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# Board Attributes and Sustainability Disclosure of Quoted Companies in the Building Material Sub-Sector of Nigeria

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## ABSTRACT

The study examined the effect which board attributes, namely board size, board independence and board diligence (meeting) have on sustainability disclosure of industrial goods firms in Nigeria. The study is based on a sample of nine listed building material companies under industrial goods sector in Nigeria Exchange Group Plc from 2012-2019. Collected data were analyzed with pooled ordinary least square regression including diagnostic test to confirm the assumptions of the regression. The empirical result indicates that board size has positive and significant effect on sustainability disclosures. Board independence and board diligence have positive but insignificant influence on sustainability disclosures on listed building g material firms in Nigeria. Findings of the study have important policy implications that corporate board attributes can reduce information asymmetry between firm management and investors through sustainability disclosures thereby showing increase concern for stakeholders. The study recommends that regulatory bodies should ensure that all listed firms should comply with the requirements of having sufficient members on the board as specified on the Nigerian Code of Corporate Governance (2018) and Companies and Allied Matters Act (2020).

***KEYWORDS:*** *Sustainability Disclosure, Stakeholder's theory, Board size, Board independence, Board Diligence*

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## 1. INTRODUCTION

The current globalization and industrialization has caused industries to increase production and consumption activities. These activities degrade the environment and diminish earth's resources. There is now global concern for the long-term negative impact which trickles down on economic performance of firms and country as a whole, causing serious implications on environmental sustainability. Sustainability means an organization's activities, that demonstrate social and environmental concerns in business operations and in interactions with stakeholders, which is aimed at, raising the standard of living of people while reducing the negative environmental consequences of economic activities (Correa & Moneva 2011).

Threat of sustainability has pushed governments around the world to work towards greater environmental protection, by formulating environmental policies, enforcing standards, guidelines, legislation and establishment of national Agencies to implement them. Most organizations and individuals have come to realize the significance of environmental information disclosure. Stakeholders now mount pressures on companies to report non-financial information on their operations, and companies have intensified efforts to effectively counterbalance potentially conflicting stakeholders' demands, which gave rise to a growing attention on sustainability disclosure. Sustainability disclosure is therefore a response to pressure exerted upon firms to conduct their activities in a way acceptable to the society, (Aguilera, 2005).

Li, Toppinen, Puumalainen, and Hujala (2011) argued that firms disclosing on environmental and social issues shows that they are committed to transparency and also ready to address social and environmental risks. Othman and Ameer (2009) and Gray, Owen and Maunders (1987) see environmental disclosure as a means of communicating social and environmental effects of firms economic actions to the stakeholders. It can also be described as disclosure of information regarding companies' interaction with the environment and the immediate community. In accounting, the most effective way through which companies' communicate their environmental and social responsibility to the community is through their financial statement (Akanfe, Michael & Bose 2017). Firms management are expected to include such information in their annual report to meet information needs of their various stakeholders. Some scholars argue that companies can "do well by doing good" because meeting the needs of non-shareholding stakeholders creates shareholders value (Parmar, Freeman and Harrison, 2010, Porter and Kramer, 2011). They also assume that by not meeting the needs of non-shareholding stakeholders, companies can destroy shareholder value because of consumer boycotts. Thus for companies to remain successful in business, they must respond to changes in the expectations of its customers otherwise, they may suffer a damage to their reputation and the possible loss of sales and profit (ICAN study text, 2014).

Since sustainability disclosure forms a strategic part of stakeholder engagement process, it has become essential in order to strengthen the firm's competitive position and ensure their future viability. The board of directors, as major internal governance mechanism, actively direct the development and change of companies' strategies. Invariably, corporate leadership, particularly the board of directors, is crucial in promulgating sustainability reporting given their central role in influencing the company's disclosure. It is argued that the corporate board, being at the apex of the internal control system of firms, with its mix of expertise, independence, and legal power, should be a potentially powerful governance mechanism. For that reason OECD Principles of Corporate Governance (2004), suggests that corporate governance framework should provide guide for effective monitoring by companies board. According to agency theory, the characteristics of the board can influence financial information quality and level disclosed by firms, as they are apex control mechanism that is accountable for monitoring the actions taken by the top executive of the firm (Fama and Jensen, 1983).

Increased awareness of companies board which is apex decision making body as an important part of a company's corporate governance structure and their major role on a company's reporting practices has led to increase in number of firms across the globe providing information on sustainability issues in their annual report (Elaigwu, Ayoib & Salau2020). In affirmation, several studies on the impact of corporate governance attributes on sustainability both in the context of developing and developed countries, recorded positive impart. For instance, a study by Grace & Ndubuisi, (2018) on the impact of corporate board characteristics on the extent of environmental disclosure quantity of listed firms in South Africa, and Nigeria revealed significant positive association between board characteristics and environmental disclosure . Similarly, Alhazmi, (2017) document a significant relationship between board size and board meeting frequency on social disclosures. Samaha, Dahawy, Hussainey, and Stapleton (2012) and Rouf (2011), found out that board size, board composition, and the audit committee have a significant positive effect on voluntary disclosure. However, findings of these studies cannot be generalized to the consumer sector where no such research has been carried out.

## 2. Statement of Problem

For many decades, companies have ignored the impact of their activities such as high level carbon emissions and depletion of non-renewable resources, on the natural and social environment in which they operated, thereby hampering environmental sustainability. Most governments have come to realize the significance of environmental sustainability, which led to the development and enforcement of standards, guidelines, legislation and even treaties but compliance in Nigeria is still questionable and reporting of the environmental practices is still voluntary. Ofoegbu, Odoemelam, and Okafor (2018) remarked that firms in Nigeria are voluntarily incorporating sustainability disclosures in the traditional reporting framework. but in other countries like South Africa, sustainability disclosure is being regulated as it is now compulsory for firms to adopt integrated reporting framework. The voluntary nature of environmental practice reporting and possible effect of the sustainability costs on the earnings are allegedly factors to non compliance. Leading to negative attitudes amongst stakeholders towards the business and uncondusive business environment, with the resultant poor corporate image and adverse financial performance. So, having a better insight into the potential benefit of sustainability and its disclosure, enable companies not only to improve the efficiency of its activities but also its financial performance. In other words, failure to manage these sustainability issues can substantially damage the image of the company and thus affect its performance.

Research on sustainability disclosures have been greeted with different measurements and different outcomes. For instance, Elaigwu, Ayoiba and Salau (2020) Donnelly and Mulcahy (2008 found that there is a positive association between board governance mechanisms and voluntary sustainability reporting. Their study reported clear evidence that voluntary sustainability disclosure increases with various board attributes. Amran and Siti-Nabiha (2017) and Uwalomwa et al., 2018 reported level of sustainability disclosures had significant positive influence on firm's performance. Contrary to this, El-Bassiouny and El-Bassiouny (2019), found out that organizational factor has no significant influence on the level of corporate social responsibility reporting in the USA and Germany. The results thus indicate that effect of organizational-level factors on CSR depend so much on the institutional context where companies operate. Similarly, Aliyu (2019) and Anazonwu, Egbunike, and Gunardi (2018) found no link between board size, board risk management committee composition board member nationality and corporate sustainability reporting in Nigeria.

## 3. Objectives of the Study

The main objective of this study is to examine the effect of Board attributes on Sustainability Disclosure of listed building material firms in Nigeria. Specific objectives include to:

Assess the effect of board size on sustainability disclosures of firms in Nigeria.

Investigate the extent to which board independence affects sustainability disclosures of firms in Nigeria.

Examine the effect of board diligence on sustainability disclosures of firms in Nigeria

### Research Questions

How does board size influence sustainability disclosures of firms in Nigeria?

To what extent does board independence influence sustainability disclosures of firms in Nigeria?

What is the effect of board diligence on sustainability disclosures of firms in Nigeria?

### Research Hypotheses

The following hypotheses in their null form were formulated for the study.

Board size has no significant effect on sustainability disclosures of firms in Nigeria.

Board independence has no significant effect on sustainability disclosures of firms in Nigeria.

Board diligence has no significant effect on sustainability disclosure of firms in Nigeria.

## LITERATURE REVIEW

### Theoretical framework

This study will be anchored on stakeholder's theory Stakeholders refer to those individuals, groups, or organizations that are likely to influence, or be influenced by the operations and decisions of firm. Stakeholder theory is also considered as an explainable theory for corporate environmental accounting (Deegan & lomquist, 2006; Depoers, Jeanjean, & Jérôme, 2016; Liao, Luo, and Tang, Q. 2015). It describes the relationship existing between the company's behaviours and its impact on its stakeholders. The stakeholder theory perspective takes cognizance of the firm as it affect the customers, suppliers, employees, and other segments of the society. As a result of this relationship, the company requires support from the stakeholders to survive.

### Board Size

Board size refers to the number of firms serving in the board of directors (Jensen & Meckling, 1976). Cheng, (2008) argued that boards with 7 or 8 members are likely to be effective. Larger board size results in less effective coordination, communication and decision making. Contrarily, Albitar, (2015) observed that larger board size are more efficient for firm performance since they have wide range of collective experience and expertise that may assist in market better decision. Several studies highlight that large boards allow companies to connect better with their environment (Hillman, Withers, & Collins, 2009) and better disclosure of compensation practices Laksmana (2008).

### Board Independence

Independent directors have been viewed as referees who ensure that the board, as the ultimate internal monitor of managerial decision making, protects the interests of shareholders (Fama, 1980). Prior studies highlight the effectiveness of independent directors relative to corporate insiders in reducing agency problems as they perform their monitoring roles more effectively (Berle & Means, 1932; Fama & Jensen, 1983; Jensen 1993). Independent are like to encourage firms to disclose more information to outside investors. Williamson (1984) suggests that board monitoring effectiveness is related to its composition and may be indicated by the level of voluntary disclosure. Also, the quality of personalities who serve on the board is a pointer for effective monitoring. Board with independent directors are more efficient and have what it takes to develop their reputation as (Fama & Jensen, 1983). The oversight functions performed by such members adhere more to the related approved standards, laws and regulations.

Therefore, it is to be expected that an independent board would more thoroughly question management and encourage the disclosure of information in compliance to sustainability laws and guidelines.

**Board diligence (Board meeting)**

According to Aliyu (2019) Board diligence refers to the number of meetings had by the board members during the reporting period. Board meetings serves as a platform to share knowledge among experts. It is one of the initiatives by the board to perform its oversight function on the management (agent); this is in line with agency theory in which the board members act as the principal. It has been observed that handling board issues through frequent meetings of the board influence the ability of the board to scrutinize contents of firms reports to reduce agency problems and improve quality of the disclosures (Xie, Davidson & Dadalt 2003; Knechel, Salterio & Ballou, 2007).

**Sustainability Disclosure**

World Business Council for Sustainable Development (2002) defined corporate sustainability as -the firms commitment and contribution towards sustainable economic development, employees, their families, the local community and society at large to improve quality of life.

Global Reporting Initiative (2011) defines Sustainability Reporting as being accountable to companies stakeholders for organizational performance towards sustainable development. In today's age, sustainability has been the most critical issue faced by an organization; firms should take accountability for and disclose impacts of their operations on the overall society and environment in which they exist. Therefore, the concept of Sustainability Reporting has been assuming great importance. The financial analysts, investors and other stakeholders are increasingly demanding information on non-financial, i.e. Environmental, Social and Governance (ESG) performance of companies, over and above their financial information, so as to take more rational and informed investment decisions. According to Hubbard (2008), the number of investors who seek to invest in Socially Responsible Investments (SRI) has been growing rapidly; leading to the creation of various sustainability indices, such as Dow Jones Sustainability Index (JSI), Johannesburg Stock Exchange (JSE) SRI Index, Domini Social Index (DSI), etc.

Sustainability reporting is also known as environmental, social, and governance (ESG) reporting. It is widely believed that sustainability reporting lays a foundation for preserving and enhancing value of firm through various strategic benefits such as improved stakeholder relationship, better customer access, customer loyalty, new products, new markets, good brand image, improved employee morale, retention and loyalty, risk avoidance, easier access to capital, strengthened license to operate, cost savings, productivity, etc. (Lassalo, Dredo-Brat &Ribeiro-Navarret, 2021)..

**Empirical Analysis**

Gouiaa and Zéghal (2014), analysed the effect of board characteristics and governance indices on quality of accounting information. The study showed that board characteristics have significant effect on the levels of earnings management and accounting conservatism. The result also reveal that individual measures of the characteristics of boards of directors allow for a better detection and explanation of the quality of accounting information than the multifactor commercial and academic governance indices.

Usman (2019), studied board characteristic and corporate environmental reporting in Nigeria. The result indicates a positive significant relationship between board independence and CER. Similarly, a positive significant relationship between BM and CER is revealed in the study. However, there is no significant relationship between other hypothesis variables and CER.

Mohammad, NorRaihan and Norsia (2016), examine board characteristics and corporate social responsibility disclosure (CSRD) in the Jordanian banks. The result indicates a relatively low level of disclosure in Jordanian banks. However, low level of disclosure is associated to higher proportion of independent directors and institutional directors.

In a study by Haladu and Salim (2016), board characteristics and sustainability reporting were examined using environmental agencies as a moderating variable. The result showed an encouraging disclosure index of about 55%. In particular, all the relationships measured had significant relationships and applied the latest version of global reporting initiative (G4). Environmental agencies were also tested for their role in sustainability reporting.

Hu and Loh (2018), examine the board governance and sustainability disclosure of Singapore-Listed Companies. The findings show the presence of significant associations between board governance and sustainability disclosure. In terms of board capacity, companies with larger board sizes and a higher number of board meetings are more likely to practice sustainability reporting, and their reporting qualities are higher. For board independence, the percentage of independent directors positively impacts the firm's reporting probability and quality on sustainability in Singapore. For board incentives, the practice of long-term incentives for executive directors can significantly improve both the probability and quality of sustainability reporting.

Ofoegbu, Odoemelam, and Okafor (2018), analyzed effect of board characteristics and environmental disclosure quantity with data from South Africa and Nigeria. Findings indicated that there is positive influence between board independence and environmental disclosure in Nigeria. In South Africa, environmentally sensitive industries influence environmental disclosure significantly. while most of the environmentally polluting industries in Nigeria show insignificant association with environmental disclosure.

Alhassan and Noorhayati (2019), examine the Sustainability Disclosure on Environmental Reporting: A Review of Literature in Developing Countries. The focus of this review is on identifying the determinants of the environmental disclosures and the current gap in those studies. These determinants can be divided into four groups which are the national contextual factors, the ownership structure, companies' characteristics, and governance attributes as the determinants of the environmental disclosure practice. It was found that there is a lot of variation relating to environmental disclosure level in developing countries.

## METHODOLOGY

Ex-post facto research design was employed to investigate the effect of board attribute on sustainability disclosure of firms in building materials companies in Nigeria.

The justification for the ex post facto research design is because the research is conducted by analyzing past events of already existing conditions (sustainability disclosures and board attributes). With ex-post facto research design, attempts were made to explain a consequence based on antecedent conditions, determine the effect of a variable on another and test the claim using statistical hypotheses testing technique Hence the researcher have no control and cannot manipulate these variables.

The study formulated multiple regression model from prior empirical work and perceived theoretical relationship among the variables to help in testing the hypotheses of the study. The multiple regression model used was adopted from the work of Emeka-Nwokeji and Agubata (2019)

$$ROA_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 BOND_{it} + \beta_3 BOGD_{it} + \beta_4 BDHOLD_{it} + \beta_5 DCOST_{it} + \beta_6 FSZE_{it} + \beta_7 FAGE_{it} + \beta_8 TLBTA_{it} + \varepsilon_{it}$$

The rationale for adopting the model was because the authors studied board attributes of listed firms in Nigeria. The model was adopted in line with the variables used in the specific objectives and hypotheses of the study as follows:

**Functional Model of the Current Study**
SDI= F (BODSZ, BOIND, BOGDR)

The Econometric form of the model is indicated below:
$SDI_{it} = \alpha_O + B_1 BODSZ_{it} + B_2 BOIND_{it} + B_3 BOGDR_{it} + \varepsilon_{it}$

Where:

SDI = Sustainability Disclosure Index was computed as the ratio of the actual score obtained by a firm divided by the maximum score of 3 for social, environmental disclosures and sustainability disclosures.

$\beta_0$ = Intercept estimates

$\beta_{1-3}$ = Coefficient of the independent variables

e = error term

This study investigated the effect of board attributes on sustainability disclosure of listed building material firms in Nigeria. The study utilized pooled data for eight-year period from 2012 to 2019. Total sample of Nine (9) listed building material firms under the industrial goods sector of Nigerian Stock Exchange were used. Specific objectives and hypotheses were formulated to examine the extent to which board size, board independence, board gender diversity, affected sustainability disclosures of sampled firms. Descriptive statistics and Pearson correlation matrix were used to analyse the data while ordinary least square pooled regression was used in testing the hypotheses. The following are the specific findings from the analyses:

Board Size has positive and significant effect on sustainability disclosures of listed building material firms in Nigeria.

Board independence has positive but insignificant influence on sustainability disclosures of listed building material firms in Nigeria.

Board diligence has positive but insignificant effect on sustainability disclosure of listed building material firms in Nigeria.

**Variables and Their Measurement**

| Variables | Code | Measurement |
|---|---|---|
| DEPENDENT VARIABLE | | |
| Sustainability Disclosure | SDI | Sustainability Disclosure Index. Computed as the actual score obtained by a firm on the three component of Corporate social responsibility, Environmental disclosure and Sustainability disclosure divided by the maximum score of three. |
| INDEPENDENT VARIABLES<br>Board Size BODSZ Number of Directors (Executive and Non Executive) on the Board | | |
| Board Independence | BODIND | Proportion of non-executive directors to total directors |
| Board Gender Diversity | BOGDR | Proportion of Female to Numbers of Directors |

**Descriptive Statistics**

Descriptive statistics result shows the mean (average), maximum, minimum and standard deviation, for each of the board attributes variables and sustainability disclosure indices. It provide summary of dependent and independent variables employed in the study. The mean and median measures the central tendency. Measure of dispersion is indicated in the standard deviation (how far the observations are from the sample average). Table 1 on the appendix provides the result of the descriptive statistics of the sampled firms used in the study. The results provide an insight into the nature of the sampled building material firms that were employed in this study.

Shapiro-Walk test on table 2 of the appendix checks the normal assumption by constructing W statistic.

W is positive and less than or equal to one. Small values of W lead to the rejection of normality, while being close to 1 indicate normality of the data (Henderson, 2006; Peng, 2004). Thus W test of 0.94996, 0.91464, 0.93436 and 0.93587 respectively for all the dependent and independent variable employed in the study are close to 1 indicating normality of the data. With this result, the study concludes that the data used are normally distributed, \that there is no outlier in the data and thus analyses and conclusion there from are reliable for drawing conclusion.

Table 3 on the appendix presents the results of the correlation matrix analysis. The results show no correlation problem among the dependent and independent variables since none of the variables had correlations greater than 0.70. Thus the variables are not correlated as the relationships between them are moderate. Considering the nature of the relationship there is no room to suspect the presence of multicolinearity between the variables used in the model. Table 3 on the appendix among other things showed that sustainability disclosure index (sdi) is moderately and positively correlated with board size - bodsz (0.5879), the ratio of independent directors - bodin (0.3696) and board diligence bdgnce (0.2754 ).

Again the independent variable of bodsz showed moderate association coefficient with bodin (0.4182) and bdgnce (0.3897).

**Table 4.4: Sustainability disclosure Index and board attributes for the Model**

| Independent Variables | Coef. | t-Stat | P>/t/ |
|---|---|---|---|
| bodsz | 0.053 | 3.38 | 0.001*** |
| bodin | 0.003 | 1.20 | 0.236 |
| bdgnce | 0.014 | 0.46 | 0.646 |
| Intercept | -0.421 | -1.66 | 0.10* |
| F – Stat | 9.37 | | 0.000*** |
| R-squared | 0.427 | | |
| Adjusted R-squared | 0.381 | | |
| Number of Observation | 69 | | |

Source: Authors Computation Extracted from STATA Output

**Where *, **, ***, implies statistical significance at 10%, 05% and 1% levels respectively**

Table 4.4 above show a summarized result obtained from the dependent variable of sustainability disclosure index and board attributes of building material firms in Nigeria. The regression analysis revealed 69 observations were used. This is derived from the sample size of nine firms by the period of eight years (2018 - 2019). The empirical results of the ordinary least-squares (ols) pooled regression analysis showed that the adjusted R-squared value of the research model was approximately 0.38. This shows that about 38% of the systematic variations in sustainability disclosures variables of sampled companies over the period of interest were jointly explained by the independent variables. The F-test was statistically significant ($p < 0.01$); therefore, the research model employed describes the relationship between board attributes and the disclosure of sustainability reporting. The analysis shows that sdi is being influenced positively by three of the explanatory variables. This influence is represented by the equation: $sdi = -0.421 + 0.053bodsz + 0.003bodin + 0.014bdgnce$.

**Conclusion and Recommendations**

Stakeholders' theory is validated through the findings of this study. The empirical analysis suggests that firms with sufficient board, with more independent directors, that meet regularly to discuss strategic issues as well as have adequate audit committee size are more likely to provide disclose on sustainability issues. According to findings of the study, corporate board attributes can reduce information asymmetry through sustainability disclosures, therefore paying greater attention to stakeholders' interest/concern. Thus diligent board with sufficient size, balance of diversity and independence is able to monitor and control opportunistic behaviour of management; ensure that the interests of the board and management are aligned with those of the shareholders and other stakeholders by reducing information asymmetry through sustainability disclosures. Corporate board promotes disclosure of essential corporate values and practices about business environment that will not only rebuild public trust and confidence in published reports but also meet information needs of stakeholders.

Considering that Boards of directors size play a key role in ensuring that firms act in sustainable manner, the study recommends that regulatory bodies should ensure that all firms comply with the requirement of having sufficient members on the board.

Firms should judge the appropriateness of their board configuration in terms of independence based on institutional context and, more precisely, based on the requirements of Nigeria's Code (2018) and Companies and Allied Matters Act (CAMA) (2020).

Frequent board meetings should be sustained as it provides platforms for directors to discuss important issues in the company.

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**Appendix: Data Analysis**

**Table 1 Descriptive Statistics of all the Variables**

| stats | sdi | bodsz | bodin | bdgnce |
|---|---|---|---|---|
| mean | .3623187 | 9.434783 | 68.71304 | 5 |
| min | 0 | 6 | 25 | 3 |
| max | 1 | 19 | 99.9 | 10 |
| sd | .3648759 | 3.094009 | 18.44179 | 1.317306 |
| N | 69 | 69 | 69 | 69 |

**Table 2 Normality Test**

swilk sdi bodsz bodin bdgnce
Shapiro-Wilk W test for normal data

| Variable | Obs | W | V | z | Prob>z |
|---|---|---|---|---|---|
| sdi | 69 | 0.94996 | 3.044 | 2.419 | 0.00778 |
| bodsz | 69 | 0.91464 | 5.193 | 3.579 | 0.00017 |
| bodin | 69 | 0.93436 | 3.993 | 3.009 | 0.00131 |
| bdgnce | 69 | 0.93587 | 3.901 | 2.958 | 0.00155 |

**Source: Authors Computation Extracted from STATA output**

**Table 3 Correlation Analysis**

. Correlate sdi bodsz bodin bdgnce (obs=69)

| | sdi | bodsz | bodin | bdgnce |
|---|---|---|---|---|
| sdi | 1.0000 | | | |
| bodsz | 0.5879 | 1.0000 | | |
| bodin | 0.3696 | 0.4182 | 1.0000 | |
| bdgnce | 0.2754 | 0.3897 | -0.1014 | 1.0000 |

**Source: Authors Computation Extracted from STATA output**