IMPACT OF ENVIRONMENTAL DISCLOSURE ON FINANCIAL PERFORMANCE OF CEMENT MANUFACTURING COMPANIES IN NIGERIA

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ABSTRACT

Environmental disclosure is a significant element voluntarily disclosed by organizations, as integral part of corporate social responsibility. This study examined impact of environmental disclosure on financial performance of listed cement manufacturing companies in Nigeria. An ex post facto research design was adopted. The study generated Panel data from the listed cement manufacturing companies' annual reports and financial statements for the period 2017 to 2021. The data was analyzed using descriptive and fixed effect techniques. From the result, the estimated coefficient of environmental disclosure is positive (0.439) and statistically significant at 1 per cent. This showed that environmental disclosure has positive impact on financial performance of listed cement manufacturing companies in Nigeria. It means that higher levels of environmental disclosure will result to better financial performance of cement manufacturing companies. The control variable leverage (0.0645) was positive and statistically significant at 5 per cent. Based on the findings, the study recommends that relevant stakeholders including government agencies and accounting professional bodies should put in place practical monitoring instruments to ensure that firms in the Nigerian cement industry engage in better environmental accounting since it plays key role in their financial performance and long-run survival, by extension.

Keywords: Environmental disclosure, cement manufacturing companies, financial performance, return on asset

INTRODUCTION

The global economy experienced stumbling phases several years ago when financial crisis hit the USA. Investors unrealized about bubble economics phenomenon and misjudged it as economic strength (William, 2012; Geoffrey, 2010). One of the causes of the financial crisis is that companies apply the concept of profit maximization in ways that violate the profit maximization principle itself, including economic cost, accounting cost, and opportunity cost (Yahaya, 2018). The impact of violating these principles manifests in poor environmental management, low environmental performance, and low intention to conserve the environment (Geoffrey, 2010).

Environmental reporting reduce physical risk by way of climate change and business risks in term of volatile energy and commodity prices (Environmental Reporting Guidelines, 2019; Epstein, 2008). Corporations pursue industrial development and generate environment load at the detriment of the environment. Corporate goals are pursued with little empathy for the environment. Some economic developments come with hazards on environmental resources so long as most economic activities drew materials from forests, soil, seas and waterway (Dyduch & Krasodomska, 2017). The associated hazards are evident in reckless disposal of untreated or partly treated industrial wastes into open drains, streams and lagoons with negative implications on nations' economy.

Environmental disclosure entails providing information to the general public about organizations efforts at keeping the environment safe through minimization of environmental liability. It provides platform for management to give environmental stewardship. Environmental costs are cost expended on protecting the environment, reduce damage and prevent environmental hazards (Ezeagba et al., 2017).

There is a general notion that cost incurred on environmental conservation and protection reduces shareholders' returns. However, Hasan and Hakan (2012, as cited in Olasupo et al., 2017) argue that investment on the environment constitute additional cost in the short-run; but produces greater revenue and minimize cost in the long-run. Thus, environmental disclosure improves long-term profitability through cost savings and reduction of negative perceptions of stakeholders on corporate risk (Amran et al., 2018).

Globally, cement considered an essential material for building and other civil engineering works. As such, it is a critical success factor for housing and other infrastructural needs of individuals, governments, and corporate entities. Unfortunately, operations of cement producers such as quarrying, crushing, grinding, blending and packaging rank among major polluting and degrading activities to air, soil, water, vegetation, and other environmental components (Kumar et al., 2019). Daferighe (2020) contends that carbon and cement dust emission affect human life in the form of lung diseases and cancer resulting from pollution; and that a number of lives are lost due to toxic leakage from plants of cement companies.

Against the foregoing background, it appears pertinent for cement manufacturing companies to disclose their environmental activities in their annual financial reports as a means of providing relevant information in good faith to all stakeholders. International Standards Organization (ISO) 26000 and ISO 14001 provide guidelines for measuring environmental commitment of companies. However, recent studies on environmental disclosure are without definitive (specific) disclosure criteria.

Therefore, the current study aims to investigate the relationship between environmental disclosure and financial performance of listed cement manufacturing companies in Nigeria using the globally reporting index (GRI) G4 guidelines. The objective of the study is to examine environmental disclosure practices among cement manufacturing companies in Nigerian and ascertain whether those practices have significant relationship with their financial performance.

LITERATURE REVIEW

Environmental Disclosure

The idea of environmental disclosure stems from environmental accounting which describes companies' conscious efforts to conserve the environment (Octavia, 2012). Environmental accounting involves integrating environmental costs into firms' accounting practices (Geoff, 2005). The United States Environment Protection Agency (US EPA), environmental accounting describes environmental costs that should be considered by corporate stakeholders in identifying ways to reduce or avoid costs through environmental improvement efforts (Jasch, 2002).

A critical component of environmental accounting therefore, is environmental disclosure. Campbell (2020) conceive environmental disclosure as any report that pertains to a company's processes or operations that impact the natural environment. It is a medium through which companies display transparent and accountable behaviour to stakeholders about their environmental performance which is reported in the companies' annual reports, stand-alone reports or companies' web-sites.

The Association of Chartered and Certified Accountants (ACCA) described environmental disclosures as a mix of narratives, including objectives, explanations and data, such as the amount of pollution, resources consumed for a specific accounting period on the environmental effect of a company (Diantimala, 2018). In the view of Ong et al. (2016), environmental disclosure is a formal statement defining the environmental burden and efforts of an organization, including the objectives of the company, environmental policies and impacts regularly reported and released to the public.

Concept of Financial Performance
Financial performance of a firm is reflected in its corporate success. It involves the use of organization assets to generate revenue. Financial performance enables management to give account of their stewardship to shareholders on firm profitability, value and firm growth (Olasupo et al, 2017). Financial performance is the extent to which organization objectives and policies have been achieved in monetary term (Solomon, 2020).

A company is assumed to be performing if it is able to meet its obligations as at when due. In accounting literature, financial performance has been measured as firm growth, size of the firm, firm's profitability or market share (Ezeagba, 2017; Okafor, 2018; Solomon, 2020; Fasua, 2020). Firm's size is often measured as Total Assets; profitability as Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, Earnings Per Share, Gross Profit Margin or Profit After Tax.

2.2 Empirical Review
Environmental disclosure are reports associated with environmental indicators such as renewable energy and industrial waste management options available at the disposal of firms and corporate organizations. Currently, there are 30 indicators required for disclosure under environmental reporting (Pareek et al, 2019). Several studies have investigated the relationship between environmental disclosure and firm's financial performance (Amran et al, 2010; Ezeagba et al, 2017; Olasupo et al, 2017; Okafor, 2018; Fasua et al, 2020).

Many scholars have equally examined the relationship between firm based characteristics, financial performance and environmental reporting (Pareek et al, 2019; Onyali & Okafor 2018). While most of these studies only considered the impact of environmental disclosure on firm's financial performance, several measures (waste management cost and ISO 14031) GRI (G4) guidelines were adopted as indices of environmental disclosure. Overall, results from those studies were mixed.

Ezeagba et al (2017) considered environmental accounting disclosures and financial performance of food and beverage companies in Nigeria from 2006 to 2015. The study rested on stakeholders' theory, it measured financial performance in terms ROE, Return on Capital Employed (ROCE), Net Profit Margin (NPMP) EPS. The study reported a significant relationship between environmental accounting disclosure and return on equity; and a positive significant relationship with EPS and environmental accounting disclosure.

Fasua eta al (2020) examined environmental accounting and corporate performance of listed companies in Nigeria for five years (2014 to 2018). 18 companies found on the Nigerian Stock Exchange (NSE) were selected. The variables of interest ROA, NPM and EPS. The result show that increases in ROA lead to increase in environmental accounting disclosure propensity. The study also documents positive significant relationship between NPM and environmental accounting disclosure.

Also, Pareek et al. (2019) investigated the effect of corporate governance parameters and firm-specific factors on environmental disclosure practices of 38 non-financial firms listed on Nifty 50 index between the periods of 2013-2017 in India. The findings revealed that firm age is positively associated with environmental disclosure practice while the board size has significant positive effect on environmental performance disclosures. Board independence is negatively associated with environmental performance disclosure. The result pointed to the fact that older companies are favorably disposed to environmental disclosure than newly established firms.

In addition, Onyali and Okafor (2018) examined firm attributes and corporate environmental performance of listed quoted industrial good firms on Nigerian Stock Exchange between of 2008-2017. The result revealed that firm size, profitability and firm age have statistical significance on corporate environmental performance. Okafor (2018) examined environmental cost accounting and reporting and financial performance of quoted oil and gas companies in Nigeria. The finding revealed a significant positive relationship between financial performance (ROA) and ECA disclosure.

In other studies, Bednárová et al. (2019) found significant differences between environmentally sensitive sector and non-environmental sensitive sector and level of environmental reporting; Solomon (2020) and Olasupo et al. (2017) reported a significant positive relationship was environmental disclosure and financial performance of oil and gas companies in Nigeria; while Abubakar et al. (2017) showed that environmental disclosure has positive insignificant relationship with ROA and EPS, and a negative insignificant impact on ROA and ROE.

Theoretical foundation

This study is grounded in legitimacy theory and stakeholders' theory. Legitimacy theory assumes that the actions of an enterprise are considered desirable, proper and appropriate within certain socially constructed systems of norms, values, belief and definitions within the society where it operates (Suchman, 1995). Legitimacy theory is a befitting theory for this study because of the idea that a firm's legitimacy derives from the desirable, appropriate and valuable contributions it makes to its operating environment.

Stakeholders' theory on the other hand, provides that a set of constituencies exists, which have vested interest in firm's operations; and that these interests must be attended to, at all times, if the firm is to operate without hitches. Stakeholders' theory is an adequate baseline theory for this study in lieu of the statement that environmental disclosure is a tool for strengthening good relations with stakeholders (Ong et al., 2020) and that environmental responsibility encourage strong relationship between firms and society (Aggarwal, 2019).

METHODOLOGY

This research aimed to look at the impact of environmental disclosure on financial performance of cement manufacturing companies in Nigeria. The population of the study consists four listed cement companies on the Nigeria Stock Exchange (Dangote cement, BUA cement, Portland cement, and Lafarge cement companies). The study adopted an *Ex-Post Facto* research design because it relied on historic accounting data. Panel data on research variables were generated on annual basis from secondary sources which are made up of individual cement companies' annual reports and financial statements for the period covering 2017 and 2021. The data were analyzed using descriptive and inferential statistical tools of panel regression. Hausman test was conducted in order to choose most appropriate method amongst the three basic panel model. STATA version 14.0 was used for data analysis of the study. The econometrics model specification is presented as:

$ROA = f EDI, LEV$ .... (1)

$ROAit = \alpha i + \beta 1 EDIit + \beta 2 LEVit + \varepsilon it$ .... (2)

Where: ROA (Return on Asset) proxied of financial performance as dependent variable. The independent variable of the study is Environmental Disclosure (ED) and leverage is the control variable. The study measured ED using panel regression. The framework for quantifying ED was adopted from the work of the framework consisting of 10 items. These items were scored using a dichotomous approach.

In line with dichotomous approach, an item scores '1' if reported and Zero '0' if not reported. This is termed as un-weighted approach.

The formula for calculating the un-weighted disclosure index using the environmental disclosure framework is expressed as:

$EDI = di10i=1d$ -- (3)

Where:
EDi is Environmental Disclosure index.
d = 1 if item 'di' is reported or 0 if item 'di' is not reported
d = maximum number of items (i.e 10)
The value of ED is the ratio of the value of computed total disclosures score obtained by each company to the maximum number obtainable points.
α=intercept term or constant factor. ε= Error term (incorporating omitted factors). β1 --- β2 =Regression coefficients to be determined. i= index for individual companies (for the 4 sampled cement companies)
t = time effects.
Where: $\mu it = \rho i + \varepsilon it$.. (4)
If $\mu it = \rho i + \varepsilon it$ not true, then it could be estimated using Pooled OLS. If $\mu it = \rho i + \varepsilon it$ is true, OLS cannot be used.
Thus, becomes=$ROAit$=αi+β1$EDIit$+β2$LEVit$+ρi+εit.. (5)

RESULT AND DISCUSSIONS

Table 1: Summary Statistics Result

	Observation	Mean	Std. Dev.	Min.	Max.
ROA	36	0.171	0.152	0.197	0.477
ED	36	0.456	0.268	0.000	0.981
LEV	36	0.457	0.453	0.005	0.922

Source: Researcher computation from annual reports using STATA 14.0

Table1 presents the summary statistics of the study, from the result, the mean ROA within the period is 0.171 with minimum of 0.197 and maximum of 0.477. The standard deviation of 0.152 reveals a relatively low variation in ROA among the companies and over the period. In addition, the results reveal that the average of environmental disclosure is 0.456 implying that environmental disclosure practices among cement manufacturing companies is relatively low since it is below the average. The minimum and maximum environmental disclosure is found to be 0.268 and 0.000 respectively. The average of leverage is 0.427 with minimum of 0.005 and maximum of 0.922. The standard deviation of 0.457 indicates low leverage among the companies for the period.

Table 2: Regression Results

Variables	Apriori Expectation	ROA
ED	+	0.743***
		(0.0652)
LEV	+	0.0645**
		(0.0521)
Constant	0.543	
		(0.165)
Observations	36	
Firm Effect	Yes	
Hausman P val	0.0045	
R-squared	0.764	
Maximum VIF	3.021	
Number of fid	4	

Note: ***, **, * denotes significant at 1, 5 & 10 percent respectively.
Source: Researcher computation from annual reports using STATA 14.0

Table 2 presents the estimated panel regression results for the study. The study tested for the presence of effect using F-test and the results revealed the existence of effect making the use of estimated panel regression. To select between fixed and random effect, the study conducted Hausman test and the estimated Hausman p-value becomes 0.0045, this suggest that fixed effect model is more appropriate. The maximum Variance Inflation Factor (VIF) is 3.021 which is below the threshold of 10 which shows the absent of multicollinearity among the explanatory variables.

From the results of the panel regression model of the study, the estimated coefficient of environmental disclosure is positive (0.743) and statistically significant at 1 percent. This showed that environmental disclosure has positive impact on financial performance of the sampled cement companies. This suggests that the higher the level of environmental disclosure practice among the cement manufacturing companies, the better the financial performance of the companies. The control variable Leverage (0.0645) variable has positive and statistically significant at 5 percent. The finding of this study confirmed the findings of past studies such as Nurudeen (2020) and contradicted that of Olurankinse and Mamidu (2021).

CONCLUSION AND RECOMMENDATIONS

This study analyzed the impact of environmental disclosure on financial performance of listed cement manufacturing companies in Nigeria. The results of the study which was analyzed using fixed effect regression revealed existence of positive and significant impact of environmental disclosure on financial performance of the listed cement companies. The implication of the results is that more environmental disclosure practice will lead to higher financial performance. Therefore, the study concludes that environmental disclosure improves financial performance of cement manufacturing companies; and recommends that cement manufacturing companies should increase their investments on the environment, and should disclose same in annual report as demonstration of accountability; that management of cement manufacturing firms should increase their responsibility to the environment by observing all environmental regulations and policies; and that they should adopt uniform reporting framework such as the GRI-G4, in view of its global outlook and reputation in order to enhance the credibility of their environmental reports.

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