)

4.3 Data Presentation, Analysis, and Interpretation

Table 4.1 presents the statistics summary of dependent and independent variables of sampled industrial companies in Nigeria.

Table 4.1: Summary Statistics

	Mean	**Std. Dev.**	**Jarque-Bera**	**Observations**
DAC	0.5009	0.2970	189.0075	126
EAD	0.6195	0.4987	10.09549	126
FSIZE	0.7285	0.3086	98.75651	126
DEBT	0.7222	0.3526	62.98766	126
RAO	0.9353	0.0987	34567.99	126

Source: Author's Computation(2022)

From Table 4.1, the discretionary accrual (DAC) of sampled industrial companies in Nigeria has a mean and standard deviation values are 0.5009 and 0.2970 respectively. The standard deviation signifies that the data deviate from the mean by a value of 0.5009 which implies that DAC among sampled companies does not relatively differ from one company to another. Similarly, Table 4.1 presents the distribution of sampled industrial companies that were disclosing environmental activities (EAD). Further evidence from the descriptive statistic result reveals that sampled industrial companies were practicing EAD with an average of 0.6195 (62%) and a standard deviation of 0.4987.

More so, Table 4.1 shows mean and standard deviation values of 0.7285 and 0.3086 respectively for firm size (FSIZE). The standard deviation signifies that the data deviate from the mean by a value of 0.7285 and this implies relatively wide dispersion of the data from the mean because the standard deviation is lesser than the mean value. The average value of debt ratio is 0.7222, and the standard deviation is 0.3526 and this suggests a majority of the industrial firms included in the sample have more assets than debts. Finally, the summary statistic table shows 0.9353, and the standard deviation is 0.0987 for the profitability variable of return on assets. The standard deviation signifies that the data deviate from the mean by a value of 0.9353 and this implies wide dispersion of the data from the mean because the standard deviation is lesser than the mean value. It also signifies that the sampled companies on average generate a return (profits) of 90% on their total assets.

4.4 Multicollinearity Test

For all variables, Table 4.2 displayed a Pearson correlation matrix and variance inflation factor. Note, Gujarati (2009) argued that when the correlation coefficient between two independent variables is greater than 0.8, there may be a problem with multicollinearity. It is clear from Table 4.2 that there is no perfect relationship between the different pairs of independent variables and no collinear variables. More so, a further investigation was carried out using the VIF. Table 4.2 also shows VIF and its inverse technical tolerance for all variables. From the rule of thumb, every variable exceeding 10 is strongly collinear and vice-versa. Since all VIF of variables are below 10, this implies they are not collinear.

Table 4.2: Pair-wise Correlation and Variance Inflation Factor (VIF)

	Pairwise Correlation				**VIF**	**1/VIF**
VARIABLES	**EAD**	**FSIZE**	**DEBT**	**RAO**		
EAD	1.0000	0.0597	0.3688	0.0563	1.16	0.8621
FSIZE	0.0597	1.0000	0.1587	0.0618	1.27	0.7874
DEBT	0.3688	0.1587	1.0000	0.0851	1.33	0.7519
RAO	0.0563	0.0618	0.0851	1.0000	1.2	0.8333
MEAN VIF					1.24	

Source: Author's Computation (2022)

4.5 Heteroskedasticity Test

As it is known that the presence of heteroskedasticity is a major problem in regression analysis and variance analysis because it invalidates statistical tests of significance that assume that modeling errors all have the same variance, the Heteroskedasticity Test Breusch-Pegan-Godfrey was conducted and the result is in Table 4.3. From Table 4.3, it can be seen that the model is not heteroskedastic, thus, the null hypothesis is accepted

Table 4.3: Heteroskedasticity Test Breusch-Pegan-Godfrey

Test	Statistic		Prob.
F-Statistic	5.811112	Prob. F(2,123)	0.0592
Obs*R-squared	78.63660	Prob. Chi-Square(2)	0.0641

Source: Author's computation (2022)

Post-estimation test (Breusch-Pagan) was used to test for the presence of individual heterogeneity to decide the appropriate model between pooled and random vs. fixed effect models. Since the null hypothesis is consistent with the assumption of the pooled model, the result of BP LM supports the acceptance of pooled model against the random/ fixed effect model. Overall, Table 4.4 reports the random effect result obtained by testing the association between independent variables (EAD, FSIZE, DEBT and ROA) and dependent variables (DAC). The R^2 for the model is 62.41 and the Prob>Chi is significant at 0.000 which is higher than the critical F-value of 1% and 5% significance levels. This suggests that this is a good predictive model of earnings management measured by discretionary accruals for the sampled industrial companies in Nigeria.

Table 4.3: Pooled OLS

Discretionary Accruals	Coefficient	Standard error	p-value
EAD	.28666	2.8545	0.000***
FSIZE	5.8977	2.2214	0.032***
DEBT	.24931	2.1181	0.177
ROA	5.4937	1.9426	0.008***
C	1.6999	10.308	0.000***
R^2	0.6241	Adjusted R^2	60.01
p-value	(0.0000)***		
Breusch-Pagan LM test	72.59(0.000)***		

***, ** and * indicate statistically significant at 1%, 5% and 10% significance level, respectively.
Source: Author's Computation (2022)

Based on the individual statistical significance, Table 4.3 revealed the impact of regressor environmental accounting disclosure on the dependent variable discretionary accruals by suggesting a positive relationship between EAD and DAC with .2059056 as coefficient and p-value of 0.000. It is significant at 1%, 5% and 10% significance levels. This indicates that earnings management is determined by the practice of environmental accounting disclosure by sampled companies. This result is similar to the relationship between DAC and independent variable FSIZE and ROA with .0409522 as the coefficient and 0.032, and 0.008 as the p-value respectively. It is significant at 1%, 5%.

By inference, therefore, an increase in change of total assets and profitability in terms of ROA of sample firms results in a decrease in their engagement in managing earnings. In other words, industrial sector companies with large assets might be doing well in terms of financial performance; this in turn will discourage them not to engage in manipulation of their earnings. Lastly, Table 4.3 shows that the debt ratio with a coefficient of -.2077877

and p-value of 0.177 is negatively insignificant related to discretionary accruals, indicating that leveraged firms tend to manipulate their earnings. This is explained by the fact that leveraged companies might not have creditors and other stakeholders close monitoring.

5. Conclusion

This study examines the effect of environmental accounting disclosure practices on the earnings management of quoted industrial companies in Nigeria over the period 2013-2021 with the use of control variables such as firm size, debt ratio, and return on assets. The empirical findings showed that environmental accounting disclosure has a significant and positive effect on the discretionary accruals of the selected listed firms. In other words, organizations with high levels of EAD practices are thought to have better financial performance and so do not choose to alter their accounting results. This finding conforms with the a priori expectation and the study of Litt *et al*. (2010), Beredugo (2014), Brahmana*et al*. (2018); Velte (2020). These studies asserted that the disclosure of environmental accounting items is significantly and positively related to earnings management proxy by discretionary accruals. However, the study of Sun *et al*. (2010), Toukabri *et al*. (2017); Gerged*et al*. (2019) revealed a contrary result.

The finding led to the rejection of the null hypothesis (H$_0$) that environmental accounting disclosure has no significant effect on the earnings management of quoted industrial firms in Nigeria.In line with the theory that underpinned the study (stakeholder-agency theory) which suggested that a company is seen not as a bilateral relationship between owners and management, but as a multilateral collection of stakeholder relationships. Firms can minimize earnings management practices by projecting an image of care by disclosing environmental accounting items. Lastly, it is recommended that Nigerian industrial companies should always try to have long-range trends/patterns accessible for each of the environmental variables to help identify the effects a strategy would have on earnings.

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