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Board Attributes and Sustainability Disclosure of Listed Manufacturing Firms in Nigeria

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ABSTRACT

This study examined the board attributes on sustainability disclosure of listed Nigerian manufacturing firms. This study used an ex-post facto research design with a population of 34 consumer goods and industrial goods firms with a sample size of 18 firms selected using purposive sampling. This study utilized the annual reports of these firms from 2013 to 2023 to gather necessary data, employ multiple regression techniques, and analyze the data through STATA software 13. The result revealed that board size has a negative and significant effect on sustainability disclosure. Both the board meetings and board independence have a positive and significant effect on sustainability disclosure. This concludes that board size negatively and significantly influences sustainability disclosure. On the other hand, board meetings and independence have a positive relationship with sustainability disclosure. The study recommends that firms should ensure that they work with an ideal number of board of directors, as this will improve sustainable decision-making; every board meeting and every properly structured board meeting should incorporate sustainability to enhance the aspect of disclosure; and that firms should enhance board independence for the effectiveness of oversight and sustainability reporting through a higher proportion of independent directors.

Keywords: Board Independence, Board meeting, Board size, Sustainability disclosure

INTRODUCTION

Stakeholders, like investors, regulators, and the general public, have come to understand the significance of sustainability disclosure in recent years. The environmental, economic and social problems that the world is currently confronting, like resource depletion, social inequality, and climate change, are partially to blame for this increased awareness. Sustainability disclosure refers to firms providing information on environmental, social, and governance (ESG) practices and performance. This disclosure is crucial for enhancing transparency, accountability, and trust between firms and their stakeholders (Jizi et al., 2021).

Listed Nigerian Manufacturing Firms (NMFs) plays a significant role in the economy, contributing to GDP, employment, and export earnings. Given the sector's environmental and social impact, NMFs need to adopt sustainable practices and transparently disclose their sustainability performance. This study focuses on the sustainability disclosure practices of listed NMFs from 2013 to 2023.

Sustainability disclosure serves as the dependent variable in this study. It encompasses the extent and quality of information that firms disclose regarding their environmental, social, and governance (ESG) practices. Effective sustainability disclosure can enhance a company's reputation, attract socially responsible investors, and lead to better risk management and long-term performance (Clarkson et al., 2021). In Nigeria, regulatory frameworks and stakeholder pressures are increasingly pushing firms towards more comprehensive and transparent sustainability reporting (Uwuigbe et al., 2021).

Board attributes of the qualities and makeup of a company's board of directors, which have a big impact on the governance and decision-making processes of the organization. Strong boards are essential for managing personnel, guaranteeing responsibility, and developing business plans that support sustainability and long-term value generation (Egbunike et al., 2022). The size, independence, and frequency of meetings of the board are important attributes. According to Ogbechie and Koufopoulos (2020), these attributes may affect the board's capacity to perform its duties and have an impact on the company's sustainability disclosures and practices.

Board size is the total number of directors on the board of a business. It has a major role in deciding how productive and successful the board is. Larger boards may gain from a wider diversity of perspectives and experience, which can improve the quality of decision-making. Large boards, however, could have problems with communication and coordination, which could result in inefficiencies. Smaller boards, on the other hand, could be more cohesive and nimble but could not have the variety required for thorough governance (Kwarteng et al., 2023). The relationship between board size and sustainability disclosure has been the subject of conflicting research; some studies have shown that there is an ideal size for the board, beyond which the board may become less successful (Guest, 2009).

Board independence, or the participation of non-executive directors free from any affiliations or interests that could impair their ability to conduct impartial monitoring, is another essential quality. By providing objectivity and defending the interests of shareholders, particularly minority shareholders, independent directors are essential to improving the functioning of the board (Sunday et al., 2023). According to empirical data, board independence enhances company performance and sustainability initiatives (Adewale, 2020).

The activity level of the board, as well as its efficiency, can be estimated by how often and of what quality the board meetings are held. Most of the governance issues are debated by directors during board meetings, and issuing appears at the board of directors where sustainability disclosures or strategy development is analyzed. It remains unclear whether such sessions were conducted regularly, although their frequency may be evidence of the board's efforts to oversee business activities and ensure accountability. Yet, the number of meetings counts is not enough to determine effectiveness; the quality of discussion and the ability of the board to make a deliberative decision are just as important (Ntim & Osei, 2011). It is important for a NMFs to effectively address the dynamic problems associated with the sector as well as ensure healthy, effective corporate governance by conducting their board meetings frequently.

This study covers the gaps in the existing literature with an extensive understanding of contextual factors that determine sustainability reporting contributing to the understanding of the fundamental importance of board attributes effectiveness for proper implementation of sustainability in business.

The disclosure of sustainability including environmental, social, and governance (ESG) is an enormous pressure for most manufacturing firms in Nigeria. These firms (Better Glass Plc, Meyer Plc, Vita Foam Plc, PZ Cussons Plc, Honeywell Flour Mills Plc, and Champion Breweries) failed to meet the global call for transparency and as such make weak or no disclosure practices which goes a long way in making it difficult for the stakeholders to be in a position to judge the firms' commitment to sustainable practices (Uwuigbe et al., 2021). The board of directors' size is a critical component of board attributes as it determines the capacity and style of a board. Larger boards may help in improving sustainability disclosure through various opinion. However, smaller boards are likely to contain little or no diversification, thus they will produce limited coverage reporting. The findings of Akpan and Amran (2019) have shown that firms such as Cadbury Nigeria Plc, Nigeria Breweries, and Nestlé Nigeria struggle to establish the right board size.

In addition, the involvement of independent directors is very crucial in the process of sustainability reporting to enhance the board size. Still, a majority of the NMFs are not able to attain a reasonable level of board independence hence a weak oversight and disclosure. Firms such as Flour Mills of Nigeria, Champion Breweries, PZ Cussions Plc and Cadbury Nigeria experience these governance issues (Adewale, 2020). Additionally, the number of board meetings or the quality of the meetings cannot be left out. Sustainability is an area that requires frequent, high-quality meetings as the basis for addressing its problems. However, it has been observed that Nigerian firms, including Nigerian Breweries and Guinness Nigeria, sometimes find it difficult to strike this balance which affects their sustainability reporting (Olaniyi & Sulaiman, 2018).

Evidence indicates that most of the previous studies focused on the international context, disregarding NMFs, and not covering the period to 2023 (Khoirunnisa & Trireksani, 2020). Anyigbah et al. (2023) and Ma & Chen (2024) found that the combination of board size, board independence, and board meetings is largely focused on the non-Nigerian environment, which limits the generalization of these studies.

Based on the above practical problems and gaps, this study will response to the following questions:

i What is the effect of board size on the sustainability disclosure of listed manufacturing firms in Nigeria?
ii In what way do board meetings affect the sustainability disclosure of listed manufacturing firms in Nigeria?
iii How does board independence influence the sustainability disclosure of listed manufacturing firms in Nigeria?

The main objective of the study is to examine the board attributes on Sustainability disclosure of listed NMFs. The specific objectives is to:

i. examine the effect of board size on listed manufacturing firms in Nigeria's sustainability disclosure.
ii. assess how the board meetings influence the sustainability disclosure of listed manufacturing firms in Nigeria.
iii. investigate the effect of board independence on sustainability disclosure of listed manufacturing firms in Nigeria.

Based on the given objectives, here are the null hypotheses:

$H0_1$: Board size has no significant effect on the sustainability disclosure of listed manufacturing firms in Nigeria.
$H0_2$: Board meetings have no significant influence on the sustainability disclosure of listed manufacturing firms in Nigeria.
$H0_3$: Board independence has no significant effect on the sustainability disclosure of listed manufacturing firms in Nigeria.

This study provides useful knowledge for scholars, practitioners, and policymakers. For scholars, it strengthens knowledge about the effect of board attributes, especially board size, independence, and meetings on sustainability practices and adds to the corporate governance literature and future research in emerging markets. From the analysis, practitioners are made to understand how various aspects of the board improve sustainability disclosure and transparency. As such, for the policymakers, this study calls on them to put in place measures that would lead towards the achievement of the characteristics of the board including the size of the board, independence as well as the frequency of the board meetings to enhance sustainability disclosure and in turn support Nigeria's agenda of inclusive growth and sustainable development.

This research focuses on the influence of board attributes of listed NMFs on sustainability reporting from 2013 to 2023. Sustainability disclosure is the dependent variable in this study while board size, independence, and meeting frequency are independent variables, focusing on consumer goods firms and industrial goods as the domain, utilizing data from their annual report from 2013 to 2023. This study covers five parts including an introduction, literature review, methodology, results and discussion, conclusion and recommendations.

LITERATURE REVIEW

The conceptual review of this study would serve as an important foundation, aiming to create ideas and vivid explanations about the variables. Drawing on insights from previous research, this section aims to provide a comprehensive understanding of the key concepts related to sustainability disclosure as an independent variable and board attributes (board size, independence, and meetings) as dependent variables.

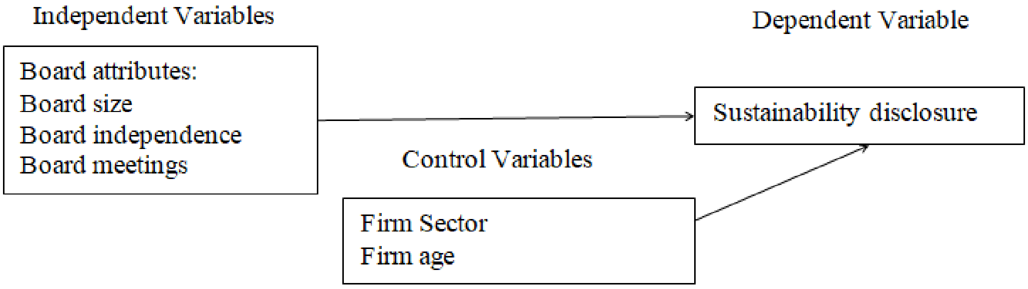

Fig 1: Conceptual Framework

Source: Field Survey, 2024

Brauer and Schmidt (2020) defined sustainability disclosure as management's voluntary communication of social information which has an economic impact within the firms' operations through their annual reports beyond and above any legal reporting regulation as per the IAS or any other similar legal requirement. In light of the above definitions, it could be inferred that disclosure could either be mandatory or voluntary. The nature and extent of the information that has to be provided as mandatorily included in the annual report are described in detail in IAS (Rosellyn & Lusmeida, 2019). In this research, sustainability disclosure refers to the full and accurate revelations of the business's ESG policies and the effects on the stakeholders to show its conformity to the principles of sustainable development.

Board attributes is a broad term that covers all aspects and parameters of the company's board of directors that either enhances or reduces its quality of governance. Board attributes include board size, independence, and meetings. These attributes define the quality of the board's monitoring of the management, ensuring accountability, and the advancement of sustainable initiatives that would reflect the firm's values and long-term strategy (Akpan & Amran, 2019). To this end, attributes of NMFs, in the context of this study, are critical in determining how the board increases its role in improving sustainability information and disclosure (Adewale, 2020).

Board size implies the total number of members on a firm's board of directors (Razaq et al., 2023). However it does not contain richness and fails to account for the quantitative factors of boards, for instance, the range of experts on the board (Sholikha & Himawan, 2023). The board size in this study was operationalized as the total number of directors serving on the firm's board with diverse expertise. Board independence can be defined as having outside directors on the board who closely monitor the management to ensure that they do not exploit shareholders' interests (Ajepe et al., 2021). Non-executive and independent directors are members of the board of directors of a firm as stated by Aifuwa and Embele (2019), they are not members of the administrative committee. In the context of this study, board independence is defined as the condition where a firm's board of directors contains non-executive and independent directors who do not have any business affiliations that could affect their ability to provide checks on managerial behaviour and report any misconduct.

Board meetings are formal gatherings of a company's board of directors where various aspects of company operations, strategy, and governance are discussed. One common definition is the frequency definition, which focuses on the number of meetings held within a fiscal year (Ntim & Osei, 2011). This approach provides a clear quantitative measure of board engagement, but it does not capture the quality of the discussions or the effectiveness of the meetings. High frequency does not necessarily correlate with productive meetings or effective governance and may even indicate excessive micromanagement (Olaniyi & Sulaiman, 2018). In this study, board meetings are defined as the formal gatherings of a company's board of directors, characterized by their frequency, the quality of discussions, and their strategic role in decision-making.

Established by Jensen and Meckling in 1976, agency theory has enhanced the relationship between the principals who act as the owners or the shareholders, and the agents which include the managers or the executives. This theory is important in corporate governance because it proposes a way by which corporate agents such as the board, might contain and actualize multiple potentialities of conflicting interests. Agency theory reinforces that board attributes dictate the disclosures and reporting when it comes to sustainability disclosure in the case of the listed NMFs. Many scholars have used this theory and some of them are Bear et al., (2010), Frias-Aceituno et al., (2013), and Terjesen et al., (2021), and this study underpin by agency theory.

Anyigbah et al. (2023) investigated the impact of board characteristics (such as board size, board independence, CEO Duality, board meetings, and committee on corporate sustainability reporting (CSR) in China, using both the fully Modified Ordinary Least Square (FMOLS) and Dynamics Ordinary Least Square (DOLS) empirical models. The study comprises 9842 firm-year observations from Shanghai and Shenzhen stock exchanges covering the 2006–2019 fiscal periods. The study found that board size promotes CSR. Although the study offers valuable insights, doesn't incorporate any moderator, focuses on China, and covers 14 years from 2006 to 2019 limits the applicability of its conclusions to other county economies and sectors, such as listed NMFs. To fill these gaps, this study examines the effect of board size on sustainability disclosure of listed NMFs, incorporating gender diversity covering 13 years from 2013 – 2023.

Ma and Chen (2024) investigated the impact of board size on corporate social responsibility (CSR) reporting within A-share listed technological firms in China. The study utilized data from 1,573 firm-year observations between 2011 and 2019, analyzing environmental, social, and governance (ESG) scores through ordinary least squares regression analysis and fixed effect regression models. The findings revealed that board size significantly positively influences CSR disclosures in both state-owned and non-state-owned firms. Despite its comprehensive approach, the study's focus on the Chinese technology industry may limit its applicability to other sectors or regions. Additionally, it does not specifically address the period from 2013 to 2023 for NMFs. This study examines the moderating role of gender diversity on the relationship between board size and sustainability disclosure in listed NMFs and covers 2013 to 2023.

Aliyu (2019) investigated the relationship between corporate governance variables (board size, board independence, board meeting (BM), and risk management committee composition), and environment reporting in Nigeria. The study obtained data from annual reports of 24 non-financial public listed firms in the Nigeria Exchange Group comprising three sectors (industrial goods, natural resources, and oil & gas) from 2011–2015. The study utilized multiple regression analysis and found a significant positive relationship between board independence and CER. The study contributes to the literature but focuses on non-financial public listed firms from 2011 to 2015, without considering the moderating effect of gender diversity. To fill these gaps, this study investigates the frequency of board independence's effect on sustainability disclosure of listed NMFs, incorporating gender diversity covering 13 years from 2013 – 2023.

Bosun-Fakunle et al. (2023) investigated the effect of corporate governance on environmental performance in Zimbabwe using census sampling techniques and panel regression analysis. The study finds that board independence has a positive but insignificant effect on environmental performance. This finding suggests that while independent directors may contribute to environmental governance, their impact is not substantial. A critique of this study is that it focuses narrowly on environmental performance without addressing broader sustainability disclosure practices. Additionally, it does not explore the role of gender diversity in moderating these effects. To close these gaps, this study looks at the relationship between board independence and sustainability disclosure across 13 years, from 2013 to 2023, while taking gender diversity into account as a moderating factor.

To shed light on the relationships between board size, board independence, the number of board meetings, company ownership, and environmental, social, and governance (ESG) disclosure, Lagasio and Cucari (2019) sampled 24 empirical studies for their meta-analysis of the literature. The study found that the number of board meetings positively and significantly influences ESG disclosure. The study contributes to the ongoing debate on the corporate governance mechanisms that lead to more ESG disclosure and highlights the need for a new approach to these issues. However, the study sampled 24 firms and the domain wasn't disclosed limiting its generalization to other sectors and countries. To fill these gaps, this study examines the effect of board meetings on sustainability disclosure of listed NMFs, incorporating gender diversity covering 13 years from 2013 – 2023.

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Caputo et al. (2021) examined how regulations governing corporate social responsibility reporting could improve the transparency of environmental information on the non-financial reports of a sample of 145 Italians. The study adopts an empirical approach and found an insignificant association between board meeting frequency and environmental reporting. While the study provides valuable insights into the semiconductor industry, its findings may not be generalized to other sectors and geographical areas, including listed NMFs as the study focused on Italian firms and its failure to incorporate gender diversity. This study addresses gaps by investigating the effect of board size on sustainability disclosure of listed NMFs, incorporating gender diversity covering 13 years from 2013 – 2023.

METHODOLOGY

This study used an ex-post facto research design, which is appropriate because it allows for the investigation of relationships between board attributes and sustainability disclosure after the events have already occurred, minimizing researcher interference and ensuring natural observation of the variables. The population for the study consists of 34 consumer goods and industrial goods firms as shown in Appendix A. A sample size of 18 firms was selected using purposive sampling, justified by the need to focus on firms that have consistently disclosed sustainability reports from 2013 to 2023 as shown in Appendix B. This study utilized the annual reports of these firms to gather necessary data, employs multiple regression techniques, and analyses the data through STATA software 13. This study adapts the model specification of (2020) as:

$$ROA_{it} = \alpha_i + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BM_{it} + \beta_4 BB_{it} + \beta_5 GD_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV_{it} + \beta_8 FAGE_{it} + \varepsilon_{it} \quad (1)$$

Where: ROA = Return on assets, BS = Board size, BI = Board independence, BM= Board meetings, BB = Board busyness, GD = Gender diversity, FSIZE = firm size, FAGE = Firm age, LEV = Leverage, α = intercepts, ε = error terms, $\beta_{1-}\beta_{12}$ = Coeficient, it = firm at time

On the basis of proxies for the different variables under study, the above equations have been modified as follows:

$$SD_{it} = \alpha_i + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BM_{it} + \beta_4 LBS_{it} + \beta_5 FA_{it} + \varepsilon_{it} \quad (2)$$

Where: SD = Sustainability disclosure, BS = Board size, BI = Board independence, BM = Board size, LBS = firm size, FA = Firm age, α = intercepts, ε = error terms, $\beta_{1-}\beta_5$ = Coeficient, it = firm at time

The variables definitions and measurement of this study that include independent variable (board size, Independent, and meeting), dependent Variable (sustainability disclosure), and control variables (firm size, and firm age) are presented in Appendix C.

RESULTS AND DISCUSSION

This presents the results and discussion of the data of this paper analyzed through STATA 13 software.

Table 1

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
sd	198	.652	.478	0	1
bs	198	9.899	2.495	4	17
bm	198	5.187	1.263	3	11
bi	198	.752	.111	.5	.93

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fa	198	52.051	19.074	8	100
lbs	198	10.801	.77	9.26	12.49

Source: STATA 13, 2024

Table 1 indicates that sustainability disclosures range from 0 to 1 and have a mean of 0.652 with a standard deviation of 0.478, which implies that the variable has low variation. The board size ranges from 4 to 17, with a mean of 9.899 and a standard deviation of 2.495. This signifies that there is much variation in board size. In addition, board meetings range from 4 to 11, with a mean of 5.187 and a standard deviation of 1.263, implying higher variation in board meetings within the period under review. Additionally, board independence with a mean of 0.752 and a standard deviation of 0.111, whose value ranges from 0.5 to 0.93, indicates a very low variation.

Table 2

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) sd	1.000					
(2) bs	0.098	1.000				
	(0.169)					
(3) bm	0.209*	-0.015	1.000			
	(0.003)	(0.835)				
(4) bi	0.027	0.073	-0.001	1.000		
	(0.710)	(0.306)	(0.985)			
(5) fa	0.089	0.014	-0.109	-0.285*	1.000	
	(0.213)	(0.840)	(0.128)	(0.000)		
(6) lbs	0.346*	0.604*	-0.070	-0.027	-0.078	1.000
	(0.000)	(0.000)	(0.327)	(0.707)	(0.276)	
*** p<0.01, ** p<0.05, * p<0.1						

Source: STATA 13, 2024

Table 2 above reveals a low correlation between board meetings and sustainability disclosure, with a coefficient of 0.209 and a p-value of 0.003. However, it indicates no correlation between sustainability disclosure and board size or meetings. In addition, there is no significant correlation between the explanatory variables.

Table 3

Robustness Test

	VIF	1/VIF
lbs	1.634	.612
bs	1.62	.617

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fa	1.129	.885
bi	1.115	.897
bm	1.022	.978
Mean VIF	1.304	.
Hettest	0.3975	
Hausman Specification Test	0.0002	

Source: STATA 13, 2024

Table 3 about indicates no presence of multicollinearity as VIF mean of 1.304 is less than the benchmark of 10 and inverse of it is less than 1. In addition, hettest p-value of 0.3975 reveals no presence of heteroscedasticity as p-value is not significant as 5%. Additionally, Hausman specification test with a p-value of 0.0002 indicates that fixed effect is more appropriate to the penal data, but to ensure that panel correction standard error (PCSE) to ensure more reliable result.

Table 4

Linear regression

sd	Coef.	St.Err.	t-value	p-value			Sig
bs	-.0422	.012	-3.78	0.000			***
bm	.0996	.029	3.44	0.001			***
bi	.4803	.243	1.98	0.048			*
fa	.0048	.001	4.48	0.000			***
lbs	.03200	.037	8.71	0.000			***
Constant	-3.5158	.549	-6.41	0.000			***
R-squared	0.232	Number of obs	198				
F-test	85.95	Prob > F	0.000				
*** p<.01, ** p<.05, * p<.1							

Source: STATA 13, 2024

Table 4 above indicates an R-square of 0.232, implying that 23.2% of the variation in the dependent variable is explained jointly by independent variables and the control variables. However, with F-statistics of 85.95 significant at 1%, it signifies that the entire model is fit, well combined, and used.

The board size, with a coefficient of -0.0442 and a p-value of 0.000, indicates that board size has a negative and significant effect on sustainability disclosure. This study therefore rejects hypothesis I, as the p-value is less than 5%.

The board meetings, with a coefficient of -0.0996 and a p-value of 0.001, show that board meetings have a positive and significant effect on sustainability disclosure. This study therefore rejects hypothesis I, as the p-value is less than 5%.

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The board independence with a coefficient of -0.032 and a p-value of 0.00o shows that board meetings have a positive and significant effect on sustainability disclosure. This study therefore rejects hypothesis III, as the p-value is less than 5%.

CONCLUSION AND RECOMMENDATIONS

In conclusion, board size negatively and significantly influences sustainability disclosure. On the other hand, board meetings and independence have a positive relationship with sustainability disclosure.

The study recommends that:

- Firms should ensure that they work with an ideal board of directors, as this will improve sustainable decision-making.
- Every board meeting and every properly structured board meeting should incorporate sustainability to enhance the aspect of disclosure.
- Firms should enhance board independence for the effectiveness of oversight and sustainability reporting through a higher proportion of independent directors.

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