

The Path to Sustainability: Environmental, Social and Governance Disclosure and Gender Balance in the Board

Imaabong Judith Nnam¹, Chinwe R. Okoyeuzu², Wilfred Isioma Ukpere^{3*}

¹Department of Accountancy, University of Nigeria, Enugu Campus, Nigeria

²Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria

³Department of Industrial Psychology and People Management, University of Johannesburg, South Africa.

Citation: Nnam, et al (2024), The Path to Sustainability: Environmental, Social and Governance Disclosure and Gender Balance in the Board. Educational Administration: Theory and Practice, 30(6), 3822-3832

Doi:10.53555/kuey.v30i6.6325

ARTICLE INFO

ABSTRACT

Our study explores the link between environmental, social and governance (ESG) disclosure and gender balance on the corporate board, the audit committee and committee on risk. Additional to finding the impact of the participation of female on the corporate board on ESG disclosure, the study further analyses the impact of women on the risk as well as the audit committee respectively on ESG disclosure. The audit committee and the risk committee play oversight functions in ensuring organisational sustainability. Extant literature on ESG and gender balance focus predominantly on the mature governance systems, leaving a gap in understanding how these relationships play out in the less mature governance system. Therefore, this study contributes to the discussions on ESG and gender balance from a varied perspective so as to provide a more comprehensive outlook of the global impact of gender balance on ESG disclosure. Using Expo facto research design, the combined environmental, social and governance disclosure index of all listed non-financial firms are captured for the period from 2012 to 2021 as well as gender ratio on the board and the risk and audit committees. Pooled ordinary least square regression is applied using the STATA version. 14.2. The study finds a positive but insignificant relationship between gender board presence, the risk, and the audit committee and disclosure of ESG. The insignificant effect could be traced to the percentage of female in the board and committees. This outcome aligns with the critical mass theory. Policymakers can therefore leverage on this outcome to design policies, which ensures a critical base of female on the board and committees in order to achieve increased ESG disclosure. A critical base of women on the board must be established. The study recommends increased number of females on the board as the presence of women on the boards and committee has shown a significant relationship. The medium through which female presence in the board impacts ESG performance and disclosure, especially in the developing economy as well as the challenges encountered in implementing gender inclusiveness on the board will provide worthy direction for further studies.

Keywords: ESG, gender, corporate board, audit committee, risk committee.

INTRODUCTION

Currently, the interconnection between gender presence on the corporate board and sustainability disclosure practices have gained traction. Female participation in corporate board is increasingly being recognized as a key driver for ensuring accountability, transparency and sustainability within the organization. Our study seeks to explore the impact of female board presence on ESG disclosure, to provide a better understanding of how gender diversity impacts on corporate sustainability disclosure. Information pertaining to the economy, the environmental, and the society have become a major concern for stakeholders when it comes to accounting and financial information. These have become important as accounting information suffers a demerit as it neglects non-financial data and focuses mainly on financials. Investing in integrated reporting has even been considered as tactical for organizational growth and profitability (Bhati & Diya, 2022), it proffers an organization's efforts

towards creating sustainable value and the organizational attitude especially in the turbulent environment. Some views have opposed the genuity of sustainability disclosure, claiming that these reports are used to influence the perception of stakeholders and therefore the sustainability report of companies may not show the actual sustainability performance, especially as the sustainability report are not audited like the annual report, (Papoutsi et al., 2020). However, according to Papoutsi et al., (2020), sustainability report and disclosure is an actual indication of a company's sustainability performance. ESG is receiving a lot of attention and investment due to the heightened concern about climate change and sustainability by stakeholders (Bhati & Diya, 2022). This increased attention then makes a demand on the companies to increase the reports on ESG activities. This strategic direction from the board is invaluable here as well as the corporate governance mechanism, (Bhati & Diya, 2022). The corporate board forms the highest decision-making units in the organization, (Khemakhem et al., 2022). The Audit committee is one of the strong pillars of corporate governance and it is expected to impact positively on financial reporting. The audit committee provides a solid support for the corporate board, it provides a monitoring role which spans beyond financial matters to non-financial matters, including sustainability issues, thereby protecting the various stakeholders especially as companies are under pressure to remain socially and ethically responsible following the COVID-19 pandemic. Following the COVID-19 pandemic, interest of stakeholders in ESG performance and reporting has increased suggesting the extent of importance attached to sustainability performance and reporting. Adequate reporting will bridge the gap created by information asymmetry. The oversight function of the audit committee may be more contextual as they interact with executives and auditors of the firm outside the scheduled meetings where they greatly influence these executives thereby impacting greatly on the overall performance of the firm, (Abbasi et al., 2024).

Organizational stakeholders now expect the Audit committee to oversee the non-financial reporting aspects of the organization. Institutional investors expect audit committee to overseas sustainability reporting. Therefore, audit committee are now increasingly paying attention to sustainability disclosures, (Abbasi et al., 2024). Most of the oversight functions of the board as well as decision-making happens in the board committees, therefore the influence of women in the board may be more pronounced in the committees, (Khemakhem et al.,2022). It will therefore be worthwhile to investigate not only the impact of women on the corporate board but also their impacts on the various committees.

Majority of the studies also investigated the developed countries thereby neglecting the developing countries, (Ngunye et al., 2020). Some previous studies (Yahaya, 2023), and Lim & Chung, 2021), that have looked at how women impact on CSR and ESG performance have concentrated on females as leaders eg CEOs or Chairs of boards. The shortcoming of this studies is that they are very few firms especially in the developing economies where females act as CEO and board Chairs, when compared with males' CEOs and board Chairs.

Our study contribute significantly to the area of sustainability as it demonstrate how corporate governance and gender diversity influences ESG and organizational sustainability disclosure. This study demonstrates to investors that assessing the board makeup for gender representation could provide the right signal for investment. Policy implementation must tilt towards promoting gender diversity in the board with adequate representation in other to build sustainable organization. Policy implementers must consider and establish a minimum number of female representations in the board. The remaining of this paper is presented under literature review section, methods and data, results, discussion and then conclusion.

REVIEW OF LITERATURE

Theoretical review

Several theories such as agency, resource dependency and stakeholders' theory have been employed in previous studies to provide a more detailed explanation of sustainability performance. We employ varied theoretical lenses to explain the connection between women participation in the various boards and sustainability disclosure heeding Nuber and Velte (2021). The agency theory postulates that due to the divergence between principal and agent stemming from asymmetry of information, female directors may be relied upon to curtail this conflict and undermine information asymmetry between this parties. The agency theory holds that the female gender is more concerned about protecting the social and environmental dimensions of sustainability (Davidson & Freudenburg,1996). Women possess more independent thoughts when compared to men (Adams& Ferreira, 2009). These features help women to be more concerned with ensuring the adherence and disclosure of sustainability practices in firms where they oversee.

Resource dependency theory: Given the different background, expertise, knowledge and experience of women, these attributes are brought to bear in the board and help to engender disclosure of sustainability practices (Lawati et al 2021). These peculiar characteristics of women are invaluable to the organisation, (Abbasi et al., 2020). Through the insightful oversight and recommendations sustainability practices and disclosures are achieved, (Elmaghri et al., 2019). Therefore, the presence of women in the board will heighten the quality of leadership, sustainability and disclosure.

Development of Hypotheses

Board characteristics have commonly been agreed to significantly impact on the behaviour and even the performance of organizations, (Chindasombatcharoen et al., 2021, Zubeltzu-Jacks et al., 2020). The role of women in the board have been shown to positively impact on the organization (Orazanlin & Bay-Danletov, 2020, Kyaw et al., 2022, Vetri et al., 2021). The role of women in the promotion of sustainability crusade have also been assessed. Ayman, (2019), in a study to find the link between the number of female representations on the board and the level of CSR reporting in organisations in the Arab Gulf area, found a positive and significant relationship with CSR reporting in two of the countries studied, and a negative relationship in four of the countries studied. This nuanced outcome is explained by the varied institutional frameworks existing in these countries. For instance, political liberalism, legislative and representative institutions would provide adequate platform for female participation in governance. Bhatia & Divya, (2022) in a study to determine the board characteristics which influence the ESG disclosure score, found board gender diversity as one of the broad characteristics which promoted sustainability issues. Also, Chouaibi et al (2021) in a study to find the connection between board characteristics and quality of integrated reporting found gender diversity as one of the impacting characteristics which positively impacted on integrated reporting. Yaya, (2023) in a study to examine the presence of women in the firms' leadership impact on ESG performance. They found that women positively impacted on social and environmental performance when they are in leadership position. This outcome is contrary to the findings of Ohiyemi & Kayode (2021) who found that women as chair of the board does not impact on the performance of ESG in the organization. However, this outcome is different where women act as CEO. Eliwa et al., (2023) have explored how the presence of women have mitigated ESG decoupling. Their finding supports the upper echelon theory and gender socialization theory. They found that firms with more females in the board engage less in ESG the coupling.

Some studies have also advocated the critical mass theory, for instance, Vitolla et al., (2020) found that large and active board with a considerable number of women in the board was linked to the publication of high-quality integrated report.

Extant literature has also advocated that other governance mechanisms like the subcommittees have also engendered disclosure of organizational practices (Hassan et al., 2023) and the impact of women in these sub committees have not been investigated especially in the emerging economies (Grassa et al., 2021; Elma et al., 2019; Malik et al., 2021; Raimo et al., 2021 & Salim et al., 2021). In a study to examine how the characteristics of risk committee impacts on risk disclosure of banking industry in an emergency economy, Hassan et al., (2023), found that the size of risk committee positively and significantly impacted on disclosure of risk. However, they do not find a positive association between risk committee gender diversity and risk disclosure. Similarly, Noor et al., (2022), in their study found that gender diversity on sub committees of governance is insignificant to the efficiency of risk oversight. However, according to Raimo et al., (2022), the presence of women in addition to improving risk monitoring have diverse perspectives with regards to accounting and reporting for risk and this compels management to strengthen disclosure. Their finding is synonymous with the upper echelon theory which posits that the appeal for women at the top level is due to their behavioral diversity. (Malik et al., 2020). Khemakhem et al., (2022), examined how the presence of women on the board and the sub committees of the board impacted on the disclosure of ESG in Canadian listed firms. The outcome is both positive and significant. The outcome also shows more significance from female representation in the board committee than their representation in the board. They believe women represent better from the subcommittee than from the board as they influence ESG disclosure more from the committee.

Abbasi et al., (2024), in a study to examine how the accounting and non-accounting expertise or female director's in the audit committee influenced carbon emission disclosure, found that females in the audit committee especially those that are non-accounting expert enhances carbon disclosure. Based on these discussions we hypothesize that: female presence in the corporate board will significantly impact on ESG disclosure; female presence in the audit committee will significantly impact on ESG disclosure; female presence in the risk committee will significantly impact on ESG disclosure.

RESEARCH DESIGN

Data Longitudinal *-post factum* research design is undertaken Our data covers a ten (10) years period, from 2012 - 2021 for all non-finance firms listed in Nigeria. Nigeria is chosen to present samples from one of the major economies in Africa as previous studies have not considered this. This study therefore focuses on the post populous African nation as well as the largest economy by gross domestic product (GDP), and contributes over 41% of West Africa, (World bank Report, 2021).

Seventy-seven (77) non-finance firms on the stockexchange group are selected. These also forms our sample. Data for this study is sourced from Machame RATIOS®, focusing on sustainability reports which are structured and highly informative ESG data that are of great interest to investors (Dawkins, (2005) as in Aureli, Gigli, Medei, & Supino, (2020).

Dependent Variables

ESG disclosure score in our study forms the main predicted variable (Zaid et al., 2020; Bravo and Reguera-Alvarado, 2019; Manita et al., 2018; Shahbaz et al., 2020)). The firm performance in term of how they report on the three pillars is captured. For each of the pillars a value of 1 or 0 for disclosure or nondisclosure respectively is assigned when information is disclosed under the different pillars. These values are then aggregated to arrive at the ESG scores.

Independent Variable

To understand how female gender representation impacts on sustainability disclosure in the firms, BGD is presented as the independent variable, (Yarram & Adapa, 2021)) BGD for the three different executive committees (the executive board, the audit committee, and the risk committee) are captured as the ratio of female in the respective board to total number of people in the board.

Control Variable

We control for size, using natural log of asset and leverage using long term debt to equity (Prasha, 2021). See previous studies: (Bhaskaran et al., 2021; Buallay, 2020), (Shahbaz et al, 2020).

Research Model

The theoretical literature and earlier empirical studies consulted provides a bases to draw up the model.

$$EGS_{it} = \beta_0 + \beta_1ACGB_{it} + \beta_2RCGB_{it} + \beta_3BGB_{it} + \beta_4FSize_{it} + \beta_5LEV_{it} + \mu_{it}$$

Therefore, we infer as follows: $\beta_1 X_{1it} < 0$, $\beta_2 X_{2it} < 0$, $\beta_3 X_{3it} > 0$, $\beta_4 X_{4it} < 0$, $\beta_5 X_{5it} > 0$, based on literature review. The operationalization of the above proxies is captured in the table below.

Where:

- ESG = Combined Environmental, Social and Governance disclosure Index
- ACGB = Audit committee gender balance
- RCGB = Risk committee gender balance
- BGB = Board gender balance
- FSize = Firm size
- LEV = Leverage
- β_0 = Constant
- β_1 - β_5 = Slope Coefficient
- μ = Stochastic disturbance
- I = ith company
- t = period

Variables	Description of variables
ESG performance	This shows the extent of disclosure of ESG performance. Measured using score cards of every reporting item which concerns Environmental, social and governance.
ACGB	Female directors on the aud. cttee as a proportion of all the members of audit committee.
RCGB	Female directors on the risk cttee as a proportion of all the members of the risk committee
BGB	Female directors as a proportion of all the members of the board
<i>Control Variables</i>	
Fsize	Firm size is represented by the natural log of the firms' book asset
LEV	The firms total long-term debt divided by the firms total equity.

DISCUSSION OF RESULTS

Descriptive Statistics

Table1: Descriptive Statistics

. summarize Fsize Leverage BGB RCGB ACGB EGS

Variable	Obs	Mean	Std. Dev.	Min	Max
Fsize	768	6.997083	1.174773	0	9.38
Leverage	768	.9642969	6.652978	-107.1	99.69
BGB	768	.1281181	.1243994	0	.7142857
RCGB	768	.0742045	.1433138	0	.8
ACGB	768	.1180891	.1452795	0	.7142857
EGS	768	.2547786	.1403003	0	.82

Source: STATA 14.2/Author (2023)

The mean of EGS is given as 0.25478, and a predictable error of 0.14030. For the predictor variables, the mean of board gender balance (BGB) is 0.12812 and a predictor variable of 0.124400, this shows that normally, the sample firms in the industry have only about 12.81% of the board members as females. The result also shows that the mean of risk committee gender balance (RCGB) is 0.07420 and a predictor variable of 0.14331. Therefore, normally, the sample has only about 7.42% female members in the risk committee during in the period of study. Furthermore, we see that normally audit committee gender balance (ACGB) is 0.1181 with a predictor variable of 0.1453, meaning that normally, the sample firms have only about 11.81% female members in the audit committee. The control variables, firm size shows a mean of 6.997 with a predictor variable of 1.175. The average of 6.997 in natural logarithm is equivalent to approximately 9 million Naira. This shows that averagely, the sample firms in the industry by total assets are worth NGN9million+

Lastly, leverage (LEV) is 0.9643 normally, with predictor variable of 6.6530. showing that on the average, the sample firms in the industry have leverage of 0.96 as against the average owner’s equity (Capital investment) during the period under study.

Normality Test- for normality, a probability (>) 0.05 indicates that the data are NORMAL and (<) 0.05 indicates an ARBNORMAL data.

Table2: Normality Test

swilk EGS BGB ACGB RCGB Leverage Fsize					
Shapiro-Wilk W test for normal data					
Variable	Obs	W	V	z	Prob>z
EGS	768	0.96392	17.896	7.065	0.00000
BGB	768	0.97422	12.789	6.242	0.00000
ACGB	768	0.97119	14.289	6.514	0.00000
RCGB	768	0.93504	32.225	8.506	0.00000
Leverage	768	0.20613	393.801	14.637	0.00000
Fsize	768	0.80528	96.592	11.195	0.00000

Source: STATA 14.2/Author, (2023)

Table2 shows that the Shapiro-wilk test for normality which covers all variables in the model. The dependent variable ESG has a z-statistics of 7.065 and a probability of Z-statistics of 0.00000. This shows that the dependent variable (EGS) is not normally distributed at 1% level. For the independent variables, the result shows that board gender balance (BGB) has a z-statistics of 6.242 and a probability of Z-statistics as 0.00000. This also shows that BGB is not normally distributed at 1% level of significance. Audit committee gender balance (ACGB) also has a z- statistics of 6.514, implying that ACGB is not normally distributed. The result also shows that risk committee gender balance (RCGB) is not normally distributed at a probability of 8.506 and z score of 0.00000 significant at 1% level. For the control variables, the outcome reveal that Leverage does not show a normal distribution. The z-statistic is significant at 1% level with a value of 14.637 and a probability of Z-statistics as 0.00000. Equally, firm size (Fsize) is not normally distributed as it has a z-statistic significant at 1% level of 11.195 with a Probability of Z-statistics of 0.00000. However, the study proceeds with non-parametric regression analyses.

Empirical Results

For more insight on the connection between the BGD and ESG performance disclosure, pooled ordinary least square (OLS) regression is carried our before checking for contradictions with the assumptions of the OLS regression. We perform diagnostics tests which include multicollinearity and heteroscedasticity. Spearman Rank correlation is employed also to test for relationship between regressor and the regressand.

Correlation

Table 3: Correlation Analysis
 . correlate Fsize Leverage BGB RCGB ACGB EGS
 (obs=768)

	Fsize	Leverage	BGB	RCGB	ACGB	EGS
Fsize	1.0000					
Leverage	0.0437	1.0000				
BGB	0.2052	0.0052	1.0000			
RCGB	0.1773	-0.0285	0.4342	1.0000		
ACGB	0.1687	0.0243	0.4855	0.2117	1.0000	
EGS	0.5524	-0.0481	0.3017	0.2801	0.2269	1.0000

Source: STATA 14.2/Author, (2023)

Our result from table 3 shows the association between board gender, risk committee gender presence and audit committee gender presence and ESG disclosure in. Finally, the control variable, Firm size has a positive association while Leverage revealed a negative association with, EGS, with 0.5524 and -0.0481 degree of association respectively.

Regression

Fixed and random effect regression analysis is conducted due to heteroscedasticity.

Table 4: Combine Regression Result

	EGS Model (Pool OLS)	EGS Model (FIXED)	EGS Model (Random)
CONS.	-0.1936 {0.000} ***	0.0234 {0.354}	-0.0160 {0.538}
BGB	0.1293 {0.002} ***	0.0670 {0.060}	0.0810 {0.020} **
RCGB	0.1242 {0.000}	0.1142 {0.000} ***	0.1142 {0.000} ***
ACGB	0.0598 {0.063}	0.0456 {0.092}	0.0467 {0.081}
Fsize	0.0596 {0.000} ***	0.0299 {0.000} ***	0.0352 {0.000} ***
LEV	-0.0014 {0.019} **	-0.0001 {0.850}	-0.0002 {0.652}
F-Stat	86.85 (0.0000)	26.30 (0.0000)	181.02 (0.0000)
R- Squared	0.363	0.3516	0.3564
VIF	1.24		
Hetest	27.58 {0.0000}		
Hausman Test		28.27 {0.0000}	

Source: Author’s compilation, 2023

Note: (1) bracket { } =p-values. (2) **, ***, =statistical significance at 5% and 1% levels respectively.

The F-statistic is significant at 86.85, and P-value of 0.0000 at 1% level.

Multicollinearity Test

The degree of Multicollinearity is tested for.

Table 5: Variance Inflation Factor (VIF)

```
. vif
```

Variable	VIF	1/VIF
BGB	1.55	0.643514
ACGB	1.32	0.758880
RCGB	1.25	0.802148
Fsize	1.06	0.940138
Leverage	1.00	0.996130
Mean VIF	1.24	

Source: STATA 14.2/Author, (2023)

The result shows there is no multicollinearity in our models, and therefore all independent variables in the model are used.

Heteroskedasticity Test

Our result indicates a heteroscedasticity problem in the model [27.58 (0.0000)] significant at 1% This indicates that our sample are not comparable. A robust regression approach is therefore warranted to record the how the results are affected by firm’s heteroscedasticity.

Table 6: Breusch-Pagan Godfrey - Heteroskedasticity Test

```
. reg EGS BGB RCGB ACGB Fsize Leverage
```

Source	SS	df	MS	Number of obs	=	768
Model	5.48075998	5	1.096152	F(5, 762)	=	86.85
Residual	9.61700239	762	.012620738	Prob > F	=	0.0000
				R-squared	=	0.3630
				Adj R-squared	=	0.3588
Total	15.0977624	767	.019684175	Root MSE	=	.11234

EGS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
BGB	.1292562	.0406488	3.18	0.002	.0494593 .2090531
RCGB	.1241785	.0316031	3.93	0.000	.0621391 .186218
ACGB	.059753	.0320519	1.86	0.063	-.0031675 .1226735
Fsize	.0595834	.0035612	16.73	0.000	.0525925 .0665743
Leverage	-.0014416	.0006109	-2.36	0.019	-.0026409 -.0002424
_cons	-.1935717	.0246097	-7.87	0.000	-.2418826 -.1452608


```
. hettest BGB RCGB ACGB Fsize Leverage
```

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
 Ho: Constant variance
 Variables: BGB RCGB ACGB Fsize Leverage

chi2(5) = 27.58
 Prob > chi2 = 0.0000

Source: STATA 14.2/Author, (2023)

Fixed and Random Effect Regression

Both the fixed and random effect regression are conducted, although the fixed effect is preferred. The outcome shows F statistics of 26.30 and 181.02 and a Wald statistics value of (0.0000) and (0.0000) for fixed and random effect respectively.

Hausman Specification Test

We hypothesize that the random effect model is preferred.

Table 7: Hausman’s Test

```

. hausman fixed random
----- Coefficients -----
      |      (b)      (B)      (b-B)      sqrt(diag(V_b-V_B))
      |      fixed    random   Difference   S.E.
-----+-----
    BGB | .0669553    .0810124    -.0140571    .0066045
    RCGB | .1142398    .114239    8.19e-07    .0030977
    ACGB | .0456134    .0467442    -.0011308    .0041363
    Fsize | .029871     .0351815    -.0053105    .0010033
    Leverage | -.0000811   -.0001954    .0001143    .
-----+-----
                b = consistent under Ho and Ha; obtained from xtreg
                B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

      chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =      28.27
    Prob>chi2 =      0.0000
(V_b-V_B is not positive definite)
    
```

Source: STATA 14.2/Author, (2023)

Our Hausman test p-value (0.0000), shows that our hypothesis should be rejected at a significant level of 5% or 1%. The fixed effect panel regression is then adopted for our conclusion and recommendation. Therefore, we test our hypotheses using the fixed effect results. We therefore carry out fixed effect regression using robust standard errors.

The study conducted a fixed effect regression using robust standard errors in addition to the combine regression output in table 4. The results obtain from the regression is thus presented and discussed below:

Table 8: FE regression (Robust standard Error)

```

. xtreg EGS BGB RCGB ACGB Fsize Leverage, fe vce(robust)

Fixed-effects (within) regression      Number of obs   =      768
Group variable: ID                    Number of groups =      77

R-sq:                                  Obs per group:
    within = 0.1609                    min =           8
    between = 0.4895                    avg =          10.0
    overall = 0.3516                    max =          10

corr(u_i, Xb) = 0.3725                  F(5,76)         =      24.76
                                          Prob > F         =      0.0000
    
```

(Std. Err. adjusted for 77 clusters in ID)

EGS	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
BGB	.0669553	.0580219	1.15	0.252	-.0486054 .182516
RCGB	.1142398	.0591942	1.93	0.057	-.0036557 .2321353
ACGB	.0456134	.0379053	1.20	0.233	-.0298815 .1211083
Fsize	.029871	.0029087	10.27	0.000	.0240777 .0356643
Leverage	-.0000811	.0001996	-0.41	0.686	-.0004787 .0003165
_cons	.0234051	.0221536	1.06	0.294	-.0207176 .0675278
sigma_u	.09735689				
sigma_e	.07282159				
rho	.64123811 (fraction of variance due to u_i)				

Source: STATA, 14.2/Author, (2023)

The regression outcome shows that audit committee gender balance has an insignificant positive effect on the EGS disclosures [coef. = 0.0456 (0.233)] of our sample firms in Nigeria in the period of study. This means that a rise in female population in the audit committee will lead to an insignificantly increase in the reporting and disclosures of EGS related activities. Risk committee gender balance also has an insignificant positive effect on environmental, social and governance (ESG) disclosures [coef. = 0.1142 (0.057)] in the sample firms. Therefore, a rise in the number of females in the risk management committee will lead to an insignificantly increase in the reporting and disclosures of EGS related activities, [coef. = 0.0670 (0.252)] of the sample firms.

CONCLUSION AND FUTURE DIRECTIONS

The regression result suggests a positive but insignificant correlation among the variables. The result shows that female presence in the board and sub committees - audit committee and risk committee have a positive although insignificant impact on sustainability disclosure respectively. This finding raises awareness of the interaction between female board presence and organisational sustainability disclosure practices. Presence of women on organisational board has been extoled for their efficiency in leadership, however our finding exhibits a nuanced statistical outcome. More attention is required on the structure and interaction of these variables given the insignificant outcome our findings. This outcome aligns with the findings of Ayam, (2019) who found that four countries out of six countries studied did not show any relationship between gender diversity and CSR.

The institutional environment in these four countries Influenced this outcome. The finding of Hasan et al., (2023), also corroborates our finding. Similarly, Noor et al., (2022) in their study also found that gender diversity on subcommittee of governance was insignificant to efficiency in risk disclosure. Our findings indicate that even though there is a positive connection it is insignificant. This implies that presence of women in the board impact positively on ESG disclosure but in an insignificant manner. This result may be due to low amount of women representation on the board. According to Noor et al., (2022), the insignificant outcome of their findings could be traced to low number of women on the subcommittee. Vitolla et al., (2020) also found that large boards with a greater number of women supported the dissemination of integrated reporting. This is in line with critical mass theory. More discussions are required here. The positive result may be motivating; however, the insignificant outcome of our finding is a wakeup call for more innovativeness to sustainability practices and disclosure especially as more stakeholders are pressing for increased disclosure (Eliwa et al., 2023). The discussion, therefore, should centre on how organizations can align gender diversity strategy with the expectations of stakeholders to alter the narrative in sustainability reporting. Moreover, our findings necessitate a re-evaluation of the current policies and practices of gender diversity and ESG disclosure.

Policy Implications

From our findings some policy implications can be recommended to enhance the impact of female presence on the board on sustainability disclosure practices in the organizations: Gender diversity could be incentivised. Policy implementation could include financial benefits for gender diversity and sustainability performance. Similar to initiatives implemented in some countries like Norway and France, gender diversity quotas could be introduced as interventions to ensure female representation on boards and committees, by this imposition, regulators will push organizations to proactively address gender imbalances and promote a more inclusive corporate culture. Corporate governance policy frameworks could be updated to incorporate ESG benchmark as a rudimental element of corporate governance codes, thereby emphasizing the importance of ESG disclosure and gender diversity in the decision-making processes of the board. Standardization of industry-wide guidelines for female representation and ESG disclosure will also promote a wider adoption across the industry. This will also promote consistency and comparability in sustainability reporting efforts.

Future research could explore the moderator variables and how they impact on the link between female presence and ESG disclosure. Other board composition factors, such as board size, board independence, and the presence of women directors, could be assessed, to gain enhanced insight of the nuanced dynamics impacting on sustainability reporting practices. Comparative analysis of gender diversity initiatives and ESG disclosure practices across different regions and industries will also provide insights into the contextual factors such as cultural norms and regulations which shape these relationships. Qualitative studies focusing on the decision-making processes within diverse boards could provide valuable insights into how gender diversity influences discussions, priorities, and outcomes related to ESG disclosure. By capturing the perspectives and experiences of board members, researchers can uncover the underlying mechanisms through which diversity impacts sustainability practices and reporting. Addressing these future research areas can advance our perception of the complex interaction between female presence on the board and ESG disclosure, paving the way for more informed policies, practices, and initiatives aimed at promoting sustainable and inclusive corporate governance.

REFERENCES

1. Adeosun, O. T., & Owolabi, K. E. (2021). Gender inequality: determinants and outcomes in Nigeria. *Journal of Business and Socio-economic Development*, 1(2), 165-181.
2. Ajibolade, S. O., & Sankay, O. T. (2013). Impact of Corporate Governance on Financial Performance of Non-Financial Firms in Nigeria. *European Journal of Business and Management*, 5(1), 131-140.
3. Asika, N. (2012). *Research Methodology in the Behavioral Sciences*. Lagos: Longman NigeriaPlc.
4. Arayakarnkul, P., Chatjuthamard, P., & Treepongkaruna, S. (2022). Board gender diversity, corporate social commitment and sustainability. *Corporate Social Responsibility and Environmental Management*, 29(5), 1706-1721.
5. Aureli, S., Gigli, S., Medei, F., & Supino, E. (2020). Sustainability Report and Corporate Governance in Different Institutional Contexts: An Analysis of the Italian and Spanish Companies. *Sustainability*, 12(1), 57.
6. Bhatia, S., & Marwaha, D. (2022). The influence of board factors and gender diversity on the ESG disclosure score: a study on Indian companies. *Global Business Review*, 23(6), 1544-1557.
7. Bose, S., Ali, M. J., Hossain, S., & Shamsuddin, A. (2022). Does CEO–audit committee/board interlocking matter for corporate social responsibility?. *Journal of Business Ethics*, 179(3), 819-847.
8. Chindasombatcharoen, P., Chatjuthamard, P., Jiraporn, P., & Treepongkaruna, S. (2021). Achieving sustainable development goals through board size and innovation. *Sustainable Development*.
9. Chouaibi, S., Chouaibi, Y., & Zouari, G. (2022). Board characteristics and integrated reporting quality: evidence from ESG European companies. *EuroMed Journal of Business*, 17(4), 425-447.
10. Chukwunwike, O. D., Okobo, M. M., & Nnam, I. J. (2024). Does Female Board Presence Moderate on the Relationship between Board Characteristic and Capital Structure? Evidence from Nigeria Listed Firms. *Asian Journal of Economics, Business and Accounting*, 24(4), 235-245.
11. Gholami, R., Sands, J. W., & Rahman, A. A. (2022). Gender Diversity and Environmental, Social, and Governance Reporting: Evidence from US Publicly Traded Companies. *Corporate Social Responsibility and Environmental Management*, 29(5), 2467-2482.
12. Gujarati, D. N. (2004). *Basic Econometrics*. Tata McGraw-Hill Education.
13. Hasan, A., Sufi, U., & Hussainey, K. (2023). Risk committee characteristics and risk disclosure in banks: evidence from an emerging economy. *Journal of Applied Accounting Research*, 24(5), 910-932.
14. Huang, D. Z. (2021). Environmental, social and governance (ESG) activity and firm performance: A review and consolidation. *Accounting & finance*, 61(1), 335-360.
15. Jayeola, O. A., Agbatogun, A. O., & Akinrinlola, O. T. (2017). Determinants of Sustainability Reporting Quality: Empirical Evidence from Nigeria. *Environmental Science and Pollution Research*, 24(5), 4547-4557.
16. Kerlinger, F. N. (1973). *Foundations of Behavioral Research*. CBS Publishers & Distributors.
17. Khemakhem, H., Arroyo, P., & Montecinos, J. (2023). Gender diversity on board committees and ESG disclosure: Evidence from Canada. *Journal of Management and Governance*, 27(4), 1397-1422.
18. Khemakhem, H., Arroyo, P., & Montecinos, J. (2023). Gender diversity on board committees and ESG disclosure: Evidence from Canada. *Journal of Management and Governance*, 27(4), 1397-1422.
19. Kumo, W. L. (2009). Stock Market Development and Economic Growth in Nigeria: An Empirical Analysis. *International Business and Management*, 1(1), 62-68.
20. Kyaw, K., Chindasombatcharoen, P., Jiraporn, P., & Treepongkaruna, S. (2021). Do co-opted boards strategically choose LGBT-supportive policies?. *International Review of Financial Analysis*, 73, 101651.
21. Kyaw, K., Treepongkaruna, S., Jiraporn, P., & Padungsaksawasdi, C. (2022). Does board gender diversity improve the welfare of lesbian, gay, bisexual, and transgender employees? *Corporate Social Responsibility and Environmental Management*, 29(1), 200-210.
22. Malik, M. F., Zaman, M., & Buckby, S. (2020). Enterprise risk management and firm performance: Role of the risk committee. *Journal of Contemporary Accounting & Economics*, 16(1), 100178.
23. Mallidis, I., Giannarakis, G., & Sariannidis, N. (2024). Impact of board gender diversity on environmental, social and ESG controversies performance: The moderating role of united nations global compact and ISO. *Journal of Cleaner Production*, 141047.
24. Manita, R., Bruna, M.G., Dang, R. and Houanti, L. (2018), "Board gender diversity and ESG disclosure: evidence from the USA", *Journal of Applied Accounting Research*, Vol. 19 No. 2, pp. 206-224, doi: 10.1108/JAAR-01-2017-0024
25. Orazalin, N., & Baydauletov, M. (2020). Corporate social responsibility strategy and corporate environmental and social performance: The moderating role of board gender diversity. *Corporate Social Responsibility and Environmental Management*, 27(1), 1-15.
26. Osaze, P. A. (2007). The Development of Bond Market in Nigeria: An Analytical Perspective. *African Economic and Business Review*, 5(1), 1-15.
27. Pozzoli, M., Pagani, A., & Paolone, F. (2022). The impact of audit committee characteristics on ESG performance in the European Union member states: Empirical evidence before and during the COVID-19 pandemic. *Journal of Cleaner Production*, 371, 133411.
28. Shahbaz, M., Karaman, A.S., Kilic, M. and Uyar, A. (2020), "Board attributes, CSR engagement, and corporate performance: what is the nexus in the energy sector?", *Energy Policy*, Vol. 143, doi: 10.

- 1016/j.enpol.2020.111582
29. Shakil, M. H. (2021). Environmental, social and governance performance and financial risk: Moderating role of ESG controversies and board gender diversity. *Resources Policy*, 72, 102144.
 30. Shakil, M. H., Tasnia, M., & Mostafiz, M. I. (2021). Board gender diversity and environmental, social and governance performance of US banks: Moderating role of environmental, social and corporate governance controversies. *International Journal of Bank Marketing*, 39(4), 661-677.
 31. Tilt, C. A. (2001). The Content and Disclosure of Australian Corporate Environmental Policies. *Business Strategy and the Environment*, 10(1), 14-26.
 32. Tiwari, K., & Khan, M. S. (2020). Sustainability accounting and reporting in the industry 4.0. *Journal of cleaner production*, 258, 120783.
 33. Velte, P. (2016). Women on management board and ESG performance. *Journal of Global Responsibility*, 7(1), 98-109.
 34. Veltri, S., Mazzotta, R., & Rubino, F. E. (2021). Board diversity and corporate social performance: Does the family firm status matter? *Corporate Social Responsibility and Environmental Management*, 28(6), 1664-1679.
 35. Woodridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. The MIT Press.
 36. Yahya, H. (2023). Female leadership and ESG performance of firms: Nordic evidence. *Corporate Governance: The International Journal of Business in Society*.
 37. Yarram, S.R. and Adapa, S. (2021), "Board gender diversity and corporate social responsibility: is there a case for critical mass?", *Journal of Cleaner Production*, Vol. 278, doi: 10.1016/j.jclepro.2020.123319
 38. Yorke, S. M., Donkor, A., & Appiagyei, K. (2023). Experts on boards audit committee and sustainability performance: The role of gender. *Journal of cleaner production*, 414, 137553.
 39. Yusuf, I., Ahmed Aliyu, I., & Al-Faryan, M. A. S. (2023). Board risk committee composition and risk-taking of deposit money banks in Nigeria. *Cogent Business & Management*, 10(1), 2187884.
 40. Zaid, A.A., Wang, M., Adib, M., Sahyouni, A. and Abuhijleh, T.F.S. (2020), "Boardroom nationality and gender diversity: implications for corporate sustainability performance", *Journal of Cleaner Production*, Vol. 251, 119652, doi: 10.1016/j.jclepro.2019.119652.
 41. Zubeltzu-Jaka, E., Alvarez-Etxeberria, I., & Ortas, E. (2020). The effect of the size of the board of directors on corporate social performance: A meta-analytic approach. *Corporate Social Responsibility and Environmental Management*, 27(3), 1361-1374.
 42. Bravo, F. and Reguera-Alvarado, N. (2019), "Sustainable development disclosure: environmental, social, and governance reporting and gender diversity in the audit committee", *Business Strategy and the Environment*, Vol. 28 No. 2, pp. 418-429, doi: 10.1002/bse.2258.
 43. Dawkins, C. (2005). *Corporate Social Responsibility Reporting in South Africa*. *Meditari Accountancy Research*, 13(1), 1-24.
 44. Gholami, R., Sands, J. W., & Rahman, A. A. (2022). Gender Diversity and Environmental, Social, and Governance Reporting: Evidence from US Publicly Traded Companies. *Corporate Social Responsibility and Environmental Management*, 29(5), 2467-2482.
 45. Gujarati, D. N. (2004). *Basic Econometrics*. Tata McGraw-Hill Education.
 46. Jayeola, O. A., Agbatogun, A. O., & Akinrinlola, O. T. (2017). Determinants of Sustainability Reporting Quality: Empirical Evidence from Nigeria. *Environmental Science and Pollution Research*, 24(5), 4547-4557.
 47. Kerlinger, F. N. (1973). *Foundations of Behavioral Research*. CBS Publishers & Distributors.
 48. Kumo, W. L. (2009). Stock Market Development and Economic Growth in Nigeria: An Empirical Analysis. *International Business and Management*, 1(1), 62-68.
 49. Manita, R., Bruna, M.G., Dang, R. and Houanti, L. (2018), "Board gender diversity and ESG disclosure: evidence from the USA", *Journal of Applied Accounting Research*, Vol. 19 No. 2, pp. 206-224, doi: 10.1108/JAAR-01-2017-0024
 50. Osaze, P. A. (2007). The Development of Bond Market in Nigeria: An Analytical Perspective. *African Economic and Business Review*, 5(1), 1-15.
 51. Shahbaz, M., Karaman, A.S., Kilic, M. and Uyar, A. (2020), "Board attributes, CSR engagement, and corporate performance: what is the nexus in the energy sector?", *Energy Policy*, Vol. 143, doi: 10.1016/j.enpol.2020.111582
 52. Tilt, C. A. (2001). The Content and Disclosure of Australian Corporate Environmental Policies. *Business Strategy and the Environment*, 10(1), 14-26.
 53. Woodridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. The MIT Press.
 54. Yarram, S.R. and Adapa, S. (2021), "Board gender diversity and corporate social responsibility: is there a case for critical mass?", *Journal of Cleaner Production*, Vol. 278, doi: 10.1016/j.jclepro.2020.123319
 55. Zaid, A.A., Wang, M., Adib, M., Sahyouni, A. and Abuhijleh, T.F.S. (2020), "Boardroom nationality and gender diversity: implications for corporate sustainability performance", *Journal of Cleaner Production*, Vol. 251, 119652, doi: 10.1016/j.jclepro.2019.119652.