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RESEARCH ARTICLE

CORPORATE GOVERNANCE AND ENVIRONMENTAL MANAGEMENT: A STUDY OF QUOTED INDUSTRIAL GOODS COMPANIES IN NIGERIA

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Abstract

This study examined relationship between board size and environmental management of quoted industrial goods companies in Nigeria. The Ex post-facto research design was employed. A sample of twelve (12) industrial goods companies which formed the population of the study was used. Data were obtained from the sampled public quoted industrial goods companies in Nigeria for the period 2010-2019. The data extracted were analyzed using descriptive statistics, and Ordinary Least Square (OLS), statistical technique was used to test the data. Findings from the statistics revealed that board size have positive effect but this was not statistically significant on the environmental disclosure index. On the basis of the findings, it was recommended among others that governance measure of board size which was found to have positive association with environmental management need to be increased to accommodate highly experienced board members on environmental-related matters in order to make products and services of industrial goods companies more environmentally friendly.

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Introduction:-

Rapid industrialization activities throughout the world have been seriously menacing mankind's ability to maintain an ecological balance as release of waste by industries brings environmental pollution or degradation (Pradip, 2016). The relationship between business and the environment is reciprocal because, business has effect on the environment, and environment has effects on business, although various companies may perceive environmental concerns as either a benefit or a cost and cannot ignore the fact that the environment and the business cannot fully be decoupled from one another (Pradip, 2016).

Today, environmental management is not only a tool for adhering to environmental laws and regulation, or even a question of ethics and moral: in many cases it has evolved into an opportunity for companies to enhance the firm's value and to obtain financial gains (Pradip, 2016). Industrialization is the prerequisite of economic growth of any country; but unplanned industrialization and release of waste by industries brings environmental pollution or degradation. Every developmental activity directly relates to natural and environmental resources. Economic development without environmental considerations can lead to environmental crises. The ecological role played by corporate sectors responsible for their business activities on the environment is becoming particularly explicit in the global market, especially in Nigeria. Therefore, management of both environmental and natural resources in a country like Nigeria has become more urgent.

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Environmental management is a special valuable for sustainability initiatives with specific environmental focus on cleaner production, waste management, supply chain management, “given” product or service design, environmentally preferable purchasing and environmental management systems (Pradip, 2016). Although the benefits of environmental management is obviously apparent, conventional tendencies in which profitability and increment of shareholders’ value are prioritized above all business values seem yet a largely practiced business phenomenon (Galamadien 2011; Shezi 2013; Spicer 2013; Niehaus 2016; Onyali& Okafor 2018), as costs and business pressure linked to the essence of meeting daily operational overheads, cause skewed approaches in which most firms get strongly preoccupied with profitability to enrich shareholders’ value at the expense of the environment.

Furthermore, given the diversity of expertise, information, and availability that is needed to understand and govern today’s complex businesses, it is unrealistic to expect an individual director to be knowledgeable and informed about all phases of business. Scholars have therefore suggested for board diversity as one of the ways to enhance better business practices (ACCA, 2015). Some scholars refer to board diversity as a demographic phenomenon entailing age, gender, and ethnicity, while others refer to board diversity as a structural phenomenon comprising CEO duality, board independence, and director ownership (Hoang, Abeysekera& Ma, 2016). Therefore, it is pertinent to determine whether board diversity, size, and ownership promote environmental management practices. It is against this backdrop, that this study examined the effect of corporate governance indicator on environmental management of quoted industrial companies in Nigeria. Specifically the study seeks to achieve the following:

To ascertain the effect of Board Size on environmental disclosure index of quoted industrial companies in Nigeria.

Review of Related Literature:-

Environmental Management

Environmental Management is concerned with the management for environment encompassing a business. Barrow (2005) described the concept of environmental management as a goal or vision that entails the application of set of tools to a philosophical exercise seeking to establish new perspectives towards the environment and human societies. According to Pradip (2016), environmental management is concerned with the description and monitoring of environmental changes, with predicting future changes and with attempts to maximise human benefit and to minimise environmental degradation due to human activities.

The basic functions of good environmental management are goal setting; information management; support of decision making; organizing and planning of environmental management; environmental management programs; piloting; implementation and control; communication; internal and external auditing (Pradip, 2016). Precise knowledge of various facets of sound environmental management is the sine qua non for sustainable development which meets not only the requirements of the present generation but also of the future generation. Environmental management is especially valuable for internal management initiatives with a specific environmental focus, such as cleaner production, supply chain management, “given” product or service design, environmentally preferable purchasing and environmental management systems. Environment takes into consideration all conditions required for the survival of corporate sectors and absence of environmental consideration causes serious ecological damage.

Board Size

Board size of an organization is the number of directors on board of the organization which includes executive and non-executive directors. Prior literatures on board size and environmental management have generated mixed results in developed countries (Guest, 2009; Adams and Mehran, 2012; Wintoki, Linck& Netter, 2012). Moreover, Nigerian studies (Ujunwa, 2012; Adebayo, Ayeni & Oyewole, 2013; Dabor, Isiavive, Ajagbe&Oke, 2015; Ironkwe&Adee, 2014; and Ilaboya&Obaretin, 2015) have examined the relationship between board size and financial performance, with dearth of empirical studies on board size and environmental management, particularly in the industrial subsector.

Empirical Review

Quite numbers of studies have been examined on environmental issues in relation with financial performance of corporate organizations. Nwaiwu and Oluka (2018) examined 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.

Olaoye and Adekanmbi (2018) examined the impact of environmental management accounting practices and report on organization performance. Specifically, the study investigates the present accounting practices for managing the significant environmental costs in the south-west Nigerian universities and to establish elements that can improve ECD sustainability within south-west Nigerian universities. The study made use of descriptive design survey type through structured questionnaire and the study employed stratified random and purposive sampling as sampling techniques. The findings of the study revealed that there is low present practice of environmental management accounting in South West Nigerian universities. The study also revealed that factors such as Low priority of accounting for environmental costs, resistance to change, Lack of institutional pressure, Lack of environmental responsibility & accountability and so on are strong factors that account for slow pace of ECD adoption in South West Nigerian universities. Therefore, it is concluded that the role of management accounting in improving environmental performance has not yet been recognized and this has impeded the ECD adoption in South West Nigerian universities.

Nobanee and Ellili (2017) investigated the impact of economic, environmental, and social sustainability reporting on financial performance of UAE Banks in Abu Dhabi Securities Exchange and the Dubai financial market during the period 2003-2013. The study employed three sustainability disclosure dimensions including i) economic, ii) environmental and iii) social dimensions against banking performance which they measured using ROE. Employing a panel data analysis technique, their results revealed that sustainability disclosures as well as economic, environmental and social disclosures have no significant effects on the banking performance of UAE banks, whether they are conventional or Islamic banks.

Owolabi, Akinwunmi, Adetula and Uwuigbe (2016) examined the extent of sustainability reporting practiced by Lafarge Africa Plc. Content analysis was used to analyze the data extracted from their annual reports and the Global Reporting Initiative (GRI) G4 sustainability reporting guideline was used as a basis of assessment. The study found no disclosures on human rights issues, 3% environmental disclosures and an aggregate of 30% disclosure based on one hundred and sixty-nine indicators used.

In a study by Okoye and Ezejiofor (2013), their paper assesses the appraisal of Sustainability environmental accounting in enhancing corporate performance and economic growth. This study reviewed various forms including journal papers, articles and other relevant materials. This paper analyzed and tested two hypotheses with Pearson Product Movement Correlation Co-efficient. The study discovered that sustainable environmental accounting has significant impact on corporate productivity in order to enhance corporate growth.

Bassey, Oba and Onyah (2013) critically analyze the extent of implementation of environmental cost management and its impact on output of oil and gas companies in Nigeria from 2001 to 2010. The paper was aimed at ascertaining the extent to which implementation of environment cost management has impacted on the oil and gas industries in Nigeria. The study used multiple regression analytical technique. Findings revealed that there is a significant relationship between the parameters that influence environmental cost management and output of oil and gas produced in Nigeria. Also, it was discovered that there are no established standards in Nigeria guiding environmental cost management in the oil and gas industries in Nigeria.

Uwuigbe and Egbide (2012), investigated the relationship between the financial performance of firms and the level of web-based corporate environmental disclosure among other objectives. The study provides analytical evidence that a positive association existed between the variable corporate environmental disclosure and Return on Assets, Return on Equity and Firm Size and they are all significant. The study further provides an insight to the fact that to a very great extent, the financial performance and the size of firms do plays a very significant role in or has a strong influence on the level of web-based corporate environmental disclosure among the selected firms.

Enahoro (2009) assessed the level of independence of tracking of costs impacting on the environment; level of efficiency and appropriateness of environmental costs and disclosure reporting. The research instruments utilized in the study were primary data survey and secondary data elucidation. For this purpose, cross-sectional and longitudinal content analyses were carried out. The test statistics applied in the study were the t-test statistics, Pearson Product-Moment correlation tests, ANOVA, and Multivariate Linear Regression Analysis. The study

investigated best practice of environmental accounting among companies currently operating in Nigeria. Findings are that environmental operating expenditures are not charged independently of other expenditures. There is also, absence of costing system for tracking of externality costs. Environmental accounting disclosure does not however, take the same pattern among listed companies in Nigeria.

Mirfazli (2008) discovered in his research that failure to carry out social responsibilities will cause more harm to a business than any good. Unethical business practice is no longer fashionable even in a country as poverty-ridden as Nigeria. Such can only attract negative feedback to any organization due to increased media attention, responsive and investigative journalism as well as increased social media in Nigeria. Ethical responsibilities do attract and retain the best workers in an organization.

Seetharaman, Mohamed and Saravanan (2007) reviewed the relationship of environmental accounting and environmental management system in order to determine the sustainability of organization. It also identified the lack of awareness and interest by organization about environmental preservation distinguish the context for environmental management needs in developing and newly industrialized countries compared to western countries. However, the growing awareness and pressure by community, customer, and stakeholders has forced the organization to accept the introduction of environmental protection measures into their organization. The paper, also discusses number of pollution prevention strategies. It concludes with an emphasis on the use of environmental accounting for continuous improvement in environmental corporate policies and programs by taking into account the regulatory, technical developments, scientific developments, and it must be fully integrated into EMS along with other functional area.

In the light of the significant differences in externalities and the application of corporate environmental management components between the developed and developing countries, the empirical evidences may not be relevant in ascertaining the determinants of environmental management in developing countries. This has necessitated the urgent need for a study towards this direction in a developing country like Nigeria. Hence, this study fills this gap in research.

Methodology:-

Research Design

In this study, the ex-post facto research design was employed because the study seeks to establish the factors that are linked with certain occurrence by analyzing past events of already existing conditions; thus, there is no need for control over certain variables as the events already exist and can neither be changed.

Population of the Study

The population of the study consists of twelve (12) industrial goods companies quoted on the NSE as of 31st December, 2019 (NSE, 2019). The industrial goods companies were chosen for this study because of the significant impact of the activities of the industrial firms on the environment. This study covered 10 years period from 2010-2019. Below are the quoted industrial goods companies provided on the NSE website as of December, 2019:

Table 1:- Industrial Goods Companies Quoted on NSE.

S/N	Companies
1	Austin Laz & Company Plc
2	Berger Paints Plc
3	Beta Glass Plc.
4	Chemical and Allied Product Plc.
5	Cutix Plc.
6	Dangote Cement Plc
7	Greif Nigeria Plc
8	Lafarge Africa Plc
9	Meyer Plc
10	Portland Paints & Products Nig. Plc
11	Premier Paints Plc
12	Notore Chemical Industries

Nigerian Stock Exchange Website (2020)

Sample size

The researcher used all the twelve industrial companies for the study; hence the researcher was able to extract all the relevant data from the twelve companies for the periods covered by the study.

Source of Data

The study used secondary data comprising board size, and environmental disclosure index. Data were sourced from the NSE fact book and the annual reports and account of the selected companies for the period of ten (10) years spanning from 2010-2019. The data obtained in this study have been validated by the regulatory framework of accounting and economic activities in Nigeria.

Table 2:- Measurement of Variables.

Variable Type	Indicators	Variable Symbols	Variables Explanation
Independent Variable (Corporate Governance)			
	Board Size	BODS	Number of directors on the board
Dependent Variable (Environmental Management)			
	Environmental Disclosure Index	EVDI	0 for coy with environmental impact; 1 if otherwise

Source: Researchers' Compilation (2020)

Model Specification

This present study builds on existing model of Pradip, (2016). In this study, determinants of environmental management were measured using corporate governance measures of board size. However, this study adapts these models by introducing a controlling variable (business size) and diverse indicators of environmental management. In view of this, regression equation was set up to investigate the hypothesized relationships between the dependent, independent and control variables of the study. The econometric form of the equation is given as:

$$Y = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + \mu_{it}$$

Where: β_0 = Constant (intercept); β_1 = Coefficient of the independent variables; Y = Dependent Variable; X = Independent Variable; μ = Error term.

To test H_1 , the study estimated the following multiple regression equations. The multiple regression equation examined the relationship between corporate governance indicators (board size) and environmental management (environmental disclosure index) of industrial goods companies publicly quoted on the NSE. The regression models are given in the following equations:

$$EVDI_{it} = \beta_0 + \beta_1 BODS_{it} - \dots - \mu_{it} - \dots - eq.i$$

In order to validate the hypothesis of the study, the following regression models were employed:

Where: $EVDI_{it}$ = Environmental Management (proxied by environmental disclosure index of companies i in period t);

$BODS_t$ = Number of directors on the board;

μ_{it} = Error term firm i in period t

Method of Data Analysis:-

The study used regression analysis in testing the formulated hypothesis. Regression analysis predicts the value of a variable based on the value of the other variable and explains the effect of changes in the values of the variables.

Furthermore, the formulated hypothesis was tested with regression statistical tools carried out by means of E-view version 9.

Decision Rule:

The decision rule is that reject H_0 if the p-value of the test is less than α -value (level of significance) at 5%, otherwise accept H_1 .

Test of Hypotheses

In other to examine the impact and relationships between the dependent variable EVDI and the independent variable (BODS) and to also test our formulated hypothesis, we used a pooled multiple regression analysis since the data had both time series (2010-2019) and cross sectional properties (12 industrial good companies). The pooled interaction based multiple regression results are presented and discussed in Table 3 below:

Table 3:- EVDI Pool Regression Results.

Dependent Variable: EVDI				
Method: Least Squares				
Date: 03/21/21 Time: 12:52				
Sample: 2010 2019				
Included observations: 10				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.02141	38.88595	0.540591	0.6120
BODS	0.015235	0.587876	0.025916	0.9803
R-squared	0.199717	Mean dependent var		0.400000
Adjusted R-squared	-0.440510	S.D. dependent var		0.516398
S.E. of regression	0.619787	Akaike info criterion		2.187971
Sum squared resid	1.920680	Schwarz criterion		2.339264
Log likelihood	-5.939857	Hannan-Quinn criter.		2.022004
F-statistic	0.311947	Durbin-Watson stat		1.092732
Prob(F-statistic)	0.859005			

In Table 3, R-squared and adjusted Squared values were (0.20) and (-0.440) respectively. The indicates that all the independent variables jointly explain about 20% of the systematic variations in deferred tax (EVDI) of our samples companies over the ten years periods (2010-2019). The F-statistics (0.312) and its P-value (0.612) show that the EVDI regression model is well specified.

Test of Autocorrelation:

Using Durbin-Waston (DW) statistics which we obtained from our regression result in Table 3, it is observed that DW statistics is 1.093 and an Akika Info Criterion and Schwarz Criterion which are 2.188 and 2.339 respectively also further confirms that our model is well specified. In addition to the above, the specific findings from each explanatory variable are provided as follows:

Hypothesis One

Ho₁: Board Size has no significant effect on environmental disclosure index of quoted industrial companies.

Hi: Board Size has significant effect on environmental disclosure index of publicly quoted industrial companies.
0.6262

Board Size(BODS), based on the t-value of 0.025916 and p-value of 0.980, was found to have a positive effect on our sampled quoted company's environmental disclosure index, but this effect was not statistically significant as its p-value is higher than 0.05 value. Therefore, this study accepts our null hypothesis one (Ho₁) which states that Board Size has no significant effect on the environmental disclosure index of quoted industrial companies.

Discussion of Findings:-

The result of this study revealed that Board Size has no significant effect on the environmental disclosure index of quoted industrial companies. However, the correlation matrix also revealed that no two explanatory variables of the study were perfectly correlated, since none of the correlation coefficients exceed 0.8. Despite the insignificant of relationship examined, this study revealed that cooperate governance mechanism do exert a positive influence on

environmental management. This implies that a higher engagement in corporate governance particularly as it relates to board size characteristics might bring about an increase in the environmental management of companies.

Conclusion and Recommendations:-

Prior studies have shown that corporate governance mechanisms play a significant role in enhancing environmental management and reporting disclosure of companies in Nigeria, the world over. The result of this study revealed that while corporate governance indicators affect environmental management of industrial goods companies in Nigeria. Overall, the study concludes that corporate governance affects environmental management of quoted industrial goods companies on the Nigerian Stock Exchange.

On the basis of the findings, the following recommendations were proffered:

Corporate governance should have environmental awareness in their planning and control systems while making managerial decisions, since corporate governance are accountable for environmental issues and such issues relating to products/services environmental impact should be highlighted in management accounting; this will help improve environmental disclosure index of publicly quoted companies.

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