

Board Attributes and Sustainability Reporting of Listed Firms in Nigeria: Moderated by Board Commitment

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ABSTRACT

The study addresses the global concern of sustainability, particularly within corporate entities striving to meet stakeholder needs and adhere to International Financial Reporting Standards. Focused on the mission of the Global Reporting Initiative and aligned with the world sustainability development goal agenda, the research explores the moderating impact of board commitment on board attributes and sustainability reporting in listed Nigerian firms from 2013 to 2022. Utilizing a correlational research design and employing a stratified sampling technique, the study examines data extracted from annual audited financial statements of listed firms via the Nigerian Exchange Group (NGX) website. Multiple regression analysis using STATA 13 reveals that board size, board independence, and board commitment significantly and positively influence sustainability reporting, while board gender has a negative and statistically insignificant effect. Considering the moderating variable, it is discovered that board size and independence exert a significant negative influence on sustainability reporting. Conversely, board gender demonstrates a positive but statistically insignificant impact. The study recommends a prudent reduction in the number of directors to enhance coordination and communication efficiency, thereby fostering a cohesive decision-making process and improving sustainability reporting among listed firms in Nigeria.

KEYWORDS: Board size, gender, independence, commitment and sustainability reporting

INTRODUCTION

Today, sustainability reporting is often seen as an important mechanism or indicator for measuring and assessing the effectiveness of corporate organization at different management level through accountability and transparency. According to Borial (2013), sustainability reporting is a common business practice in attempts to meet the demand and expectations of various stakeholders on how other issues related to the economic, social and environmental issues are been managed and addressed by the management. Furthermore, Hong, Fabio and Thiago (2014) emphasized that sustainability has been considered as an act of disclosing some important corporate organisation's information that deals with its social, economic and environmental matters in an effort to build a sustainable image upon the adoption of common business ethical practice.

Although, KPMG (2008) expressed that sustainability reporting has no particular generally accepted definition. Yet, corporate reporting and sustainable development should be considered as subset of sustainability reporting. On the other hand, GRI (2011) sees sustainability reporting as business practice that focuses on management accountability through measurement of organisation's performance in an effort to achieve a sustainable development goals.

It is imperative to note that the growth and sustainability of every business operation lies on the

effectiveness of its management's decisions and alongside the commitments of its board members. Therefore, individual and other business stake holders have shown great concern on the corporate sustainability disclosure amongst individual corporate entities; that would ultimately showcase the manner in which the business activities have been dealing with other important issues like the economic, social and environment management as the case may be. Meanwhile, many corporate entities today deemed it necessary to integrate corporate sustainability in their core practices towards fulfilling the need of their investors (KPMG, 2011). Accordingly, Yunusa (2017) reported that a well-established guideline have been provided to all Nigerian industrial firms on the management of waste and pollution based on environmental protection Decree No. 42 of 1988 and other relevant laws by Federal Environmental Protection Agency and Federal Ministry of environment towards meeting the global standard environmental protection agenda.

It is important to note scholars like (Cormier, Ledoux, Magnan & Aerts, 2010; Khan, Muttakin, & Siddiqui, 2013; Michelon & Parbonetti, 2012) argued a Corporate Governance Mechanism (CGM) play a significant role towards maintaining a quality reporting disclosure. In that regards, this study examine the moderating effect of board commitment on the relationship between board attributes and sustainability reporting of Nigerian listed firms for the periods of 2013-2022. This was attributed to the mixed findings of the previous related studies conducted by some scholars like (Cicchello, et al., 2021; Asuquo, 2012; Ndal, et al., 2021; & Chinonyelum & Ndubuisi, 2022), which further serves as a gap to the study. It is important to note that both the moderating variable (board commitment) and the independent variable represented by (board size, gender and independence) were drawn from CGM, while the dependent variable is represented by sustainability reporting and measured by (GRI 3.1 index of economic, social and environmental disclosure). Also, the study employed Legitimacy Theory to anchor the variables of the study to serve as a gap to the study; as to the best of the researcher's knowledge it was not used in the related previous studies

This paper will avail the management and board of Nigerian listed companies the opportunity in making effective decision in relation to subject matter. Also, the result of the study will be beneficial to some of the agencies and authorities such as Federal Inland Revenue Service (FIRS), Nigerian Social Insurance Trust Fund (NSITF), Nigeria Securities and Exchange Commission (SEC), Federal Environmental Protection Agency (FEPA), Federal Ministry of Environment. Moreover, the outcome of the paper will serve as source of research reference in carrying out other related studies.

LITERATURE REVIEW

Board Size and Sustainability Reporting

According to Ong and Djajadikerta (2018) there is a significant link between firm size and environmental transparency. Ettredge et al. (2010) emphasized that board size and disclosure compliance linked significantly. However, large firms are significantly related to value of equity significantly. In Australia, Karim, Kand and Rutledge (2004) posited that there is positive association between the board size and environmental disclosures. Alnabsha, Abdou and Ntim (2018) argued that board size influences the oversight function of a firm as well as degree of firm's corporate disclosures positively. Whereas, in another research carried out by Farah, Farrukh and Faizan (2016) and Naseem, Rehman, Ikram (2017) it was established that the association between board size and extend of disclosures of CSR is positive. But, Mahmood, et al (2018) concluded that board size correlated positively with disclosure practices of sustainability. On the other hand, Amran, Lee and Devi (2014) affirmed that board size and sustainability corporate reporting are negative. Hence it is on this basis a hypothesis is formulates as:

H₀₁: Board Size has no significant effect on sustainability reporting of listed firms in Nigeria

Board Gender and Sustainability Reporting

Lu and Herremans (2019) in their study discovered that women directors influence environmental disclosure of firms. Maniagi et al (2013) found that the decisions on governance, social and as well as environmental disclosure are greatly influenced by women directors of the boards. Moreover, Kassinis, Pnyiotou, Dimou (2016) opined that the link between women diversity of an organization and environmental performance is positive. Also, Bear and Rahman (2010) postulated that board gender diversity has a greater or significant tendency to influence decision about disclosure of environmental activities of an organization. Conversely, Al – Baalouch (2019) revealed that the presence of women in the board has an impact on the reporting quality of an organization. Sequel to the above argument and findings, the study hypothesized that:

H_{O2}: Board Gender has no significant effect on sustainability reporting of listed firms in Nigeria

Board Independence and Sustainability Reporting

Board independence is often viewed as an aspect of corporate governance that ensures the protection of stakeholder's interest (Ong and Djajadikerta, 2018). Therefore, Hu and Loh (2018) stressed that there should be no association between independent directors and management under normal circumstance. In that regard, the board who are seen to be independent could compel the management to disclose information on the entire activities of the organisation. According Masud, et al (2018) the Pakistani firms with high concentration of independent director often emphasize on transparency, accountability, CSR of their organization. But, in another similar works conducted in Saudi Arabian and Pakistani by Alotaibi (2016) revealed that board independence and CSR disclosure practices relate negatively. On the hand, Naseem et al. (2017) reported that CSR disclosure practice is facilitated by independent directors in Pakistan. Similarly, Muttakin (2014) established that the independent directors influence the CSR disclosures of a firm positively. Herda et al. (2012) postulated that firms' reporting disclosure ability is determined by the influence or decision of the board independence. On the basis of the above evidence a hypothesis is formulated in a null form as:

H_{O3}: Board Independence has no significant effect on sustainability reporting of listed firms in Nigeria

Board Commitment and Sustainability Reporting

According to Liao and Lin (2018) the commitment of the board can be assessed through the number of meeting held by the boards themselves. Meanwhile, Alotaibi (2016) considered board meeting as a medium through which information are communicated among certain business stakeholders. Therefore, Alnabsha et al. (2018) discovered that board meetings have an influence on the firms' activities as well as the quality of reporting disclosure of an organisation. In same vain, a study was conducted by Naseem et al. (2016) in Pakistan and the outcome shows that corporate boards meetings are more likely to influence CSR disclosure. However, other studies like Iraya and Mwangi (2014) contend that board meetings has a greater likely hood in resolving organisations challenges. In a study by Khan et al. (2019) in Pakistan it was established that the greater the number of board meetings the greater the sustainability disclosures of a firm. Shrivastava and Addas (2014) found a correlation between the number of board meetings and firms' performance and CSR. Hu and Loh (2018) concluded that the frequency of board meetings and sustainability reporting disclosure are significantly associated positively. In lined with these divergence views, this hypothesis is formulated as:

H_{O4}: Board commitment has no significant effect on moderating board attributes and sustainability reporting of listed firms in Nigeria

METHODOLOGY

Correlational research design is considered suitable for the study. And all the Nigeria listed firms were considered as population of the study between the periods of 2013 to 2022, based on post positivism approach. Furthermore, a stratified sampling technique is employed in selecting the samples of the study based on the following criteria:

1. The firm must have been listed in the NGX from sector on the basis of Shahin (2015) adopted definition “ A firm under NGX that is engaged in the production of goods through transformation of raw materials or components into finished products using physical and chemical processes”. That enables the author utilize all possible GRI 3.1 sustainability disclosure index (economic, social and environment) from the targeted samples of study.
2. The firm must have been listed not later than 2013.

Stratified sample Size of the study

S/No	NGX Sectorial Classification	Actual number of the Companies	Number of the selected firms
1	Agriculture	5	3
2	Conglomerate	2	1
3	Consumer goods	16	11
4	Health care	6	4
5	Industrial goods	11	8
6	oil and gas	3	2
	Total	43	29
Sources: NGX Website (2024)			

Table.1 shows the detail of the selected sample size based on the aforementioned criteria; these comprise of a total of 29 firms of the 43 listed manufacturing firms drawn from some selected sectors namely: Agriculture, conglomerate, consumer goods, health care, industrial goods and oil and gas respectively. However other sectors like; natural resources, services, construction/real estate, financial services, and ICT were removed based on the criteria.

Multiple regression technique is employed in analyzing the data with the aid of STATA 13 version software been a tool the analysis.

Model Specifications

This study relied on adapted multiple panel regression model of Yahaya, Idris and Mohammed (2023) to examine the moderating effect of the board commitment on the relationship between board attributes as explanatory variable represented by (board size, gender and independence) and sustainability reporting as explained variable, the interaction of the moderating variable on both the explanatory and explained variables were encapsulated in the model below:

$$SR_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BG_{it} + \beta_3 BI_{it} + \beta_4 BC_{it} + \beta_5 BS * BC_{it} + \beta_6 BG * BC_{it} + \beta_7 BI * BC_{it} + \mu_{it} \dots (i)$$

Where:

SR= Sustainability reporting (Dependent variable)

i= Entities

t= Time

β_0 = Constant

β_1 - β_4 = Coefficients of parameters

BS = Board size (Independent variable)

BG = Board gender (Independent variable)

BI = Board independence (Independent variable)

BC = Board commitment (Moderating variable)

BS*BC= Board size as moderated by board commitment

BG*BC= Board gender as moderated by board commitment

BI*BC= Board independence as moderated by board commitment

μ = error term

Variable measurement and sources

Variable	Symbol	Measurement	Sources
Dependent variable			
Sustainability reporting	SR	GRI version 3.1 Disclosure indicators (Economic, social and environmental) of sustainability reporting as:	GRI (2022)
		Index score = n/k ,	
		Where: n= number of index which is fulfilled by the company and	
		k= the maximum index which should be fulfilled by the company.	
Independent variables			
Board size	BS	board size is measured as total number of board members in an organization	Kruders and Kabir (2018) and Saari and Kao (2019)
Board gender	BG	Board gender as board female representative; measured as proportion of female to number of directors in the board	, Chinonyelum and Ndubuisi (2022)
Board independence	BI	Board independence is the number of independent directors non-executive directors over the total number of board members	Kruders and Kabir (2018) and Saari and Kao (2019)
Moderating Variable			
Board commitment	BC	Board commitment as number of times that the board met during a financial year	Chinonyelum and Ndubuisi (2022)

Source: Author’s compilation (2023)

RESULTS AND DISCUSSION

This section deals with presentation and analysis of data through descriptive statistics, correlation matrix and regression.

Descriptive Statistics

The characteristics of the variables have been described in this descriptive statistics table as: Descriptive statistic of the variables

Variable	Min	Max	Mean	Std. Dev.
SR	0.4161	2.3226	1.5568	0.405
BS	3	19	9.9103	3.2506
BG	0	6	0.17133	0.1145
BI	0.25	1	0.6202	0.1528
BC	3	44	2.4966	2.5112
Source: STATA Output (2023)				

Table 2 revealed the characteristics of the variables used for the study which comprises of the sustainability reporting (SR), Board size (BS), Board gender (BG), Board independence (BI) and Board commitment (BC). It is shown that sustainability reporting value ranges from the minimum value 1.5566 and maximum value of 2.3226 with the mean and standard deviation value of 1.5568 and 0.405 respectively. Also, board size maintained a mean value of 9.9103 that further ranges between the minimum value of 3 and maximum value of 19. But, board gender that represented the proportion of female in board shows an average value of 0.17133 with a corresponding standard deviation of 0.1145 which spans between the minimum and maximum values of 0 and 6 respectively. On the other hand, board independence which represents the proportion of non- executive members from the number of the board maintained a normal value of 0.602 and a standard deviation value of 0.1528 with minimum and maximum values of 0.25 and 1. The board commitment as a moderating variable of the study shows a minimum and maximum value of 3 and 44 along with a mean and standard deviation values of 2.4966 and 2.5112 respectively.

Correlation Matrix

The correlation matrix focuses on association between and amongst the variables of the study, which comprises of the explained variable; sustainability reporting (SR) and explanatory variables; board size (BS), board gender (BG), board independence (BI) and board commitment (BC) respectively.

Table. 2 *Correlation Matrix*

Variables	1	2	3	4	5
SR	1				
BS	0.1533	1			
BG	0.2302	0.0615	1		
BI	0.0998	-0.0804	0.1440	1	
BC	-0.0447	0.1437	0.1589	0.0686	1
Source: STATA output (2023)					

Table 3 shows that the correlations between SR with BS, BG and BI were positively weak at coefficient value of 0.1533, 0.2302 and 0.0998 respectively, while, the correlation between SR and BC which is negative. Except that the correlation between SR with BS and BG were significant at 1% each. On the hand, the correlations amongst the explanatory variables (BS, BG and BC) are seen to be positively weak, while that of BS and BI is negative with coefficient value of -0.0804. Except that the correlation between BS and BC is significant at 5%. Also, the correlation between BG with BI and BC were significant at 5% and 1% respectively. Hence, that signifies the absence of multicollinearity sign among the explanatory variables of the study.

Table 2. Regression Results

Variables	Coefficient	T- values	P-Values	VIF	Tolerance Value
BS	0.0202	2.83	0.005	1.03	0.9685
BG	0.7959	3.89	0	1.05	0.9543
BI	0.2333	1.53	0.127	1.03	0.9678
BC	-0.0177	-1.9	0.059	1.05	0.9533
BSBC					
BGBC					
BIBC					
R ²	0.0904				
Adj R ²	0.0776				
F- Start	7.08				
F- Sig	0.0000				
Sources: STATA output (2023)					

Table 3 represented the summary of a regression result of the study drawn from model I and model II respectively. Therefore, the parsimonious model has been duly subjected to post regression test to ensure best fit of the models upon which the results is interpreted based on “BLUE” and ultimately came up with a valid inferences from the study. Meanwhile, that has been determined through the Hausman specification test conducted, that shows Chi 2 value of 0.024, which suggested for fixed effect Model as the best in interpreting the result of the study considering the absence of heteroskedasticity outcome of the hettest test that signifies equal spread of data from the model. .

The Variance Inflation Factor (VIF) with the corresponding Tolerance Value was tested based on the rule of thumb of VIF and the Tolerance Value. The VIF which is constantly shown a smaller value than ten (10) with a corresponding tolerance value that constantly showing smaller value than one (1). These outcomes indicate absence of multicollinearity effect within the explanatory variables as far as the study is concern.

The parsimonious model maintains a cumulative R² (R- Squared) value of (0.137) being a multiple coefficient of determination that represents the percentage of total variation in the dependent variable, been explained all the explanatory variables jointly in the study. This suggested that that 14% of the variation in dependent variable is cause by the explanatory variables jointly. And the outcome has been supported by the F- Stat and F- Sig values of of (6.91) and (0.000) which further signifies the fitness of the model at

1% significant level.

Hypothesis One (Board Size and Sustainability Reporting)

From table 4 board size with a positive coefficient value of 0.08007 and P- value of 0.095 which significant at 10%, signifies that board size has a positive and significant effect on sustainability reporting of the listed firms in Nigeria. This implies that any increase in board size will lead to increase in sustainability of the listed firms in Nigeria. This provides evidence for not accepting the null the hypothesis that states board size has no significant effect on sustainability of listed firms in Nigeria, on the other hand, alternate hypothesis is accepted. The outcome is in line with the view of Ettredge (2011) and Pakistan et al (2016) and Naseem et al (2017) and contradicts the study of Amran et al (2014) and Kiliç et al. (2015), which is justified the underpinning theory of the study.

Hypothesis Two (Board Gender and Sustainability Reporting)

It is found that board gender has a negative but, insignificant relationship on sustainability reporting with a coefficient value of -0.0143 and P- value of -0.991 respectively. Therefore, it is means that any change in the board gender of Nigerian listed firm will have no effect on sustainability. In that regards, the null hypothesis which stats that board gender has no significant effect on sustainability of listed firms in Nigeria will be accept, and that has no any policy implication. This outcome contradicted the view of Post et al (2011) and Baalouch et al (2019) respectively, which further contradicted the underpinning theory of the study.

Hypothesis Three (Board Independence and Sustainability Reporting)

The result in the table 4 revealed that board independence is positively connected with sustainability of Nigerian listed firms at 1% significant level, represented by coefficient and p-value of 2.9718 and 0.009 respectively. This shows that for every 1 unit increase in the proportion of non-executive directors to the entire number of the directors would lead to increase in the sustainability reporting by 297%. These, serves as an evidence for not accepting the null hypothesis that states board independence has no significant effect on sustainability of listed firms in Nigeria, but to accept the alternate hypothesis. This result agrees with Khan, Muttakin, and Siddiqui (2013) and Naseemetal (2017), but, disputed the argument of Alotaibi and Hussainey (2016) and Mahmood et al (2018). The outcome further supported the underpinning theory of the study.

Hypothesis Four (Board Commitment and Sustainability Reporting)

Table 4 revealed that board commitment is positive and significantly connected to sustainability with a coefficient value of 0.6971 and p- value of 0.016. It is therefore, means that the more addition unit of members meeting frequency the more the sustainability reporting by 70%. Which further suggested that the null hypothesis will be accepted, which states that board commitment has no significant effect on suitability of listed Nigerian firms, which further validated its moderating role. Meanwhile, the views of Naseem et al (2017) and Alnabsha et al (2018) as well as the underpinning theory are clearly supported.

Hypothesis Five (Board Commitment Moderating the Effect of Board Size on Sustainability Reporting)

Table 4 revealed that CEO gender maintained a negative and 1% significant P- value of 0.011 with a corresponded coefficient value of 0.3793. It therefore, concludes that any change of CEO gender will lead to decrease in financial distress of listed DMBs in Nigeria as moderated by risk committee gender by 38%. Thus, the CEO gender has a negative and significant effect on financial distress likelihood in Nigeria as

moderated by risk committee gender. Consequently, the study fail to accept the null hypothesis which states that risk committee gender has no significant effect in moderating CEOs gender on financial distress of listed DMBs in Nigeria.

Hypothesis Six (Board Commitment Moderating the Effect of Board Size on Sustainability Reporting)

From Table 4 board commitment as a moderating variable has a negative and 5% significant influence on board size and sustainability with coefficient value of -0.0370 and p- value of 0.015 respectively. This implies that any increase in board size will lead to a reduction in sustainability by 4%. This provide evidence for not accepting the null hypothesis; as board commitment has no significant influence on moderating the effect of board size on sustainability Nigerian listed firms.

Hypothesis Seven (Board Commitment Moderating the Effect of Board Gender on Sustainability Reporting)

Table 4 revealed that board gender is positive but insignificantly influencing sustainability as moderated by board commitment with coefficient value of 0.3294 and p- value of 0.186 respectively. Hence, its implies that with the interaction of the moderating variable, any change in the number of board female in the board will have no influence on the sustainability reporting of listed Nigerian firms. And that lead to acceptance of null hypothesis which states that board commitment has no significant effect on moderating board gender on sustainability reporting of listed Nigerian firms.

Hypothesis Eight (Board Commitment Moderating the Effect of Board Independence on Sustainability Reporting)

From Table 4 it is seen that board independent has a negative and significant effect on the sustainability of listed Nigerian firms as moderated by board commitment at 5% significant. This suggested that for any change in the number of the proportion of executive members there will be an increase in the sustainability reporting of the listed firms in Nigeria as moderated by board commitment. This further suggest for not accepting the null hypothesis which stats that board commitment has no significant effect on moderating board independence on sustainability of listed Nigeria firms

CONCLUSION AND RECOMMENDATIONS

The paper examined the moderating effect of board commitment on the board attributes and sustainability reporting of listed Nigerian firms. Therefore it is established that board size, board independence and board commitment significantly influenced sustainability reporting positively. But, board gender has a negative and insignificant effect on sustainability. Upon the interaction of the moderating variable, it is found that board size and independence have significant influence on sustainability reporting negatively. On the other hand, board gender is positive but has no statistical significant influence on sustainability reporting. It is therefore, recommended that the number of directors (executives and non-executives) that constitute the board should be reasonably minimized to avoid unnecessary complexity in coordination and communication cause by overcrowded or large boards which will ultimately impede the cohesive mindset of some few members on decision making process to improve the sustainability reporting amongst the listed firms in Nigeria.

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