VOL. 18 NO. 7
ISSN: 2276-0732
SEPTEMBER, 2020

African Scholar Publications & Research International

African Scholar Journal of Mgt. Science and Entrepreneurship (JMSE-7)

Firm Characteristics and Environmental Disclosure Quality of Listed Cement Companies in Nigeria

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Abstract

This study sought to examine the influence of firm characteristics on environmental disclosure quality of listed cement companies in Nigeria. Data were extracted from the annual report and accounts of the listed cement companies for the period of 2013-2017.Firm age, firm size and leverage was used as a proxy for firm characteristics. In order to measure the extent of environmental disclosure quality, the annual reports of the firms were analyzed through content analysis using GRI as index of disclosure and the study analyzed the data using descriptive statistics, correlation and multiple regression technique via STATA 12.0.Findings from the study revealed that firm age, firm size and leverage has significant impact on quality of environmental disclosure and the study recommended among others that listed cement companies in Nigeria should maintain optimum level of debt and have control over the size of the firm as it have impact on the quality of environmental disclosure and also Nigerian Government should made environmental disclosure mandatory rather than voluntary this is because it's becoming important for companies to incorporate governance, social and environmental issues in their business strategies and should be communicated to all stakeholders of the companies.

Keywords: *Firm Age, Firm Size, Firm Leverage and Environmental Disclosure Quality*

Introduction

The advent of corporate sector activities in Nigeria has resulted in the massive environmental pollution of the country. In addition to the above, various independent bodies, including Business in the Community (BITC) and Global Reporting Initiative (GRI) have introduced guidelines in an attempt to establish consistency in the disclosure of environmental information. A call for Companies environmental impact assessment and disclosure has assumed enormous dimensions over the decades, this clarion call aimed at providing a sustainable environment that will be conducive to the human and corporate organizations to operate efficiently (Votsi, Kallimanis, & Pantis, 2017).

Although environmental regulation, pressure group activity, and consumer awareness is weak in developing countries including Nigeria some corporations in these countries are becoming conscious of their international market and are making appreciable effort as regards environmental practices (Ezeagba, Racheal & Chiamaka, 2017).Some companies operations are hazardous to the environment; in return, companies tend to do something to reduce the effects of its operation on the host communities. Companies have used natural and environmental resources, in compensations for the usage, firms should treats and manage the environment very well (Ong, Tho, Goh, Thai and Teh 2016). Suleiman, Abdullah and Fatima (2014) notes that companies must have realized that environment is an assets therefore it should be well managed and environmental reporting is pertinent. Ohodoa, Omokhudu and Oserogho (2016) are of view that companies, especially those whose operations are said to have effect on environment should disclose their financial commitments towards environmental improvement more especially those companies that their operation has to do with pollution and other environmental hazard.

Voluntary Disclosure is whereby Companies disclose environmental information on voluntary terms. They are not obligated by law to disclose as is a practice in Nigeria. They do this from pressures from financial institutions, investors, and the community at large. Culture of the organization may also influence such disclosures as may be the preference of dominant management and CEOs. Organizations do this as a way remaining legitimate in the eyes of the society as there may be benefits to be reaped. In the long run (Eltaib, 2012), Involuntary Disclosure is a type of disclosure that goes against the will of the company. Permission has not been granted by the company against such disclosure. This disclosure is done by the media, civil society groups, and green groups' activists as a result of the detrimental actions of the company toward the society or environment (Uwaloma, 2011).

Firm characteristics refers to the attributes which a particular firm posses that defines its activities. They are the key drivers that shape a company's financial decision and other policies that a company adopts. Therefore, the characteristics of a particular firm will influence its decision to disclosure non financial information including environmental disclosure. Many researchers argued that determining the extent to which firm characteristics affect the choice of disclosure policy by a firm and identifying those characteristics that are influential has an important implication for stakeholders of such a company.

This study differs from previous studies on an important aspect, the measurement of environmental disclosure level. Other research such as Abubakar, 2017; Ohidoa, Omekhodu and Oserogho, 2016; Osazuwa, Ahmad and Adam, 2016 measured the level of disclosure by counting, for example, the number of words, sentences or pages in the annual report. Applying this measurement tool, questions can be raised because environmental disclosure will differ across companies due to variation in writing style; page and type size (Brammer & Pavelin, 2006). The current study applied 4 codes for scoring disclosure of environmental information by companies (Publication information is both quantitative and qualitative form 4, Only qualitative, non quantitative disclosure 3,Quantitative information both in object and value, no qualitative information 2,Quantitative information on the value, no object and no qualitative information 1 and No information disclosure 0).

The remainder of the paper is organized as follows: Section two (2) provides literature on firm characteristics and environmental disclosure. Section three (3) presents methodology of the study. Section four (4) Presents results and discussions and lastly section five (5) discusses conclusions and recommendations.

Literature Review

Firm age and Environmental Disclosure

Older firms are more likely to engage in environmental performance to influence perception about their business and to legitimize their existence. Older firms are more likely to be bigger firms and may be willing to provide information to influence their continuous existence. Older firms may be abreast with current trends in their industry and are more apt at performing on new policies to sustain their business. Therefore this study posits that;

H_{01} Firm age has significant impact on environmental disclosure quality of listed cement companies in Nigeria.

Firm size and Environmental Disclosure

Previous empirical studies showed that the firm size affects the level of disclosure of its environmental accounting information. The larger the size of the business, the more likely publishes environmental information. Large firms are always confident of their prospects, so they are often willing to spend expense to publicize more voluntary information in order to make a difference to rival businesses and increase its value (Hasan and Hosain, 2015). Thus, a hypothesis that indicates a positive relationship has been developed below:

H_{02}Firm size has a significant impact on environmental disclosure of listed cement companies in Nigeria.

Leverage and Environmental Disclosure

Companies with higher leverage are more likely to increase the volume of corporate disclosure to reduce agency costs (Ho and Taylor, 2007). It is argued that as firm debt (leverage) increases, the investors' monitoring demand for information also increases in order to keep themselves informed about operating performance of the company, including environmental performance (Clarkson et al., 2008).Thus, hypothesis which indicates positive relationship has been developed below:

H_{03} Leverage has a significant impact on environmental information disclosure (EID) of listed cement companies in Nigeria.

Empirical Studies

Innocent and Gloria (2018) examine the effect of firm characteristics on corporate environmental performance of quoted industrial goods firms in Nigeria. Specifically, the study examined the effect of firm size, profitability and firm age on waste management cost of the industrial goods firms. The study adopted the ex-post facto research design. Population and sample size of the study is made up of eleven industrial goods firms quoted on the Nigerian stock exchange as at the year, 2017. This study utilized secondary data sourced from annual reports and accounts of the sampled firms for the study period, 2008-2017. Data analysis was done using Pearson correlation coefficient and Multivariate regression analysis. Findings of the study revealed that firm attributes (firm size, profitability and firm age) have a significant and positive effect on environmental performance (measured by waste management cost) at 5% significant level.

Similarly, Abubakar (2017) investigate the influence of firm attributes on environmental disclosure of listed breweries companies in Nigeria. The population of the study consists of five breweries companies listed on the floor of Nigerian stock exchange. Data were collected from annual reports of the selected companies for the period of five years that is from 2012 to 2016. Multiple regression technique was employed to analyse the data. Profitability (PROF), firm size (FRMS), leverage (LEV) and board size (BDS) were used as proxies to measure the firm attributes. While contents analysis was maintained to measure environmental disclosure. The study found board size has negative but significant influence on environmental disclosure, leverage has negative and insignificant influence on environmental disclosure .Where firm size has positive insignificant influence on environmental disclosure, profitability has positive significant influence on environmental disclosure of listed breweries companies in Nigeria.

Khalid, Kouhy and Hassan.(2017) examine how corporate characteristics could influence the amount of Corporate Social and Environmental Disclosure (CSED) in the manufacturing sector in Jordan. Firm size, profitability, audits firm, ownership, type of industry and financial market level are the main factors examined in this study. Drawing from Ernst and Ernst methodology, the study developed a disclosure index to measure the amount of CSED for three years (2010, 2011 and 2012). Using panel data regression the results of the model indicated that the firm size, type of audit firm and financial performance in Amman Stock Exchange (ASE) are significantly associated with the amount of CSED whereby, firm profitability, age, type of industry and ownership are not related to the practices of CSED.

Nguyen, Tran, Nguyen, and Le (2017) assess the factors affecting disclosure levels of environmental accounting information of construction firms in Vietnam. Data were collected from 74 construction firms listed on Vietnam Stock Exchange for the period from 2013 to 2016. Based on quantitative research method, the disclosure levels of accounting Information and factors affecting this level were scrutinized. The results indicate that the disclosure level of environmental accounting information of construction firms tends to increase, especially in 2016. In addition, the results also point out that the level of disclosure is influenced by factors of firm size, profitability, financial leverage, number of years listed and independent audit.

Elshabasy (2017) assess the impact of several corporate characteristics on environmental information disclosure of the listed firms in a developing country. The study selects the 50 most active firms in the Egyptian stock exchange and the analysis is done using the financial statements from the disclosure book for the period 2007-2011. Findings found that there is an insignificant relationship between two factors of firms' characteristics (Firm Size and Firm Financial Leverage) and EID, while Firm's age showed a negative significant relationship with EID and finally Firm's Profitability showed a positive significant relationship with EID.

Egbunike and Tarilaye (2017) examine the association between firm's specific attributes (firm size, earnings, leverage and governance) and voluntary environmental disclosure with evidence from listed manufacturing companies in Nigeria. Data of firm size, earnings, leverage and governance were obtained from the annual reports and accounts of some selected manufacturing companies during 2011-2015. Data collected were analyzed using both descriptive and inferential statistics. First, it was revealed that some of the studied manufacturing companies have high leverage profile while some with low leverage profile. In addition, some companies' environmental items were not disclosed in their annual reports and accounts while some were disclosed and described in monetary terms and that there is a positive relationship between environmental disclosure, firm size, leverage, earnings per share and governance of the studied manufacturing companies in Nigeria.

Osazuwa, Ahmad and Adam (2016) provide a detailed description of the length Nigerian companies disclose environmental information. Using descriptive research design the study utilised an unbalanced panel data structure of 142 sampled companies for a five year period (2009-2013). The study followed a checklist to identify the sentences related to environmental information from the annual reports with the aid of content analysis. The study found that the length of disclosure of environmental information is approximately three sentences per company which is very low, especially in comparison with other developed and developing countries. It was also found that following the events that led to the revision of the code of corporate governance that occurred in 2011, there was a steady increase in the quantity disclosed over time.

Ohidoa, Omekhodu, and Oserogho (2016) investigate the determinants of environmental disclosure in Nigeria. Historical data were obtained from the financial statements and account of firms in the manufacturing and financial sectors listed in the Nigeria Stock Exchange. The statistical instrument employed in the study, is the Binary logistic panel data regression. The study findings revealed that industry type, firm size has positive relationship, while leverage has no significant effect on environmental disclosure.

Majeed, Aziz and Sale (2015) investigate the factors affecting the level of disclosure of information about environmental and social responsibility of listed firms in Pakistan. The study was conducted with a sample of 49 firms with annual reports from 2007 to 2011. The study found that there is a positive and significant impact of the size of the board. The level of board independence, the degree of decentralization and the size of the business have a noticeable impact on the level of disclosure corporate social and environmental responsibility. The results also show the reverse relationship between the representatives by genders and the disclosure level of environmental information.

Umoren, Udo, and George, (2015) From Nigeria provided evidence that the level of environmental information reported by sample companies listed on Nigeria Stock Exchange was 7%. The study used a sample of 40 companies across eight sectors and data from two-year 2013-2014 and used descriptive statistics, correlation, and linear regression. The study desperately calls for integrated reporting in Nigeria. While in South Africa, KPMG (2013) reported that companies that prepare environmental report increased from45% in 2008 to 98% in 2013. Mandatory integrated annual reporting, enhanced governance structure, and stable legal environment could be factors to this upsurge.

Ahmad, and Osazuwa, (2015) in Malaysia set out to investigate the effect of director's culture on the level of environmental disclosures among companies quoted on the main stream of the Bursa. The study uses the ethnic background of the directors to categorize the culture of the board. The dependent variable environmental disclosure in the annual report of the selected companies was measured by an index score based on the content. The result indicate a significant relationship between environmental disclosure and boards dominated by Bumiputra directors, board dominated by foreign directors, firm size and leverage.

Hasan & Hosain (2015) investigate the factors that influence the level of mandatory and voluntary disclosure of environmental and social of firms listed on the Dhaka stock exchange. Factors studied include firm size, age of operations, profitability and business lines. The study used multivariate regression analysis and the data was collected from 54 corporate annual reports for the period from 2010 to 2013 of listed firms. The results showed that the firm size significantly and positively affects the level of information voluntary disclosure. Age factor remarkably influences the level of compulsory disclosure. The study also showed that firm size and profit do not affect mandatory disclosure.

Akbas (2014) investigate the relationship between company characteristics and the extent of the environmental disclosures of Turkish companies. The sample of the study consists of 62 non-financial firms listed on the BIST-100 index at the end of 2011. In order to measure the extent of environmental disclosure, the annual reports of sampled firms for the year of 2011 were analyzed through content analysis. Results of the regression analysis indicate that company size and industry membership are positively related to the extent of environmental disclosure, while profitability is negatively related. However, neither leverage nor age has a statistically significant relationship with the extent of disclosure.

In a study of Arif and Tuhin (2013) in Bangladesh to evaluate the factors affecting the voluntary disclosure related to the environment and society in annual reports of listed banks .The study employed the disclosure index with 48 voluntary non-financial information disclosures. The sample of 20 banks listed on the Dhaka Stock Exchange was investigated to examine the effect three following characteristics such as the number of years the bank operations, the bank size and the level of annual profitability to the extent of disclosure of information related, to the environment and society of the bank. The results show that the number of years of operation and annual profitability of the bank significantly influenced the disclosure level of non-financial information, while the size of the bank did not.

Theoretical Background

This study employs an institutional theory perspective in examining the impact of firm characteristics on environmental disclosures in Nigerian cement companies. Institutional theory views organizations as operating in a social framework of rules, norms, values and routines of what constitutes appropriate behaviour. Scott (1995) argues that in order to survive organizations must conform to current beliefs and norms in the environment.

Methodology

The study used descriptive and explanatory research design. The descriptive is used because the study describes the extent of environmental disclosure of companies and used explanatory design to explain the relationship between firm characteristics and environmental disclosure of Nigerian cement companies. Data were obtained from annual report and account of the companies as well as the fact book of Nigerian Stock Exchange for the period of five years (2013 to 2017). This is because the Global reporting initiative was introduced in 2013 which is the index used by the study. The population of this study comprises of all the cement companies quoted on the Nigerian Stock Exchange (NSE) as at 31st December, 2017 there are three (3) listed cement companies in Nigeria and these companies are; Ashaka Cement PLC, Dangote Cement PLC and The study adopts census sampling that is where all the population are to be used. The annual reports of the cement companies for the period of 2013 to 2017 are analyzed through content analysis in order to measure the extent of the environmental disclosure of the companies.

Variables of the Study and their Measurement

The means by which the various variables adopted in this study are measured or computed are shown in Table 3.3

Table 3.1: Variables Measurement

Variables	Type	Measurement	Score
Environmental Disclosure	Dependent	Publication information is both quantitative and qualitative form	4
		Only qualitative, non quantitative disclosure	3
		Quantitative information both in object and value, no qualitative information	2
		Quantitative information on the value, no object and no qualitative information	
		No information disclosure	1
		As used by Nguyen, *et.al,* 2017, Egbunike and Tarilaye (2017)	0
Firm age	Independent	Number of years of a company from the date of its incorporation as used by Abubakar, 2017	
Firm size	Independent	The natural logarithm of total assets at the end of fiscal year as used by Ohidoa, *et.al,* 2016	

Firm leverage	Independent	Total debt divided by total assets as used by Dibia and Onwuchekwa (2015);Ohidoa, *et.al*, 2016

Source: Generated by the Researchers, 2019

The disclosure index is calculated according to the weighted approach, depending on the quality of the information provided to assess the score for each item, then averaged for each field and calculated environmental disclosure index. According to the Global Reporting Initiative's (2013) Sustainable Development Report Guidelines, the total number of items for disclosure of environmental information is 34 items. Environmental disclosure quality Index for each company is computed according to the following equation:

$$\text{ED Quality} = \sum_{i=1}^{n} \frac{\text{items diclosed}}{34}$$

Model Specification

The study adopts the model used in the study of Ohidoa, Omekhodu, and Oserogho (2016)as shown below:

$ED_{it} = \alpha + \beta_1 FAGE_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \varepsilon i$

Where;

ED = Environmental Disclosure

FAGE = Firm Age

FSIZE = Firm Size

LEV= Leverage

α = Constant Term

β = Coefficient Term

i = No of firms

t = Time Period

e = Error term

Results and Discussions

This section present and discusses the results of the study. The descriptive statistics first, followed by correlation coefficients. The result of the regression analysis between ED and FAGE, FSIZE and LEV has been presented and discussed.

Table 4.1 Descriptive Statistics of the Data

Variables	OBS	MEAN	STD.DEV.	MIN	MAX
ED	28	0.5372189	0.2015263	0.24352628	0.8743322
FAGE	28	2.0836443	0.2934151	0.8376251	2.0383726
FSIZE	28	1.0925638	0.1133652	1.2827312	9.3789403
LEV	28	2.0271562	0.2835221	0.2378261	1.60206

Source: Computed by the Researchers Using Stata 12.0

Table 4.1 show that ED ranged from 24.3% to 87.4% with the mean of 53.7% and a standard deviation of 20.1%. This implies that cement companies in Nigeria disclose environmental information on the average of 53.7% and the information deviates both sides of the mean of 20.1%. Firm age reports the average of and standard deviation of 20.8% and 29.3% respectively. This indicates that the data for firm age deviates from both sides of its mean at the rate of 29.3%.The minimum and the maximum values for firm age are 83.7% and 20.3% respectively. The data for firm size of listed cement companies in Nigeria has a mean of 10.9% and the minimum and maximum value of 12.8% and 93.7% with a standard deviation of 11.3%.

In addition, leverage reports a mean of 20.2% and the standard deviation of 28.3% indicating that the data for listed cement companies deviates from both sides of the mean by 28.3%. Furthermore, it can be seen form table 4. 1 that the range between the independent and dependent variables are wide, indicating the extent of individual firm differences.

Table 4.2 Correlation between FAGE, FIZE, LEV and ED

Variables	ED	FAGE	FSIZE	LEV
ED	1.0000			
FAGE	0.3211	1.0000		
FSIZE	-0.3120	-0.2316	1.0000	
LEV	0.3217	0.2021	0.2764	1.0000

Source: Source: Computed by the Researcher Using Stata 12.0

Table 4.2 reveals that there is a positive correlation between ED and FAGE and LEV of listed cement companies in Nigeria at the coefficients of 0.3211 and

0.3217 respectively. This indicates that FAGE and LEV has a positive relationship with ED. As firms' increases in age environmental disclosure increases and when debt increases, environmental disclosure also increases. Only FSIZE has an inverse relationship with ED with coefficients of -0.3120. This shows that as the size of firm increase, Non financial information relating to environment decreases.

Table 4.3: Result of GLS Random Effect Regression

Variable	Coefficient	Z	P-value
CONS	0.4923819	1.78	0.005
FAGE	0.1230273	2.63	0.000
FSIZE	0.8362739	1.21	0.000
LEV	0.2810012	1.39	0.018
R Square: Within	0.2901		
R Square: Between	0.3284		
R Square: Overall	0.2162		
Wald Chi2	19.11		0.0000

Table 4.3 shows that FAGE, LEV have a positive impact of 1.230273 and 0.2810012 respectively on ED and FSIZE have a negative impact on ED of -0.8362739. Thus the model of the study is represented as ED_{it}=0.4923819+0.1230273+$FAGE_{it}$+0.8362739 FSIZE $_{it}$ + 0.2810012 LEV $_{it}$ + εἰ.. FAGE, FSIZE and LEV are all significant at 5% level of significance as explained by the p-values of 0.000, 0.000 and 0.018 respectively. The findings implies that as listed cement companies advances in age and size and increments in debt(because when debt increases the monitoring demand of stakeholders will also increase) which will all lead to increases in the quality of environmental disclosure.

The results also shows that the explanatory variables explain by 21.62% of variations in the dependent variable (ED) as evidenced by R^2 overall, while the remaining 78.38 is explained by other factors not included in the model of the study. The wild Chi^2 of 19.11 suggests that the cumulative effect of the independent variables of the study is significance as shown by the p-value of 0.0000.

Conclusion and Recommendations

This study examines the impact of firm characteristics (firm age, firm size and leverage) on environmental disclosure quality of listed cement companies in Nigeria. Using Global reporting initiative as the index, the GLS result reveals that firm age, firm size and leverage have significant impact on the quality of environmental disclosure during the study period. Based on the findings the study recommended that listed cement companies in Nigeria should maintain optimum level of debt and have control over the size of the firm as it have impact on the quality of environmental disclosure and also Nigerian Government should made environmental disclosure mandatory rather than voluntary this is because it's becoming important for companies to incorporate governance, social and environmental issues in their business strategies and should be communicated to all stakeholders of the companies.

Finally, the results of the study should be interpreted in the light of certain limitations. First, the study is limited to the listed cement companies in Nigeria and therefore does not provide a generalized view for other sectors in Nigeria. Future research can be extended to include other sectors of the economy. Second, the study relied heavily on annual reports, thereby excluding other sources of information disclosing environmental issues such as sustainability reports , websites and media Lastly, the study considered only three firm characteristics ignoring others like firm growth, management efficiency etc. these provides a basis for future research.

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