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Board diversity and CSR transparency in Nigeria's non-financial firms

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ABSTRACT

Founded on Agency Theory, Upper Echelon Theory, Stakeholder Theory, and Resource Dependence Theory, this study explores how different aspects of board diversity namely gender, nationality, ethnicity, and professional background influence corporate social responsibility (CSR) disclosure among non-financial firms in Nigeria. Using a panel methodology involving 15 listed companies, with a total of 150 firm-year observations from 2014 to 2023, the study applies the panel ordinary least squares (OLS) estimation technique. Post-estimation diagnostic tests are conducted to ensure the robustness of the results. Additionally, a trend analysis was performed to assess the trajectory of CSRD practices over the study period. The empirical findings indicate that ethnic and nationality diversity have a positive impact on CSR disclosures. Conversely, gender and professional background diversity are negatively and significantly related to CSR disclosures, suggesting agency-related issues within diverse boards. The trend analysis further reveals a steady annual increase of approximately 1.8% in CSRD, reflecting growth in sustainability reporting practices in Nigeria. The study offers both theoretical insights and practical recommendations, emphasizing that regulators in emerging economies should move beyond symbolic diversity reporting. Instead, they should promote systems that enable diversity to play a meaningful role in CSR-related decision-making processes. The study underscores that CSRD outcomes are not solely driven by diversity but are significantly influenced by how corporate boards effectively integrate diverse strategies into governance processes.

Contribution/Originality: The study presents an extensive sample-based assessment of how board diversity affects CSR disclosure in emerging economies, particularly in Nigeria, where institutional quality and governance differ significantly from those in developed nations. Additionally, it enriches the postulations in agency, UET, stakeholder, and resource dependence theories by revealing that diversity has differentiated effects.

1. INTRODUCTION

Sustainability has become a crucial debate in corporate governance literature (Behlau, Wobst, & Lueg, 2024; Gardiner, 2024; Torchia & Solarino, 2025). This is due to corporate scandals and financial distress issues, such as Enron, Madoff, Lehman Brothers, and Cadbury, which highlighted flaws in corporate governance structures and poor disclosure practices, and have consistently shaken the global financial landscape.

After the 2008 global financial crisis, governments, regulators, investors, and academics advocated for stronger corporate governance frameworks and increased corporate accountability within organizations (Dall'Agnol, Kabbach-de-Castro, & Redín, 2024). At the center of this debate is the board of directors, the stewards of internal governance, who influence managerial decisions, policies, and disclosure practices. Over the years, board composition and other key characteristics, such as diversity, have emerged as key determinants of corporate stability, legitimacy, and strategic frameworks (Abed, Al-Najjar, & Salama, 2025; Zaman, Asiaei, Nadeem, Malik, & Arif, 2024).

In essence, board diversity, characterized by demographic (age, gender, ethnicity, and nationality) and cognitive (technical skills, knowledge, and work experiences) attributes among directors, broadens the range of perspectives in corporate decision-making. However, the rigidity of corporate boards over the years has increased groupthink and limited the outcomes of strategic decisions (Mendiratta & Tasheva, 2025). Improving diversity outcomes may promote inclusiveness, enhance monitoring systems, and secure accessibility to external resources. These actions, in turn, would improve corporate performance outcomes and investors' confidence.

Theoretically, Agency Theory (Jensen & Meckling, 1976) becomes relevant for oversight functions. Additionally, the Upper Echelon Theory, which links behavioral features to corporate outcomes, and Stakeholder Theory, which emphasizes inclusive decision-making and stakeholder activism, affirm the importance of corporate diversity. Nevertheless, CSR disclosures (CSRD) have become critical in enhancing corporate legitimacy, which can only be achieved through firms' commitment to sustainable practices and transparent reporting (Hossain, Hasan, & Hasan, 2024; Sharma, 2025). In addition, sustainability frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD), the Global Reporting Initiative (GRI), and the Global Sustainability Standard Boards (GSB) have increased pressure on entities to provide environmental disclosures. In emerging economies like Nigeria, the levels and quality of CSRD compliance remain inconsistent, symbolic, or weakly framed (Tobón-Orozco, Pla-Barber, & Alegre, 2025). This, therefore, raises questions about the role of governance in improving CSRD outcomes.

The ability of a diverse board to improve CSR disclosures is quite compelling. Empirical literature recommends that diverse boards (especially those with greater female board participation) tend to be more sensitive to ESG issues, adopt more sustainable and ethical strategies, and strengthen monitoring frameworks (Babiker, Bakhit, Bilal, Abubakr, & Abdelraheem, 2025; Muhammad, Migliori, & Di Berardino, 2025). Board diversity improves decision quality and may directly influence a firm's willingness and ability to disclose CSR outcomes (Cormier, Gutierrez, & Magnan, 2024). Nonetheless, empirical evidence remains inconclusive. Some studies posit that corporate diversity improves transparency and accountability, while others warn against symbolic reporting and disclosures, internal conflicts and overregulation (Beckert & Koch, 2025; Kosh, Smith, & Tan, 2025).

In the face of this dilemma, Nigeria presents a unique and significant context within the Sub-Saharan region. As Africa's largest economy, Nigeria has encountered global pressure from regulators, foreign investors, and local communities to enhance corporate governance and promote sustainable business practices. Conversely, CSR disclosures remain voluntary for most listed firms, and governance systems are undergoing transformation and development within an institutional environment characterized by weak enforcement, information asymmetry issues, and cultural inhibitors. This context provides a valuable opportunity to examine how board diversity both demographic and cognitive affects CSR disclosures among listed non-financial firms.

Therefore, this study examines the effect of board diversity on CSR disclosures of listed non-financial firms in Nigeria. By focusing on Nigeria, an emerging economy, the study advances the literature in three ways: First, it enriches the discussion on the governance-CSR link by examining how internal governance mechanisms such as gender, ethnicity, nationality, and professional background influence CSRD outcomes. Second, it extends theoretical insights by drawing on Agency Theory, Upper Echelon Theory (UET), Resource Dependency Theory, and Stakeholder Theory to predict how diversity affects board effectiveness and CSR disclosure results. Finally, it provides context-specific evidence from an emerging market (Nigeria), where limited empirical studies exist, thereby contributing to policy development and practices aimed at improving corporate accountability and achieving SDGs.

2. LITERATURE REVIEW

Figure 1 clearly illustrates the framework that links board diversity to CSR disclosures through multiple theoretical lenses.

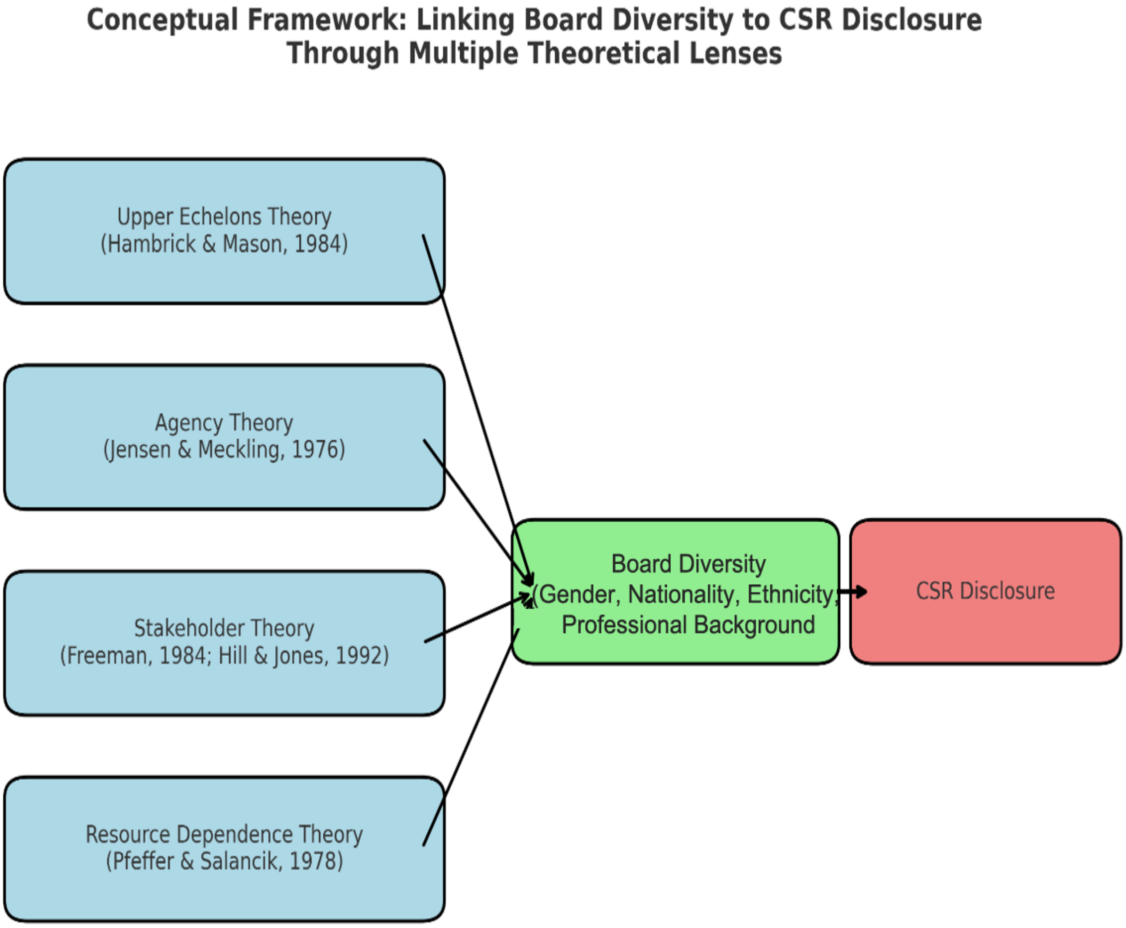

Figure 1. Conceptual Framework.

Source: Hambrick and Mason (1984); Jensen and Meckling (1976); Freeman (1984); Hill and Jones (1992) and Pfeffer and Salancik (1978).

2.1. Theoretical Framework

Numerous researchers have adopted various theories and assumptions to explain CSR practices, particularly from the perspective of board diversity. At the highest level, the Upper Echelon Theory, as proposed by Hambrick and Mason (1984), suggests that the demographic, social, and psychological characteristics of top management and board members influence decision-making processes and organizational performance outcomes. This theory strongly advocates for increased female participation on boards, as men and women tend to differ in their characteristics, as evidenced by previous research. Therefore, the UET offers a behavioral perspective on how gender diversity can enhance CSR outcomes.

While the UET offers insights into individual traits, the agency theory by Jensen and Meckling (1976) provides a fundamental paradigm in organizational literature, elucidating the interactions between principals and agents within organizations (Yolles & Rautakivi, 2024). It delineates conflicts of interest, knowledge asymmetry, oversight, and incentives. Board diversity may alleviate agency issues; however, its relevance in varied situations, such as Nigeria, is debated. Hence, the agency theory supports the view that gender-diverse corporate boards improve governance frameworks and promote CSR practices.

Beyond shareholders' expectations, companies operate within a broader spectrum of key elements, where they must meet the expectations of all stakeholders. Stakeholder theory (Awa, Etim, & Ogbonda, 2024) extends the relevance of CSR disclosures by affirming that firms are responsible not only to shareholders but also to their communities, governments, regulators, employees, customers, and the broader society. Board diversity becomes instrumental in this regard because directors with diverse backgrounds and values are more inclined to represent and champion the interests of multiple stakeholders. CSR actions are a critical response to these expectation gaps, helping to achieve legitimacy and sustainable performance outcomes (Gidage & Bhide, 2025). Gender-diverse boards over the years have enhanced corporate image and built investors' trust. Therefore, stakeholder theory provides a rationale for why board diversity should lead to credible CSR outcomes.

Complementing these perspectives is the Resource Dependence Theory (Pfeffer & Salancik, 1978), which emphasizes the importance of managing corporate legitimacy, external linkages, and dependencies with the external environment. A diverse board provides varied perspectives, skills, knowledge, and expertise, ensuring the firm's access to resources and its ability to meet stakeholders' expectations. In this context, diversity serves as a pathway to achieving corporate legitimacy and fostering investor confidence through CSR disclosures. The RDT offers a framework for firms to navigate resource dependencies and advance their CSR objectives.

2.2. Hypotheses Development

2.2.1. Gender Diversity and CSR Disclosures

Gender diversity refers to the representation and distribution of both genders within an organization. It is essential to include board members who are committed to ESG concerns, oversight, and the provision of innovative solutions and perspectives in the boardroom. Globally, gender diversity is recognized as a key driver of effective corporate governance. Female directors offer unique perspectives, moral frameworks, and knowledge that enhance board effectiveness and decision-making (Lefley, Trnková, & Vychová, 2024; Wiersema & Mors, 2023). Previous research posits that women are more ethically inclined than men are, less likely to compromise set standards, and more stakeholder-oriented (Alkayed, Shehadeh, Yousef, & Hussainey, 2024).

In the context of corporate boards, these features promote greater intuition and commitment to ESG concerns and CSR outcomes (Bani-Khaled, Azevedo, & Oliveira, 2024). From the stakeholder theory perspective, female board participation enhances a firm's ability to meet stakeholders' expectations, while the resource dependency theory suggests that female directors promote corporate legitimacy and reputation (Andrews, 2024). Although some studies have posited a neutral or negative nexus between gender diversity and CSRD (Dias, Pinheiro, & Fernandes, 2024), the majority of outcomes are a positive effect (Krasodomska & Eisenschmidt, 2025).

2.2.2. Nationality, Diversity and CSR Disclosures

Board nationality diversity is indicated by the involvement of foreign directors, which provides firms with key resources such as global experience, cultural understanding, and an expanded stakeholder network (Morán-Muñoz, Fernández-Gago, & Godos-Díez, 2025). According to the resource-based view (RBV) theory, directors bring a diverse skill set and perspectives that local directors may lack, thereby enhancing decision-making and market performance. Additionally, foreign directors are perceived as more independent members of the board, which improves transparency and promotes sustainable disclosure practices (Zarefar, Agustia, & Soewarno, 2024).

Empirical review provides mixed findings, while some affirm a positive link between nationality diversity and CSR disclosure (Ali, Wilson, & Hamza, 2025), others raise concerns about higher agency costs and limited knowledge of the local environment, reducing board performance (Bint Raza, Sheikh, & Rahman, 2024). Nevertheless, applying stakeholder theory, foreign directorship is expected to promote accountability and intensify CSR disclosures, thereby attracting domestic and foreign investors.

2.2.3. Ethnic Diversity and CSR Disclosures

Ethnic diversity reflects a demographic characteristic that enhances cognitive skill sets in boardrooms. From the RBV perspective, ethnically diverse boards can be regarded as strategic resources that promote innovative solutions and responsiveness to stakeholders' expectations (Etalong, Chikeleze, & Okwueze, 2024). Multi-ethnic boards foster comprehensive discussions, reduce groupthink, and improve the quality of CSR disclosures (Hays-Thomas & Chrobot-Mason, 2022).

Furthermore, boards with ethnic minorities are more likely to comprehensively understand the expectations of diverse stakeholder groups, aligning CSR strategies with broader societal expectations. Nevertheless, literature reveals mixed outcomes: some studies show a positive effect of ethnic diversity on CSR outcomes (Do & Herbohn, 2024) others report no effect (Benaguid, Sbai, Meghouar, & Antari, 2023) and very few reveal adverse outcomes due to conflict and communication challenges (Kong, Kong, Qin, & Yu, 2023). Despite these mixed outcomes, the research adopted theories that support the notion that ethnic diversity promotes CSR disclosure, inclusivity, and alignment with stakeholders' demands.

2.2.4. Professional Background Diversity and CSR Disclosure

Professional background diversity is largely determined by the board members' academic qualifications and experiences. Corporate boards with diverse educational disciplines, such as management sciences, law, engineering, and communications technology, are strategically equipped to address complex CSR issues (Okere, Rufai, Okeke, & Oyinloye, 2021). From RBV and Resource Dependency Theory perspectives, such diversity provides firms with wider cognitive resources and promotes legitimacy by integrating all facets of the organization's affairs into decision-making (Gjesdal, 2024).

Furthermore, boards with highly educated members process information more effectively and demonstrate better inclusion in innovative CSR practices (Cormier et al., 2024). Previous studies significantly affirm the positive impact of educational background diversity and CSR outcomes (Khan, Khan, & Saeed, 2019). Notwithstanding, some studies caution that excessive diversity in educational background may create coordination issues and limit innovation (Kim, Jang, & Kim, 2025).

Although the growing demand from stakeholders for CSR disclosures and integrated reporting is increasing, professional diversity is expected to enhance CSR outcomes. Table 1 presents the summary of hypotheses and a priori expectations for the study.

Table 1. Summary of hypotheses

Hypothesis	Diversity dimension	Expected impact on CSR disclosure
H1	Gender Diversity	Positive
H2	Professional Background Diversity	Positive
H3	Nationality Diversity	Positive
H4	Ethnic Diversity	Positive

3. MATERIALS AND METHODS

This research employed an ex-post facto methodology. The population of this study comprises forty-seven (47) non-financial enterprises spanning six sectors: agriculture, conglomerates, consumer products, industrial, natural resources, and oil and gas, which are listed on the Nigerian Exchange Group as of December 31, 2019 (Nigerian Exchange Group (NGX), 2023). A purposive sampling technique was employed to select a sample of fifteen (15) non-financial corporations listed on the Nigerian Exchange Group (NGX) from 2014 to 2023. Panel Ordinary Least Squares (OLS) regression analysis was conducted to determine the coefficients (β) and to test hypotheses concerning the relationship between board diversity and CSR disclosure in Nigerian non-financial enterprises. Additionally, descriptive statistics were performed on the study variables. A robustness check was carried out, including the Hausman test, multicollinearity assessment, normality test, and heteroscedasticity test, using STATA 14.2 and SPSS software. Table 2 presents the list of non-financial firms that meet the set criteria.

Table 2. Selected sample of listed non-financial firms in Nigeria.

Sector	No sample	Company Name	Date listed	Date incorporated.
Agricultural	2	Livesincorporatedeeds Plc	1978	1963
		Presco Plc	1991	1991
Conglomerates	2	Chellarams Plc	1977	1947
		Flour Mills of Nigeria Plc	1962	1960
Consumer goods	5	Unilever Nigeria Plc (CG)	1973	1923
		Union Dicon Salt Plc (BRS)	1993	1991
		Nestle Nigeria Plc (CG)	1979	1969
		Champion Breweries Plc	1978	1974
		Dangote Sugar Refinery Plc	2006	1999
Industrial	2	Lafarge Africa Plc (CG)	1979	1959
		Beta Glass Plc	1986	1974
Natural resources	2	Aluminum Extrusion Ind. Plc	1987	1982
		Seplat Petroleum Development Co. Plc	2010	2009
Oil and Gas	2	Oando Plc	1992	1969
		MRS Oil Nigeria Plc	1969	1970
		Total Nigeria Plc	1979	1956
Total	**15**			

Source: Nigerian Exchange Group, 2025.

3.1. Operationalization of Variables

This section provides a clear understanding and definition of the variables in the research model. Table 3 presents the definitions and measurement parameters for the examined variables.

Table 3. Definition and Measurement of Variables.

Variable	Definition of variable	Measurement of variables	Sources
Dependent variable			
CSRD	CSR disclosure	A composite index or score derived from annual reports, sustainability reports, and other relevant documents. The indices are: - Social responsibility initiatives - Environmental stewardship practices - Community engagement efforts	Hameed, Wilmshurst, and Horner (2024)
Independent variable	**Board diversity variables**		
GD	Gender diversity (Female board participation)	Percentage calculation based on the total number of female directors relative to the total board membership.	Lefley, Trnková, & Vychová, 2024
ED	Ethnic Diversity	Dummy variable reflecting the diversity of surnames and their assignments. 1 if the board members are from different ethnic tribes, and 0 if otherwise.	Do and Herbohn (2024)
ND	Nationality diversity	Ratio of foreign directorship to total board size	Torchia and Solarino (2025)
PBD	Index or dummy variable indicating the diversity of citizenship or residency status among board members.	Index of professional membership diversity, covering six categories: ICAN, CIBN, COREN, ICEN, NIM, and CITN.	Van Der Walt and Ingley (2003)
Control variables	Firm characteristics		
FS	Firm size	The Natural logarithm of total assets	Okere, Ifekwem, Lawrence, Omotola, and John (2024)
FA	Firm age	The number of years since incorporation	Younis and Sundarakani (2020)

3.2. Model Specification

This study adopted the regression equation in Peng, Yang, Shao, and Li (2021) as shown below.

$$SR_{it} = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BS_{it} + \beta_5 BI_{it} + \beta_6 BFE_{it} + \beta_7 BG_{it} + e_{it} \quad (1)$$

Where:

SRit refers to sustainability reporting, BSit denotes board size, BIit signifies board independence, BFEit indicates board financial expertise, BGit represents board gender, FAit stands for firm age, FSit denotes firm size, FPit signifies firm performance, and ϵ represents the error term.

The model is modified to:

$$CSRD_{it} = \beta_0 + \beta_1 GDi_{it} + \beta_2 EDi_{it} + \beta_3 NDi_{it} + \beta_4 PBDi_{it} + \beta_5 FSi_{it} + \beta_6 FAi_{it} + e_{it} \quad (2)$$

Where:

$CSRD_{it}$ = CSR Disclosure for firm i at time t.

GDi_{it}, EDi_{it}, NDi_{it}, *and* $PBDi_{it}$ represent the respective measures of board diversity (Gender Diversity (GD), Ethnic Diversity (ED), Nationality Diversity (ND), and Professional Background Diversity (PBD)) for firm i at time t.

FSi_{it} *and* FAi_{it} represent the models' control variables.

β_0 is the intercept term.

β_1, β_2, β_3, β_4, β_5 and β_6 are the coefficients.

ϵ_{it} is the error term.

4. RESULTS AND DISCUSSIONS

4.1. Descriptive Analysis

The descriptive statistics of the variables used in this study are presented in Table 4.

Table 4. Descriptive Statistics of Dependent and Independent Variables.

Variable	Obs	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
CSRD	150	0.871	0.069	0.7	1	-0.304	2.374
GD	150	0.256	0.041	0.15	0.35	-0.195	2.583
ED	150	0.356	0.040	0.25	0.43	-0.277	2.553
ND	150	0.206	0.039	0.1	0.28	-0.277	2.552
PBD	150	0.446	0.054	0.3	0.53	-0.755	2.893

Table 4 delineates the characteristics and distribution of the dataset, including the frequency of observations, mean, standard deviation, minimum, and maximum values. The average CSRD (Cross-Secondary Risk Reduction) value for non-financial firms is 0.871, accompanied by a standard deviation of 0.069. This suggests that the data points are closely clustered around the mean, indicating minimal variability.

Gender Diversity (GD) has an average value of 0.256, with a standard deviation of 0.041, 0.15, and 0.35, indicating a decrease in variability and suggesting moderation in the collected data. The mean value of Ethnic Diversity (ED) is 0.356, with a minimum of 0.25 and a maximum of 0.43. The standard deviation of 0.040 reflects consistency across the dataset. Nationality Diversity (ND) has an average value of 0.206, ranging between the lowest value of 0.1 and the highest of 0.28. The disparity in ND values is below the mean, indicating low volatility within the dataset for this variable. The mean value of Professional Background Diversity (PBD) is 0.446, with the lowest and highest values of 0.3 and 0.53, respectively. The standard deviation of 0.054 suggests a narrow dispersion around the mean, indicating relative stability in professional background diversity across the dataset.

4.2. Post-Estimation Test-Homogeneity of Variance

Several tests were conducted on the data collected for this study before it was incorporated into the model. The results of the preliminary tests are presented in the following subsections. Table 5 displays the statistics for the IM test for heteroskedasticity.

Table 5. Cameron and Trivedi's decomposition of the IM-test

Source	chi²	Df	P
Heteroskedasticity	4.630	8	0.796
Skewness	0.347	3	0.421
Kurtosis	2.564	1	0.294
Total	8.550	12	0.041

4.2.1. Estimation Normality Tests

The IM test results indicate that the null hypothesis of homoscedasticity cannot be rejected, as the heteroscedasticity components ($X^2 = 0.347$, $p = 0.421$) and kurtosis ($X^2 = 2.564$, $p = 0.294$) values are statistically insignificant. This suggests that the residuals are symmetrically distributed and not excessively peaked. Therefore, both the normality and distributional assumptions of the error terms are upheld. However, the total chi-square statistic ($X^2 = 8.550$; df = 12, $p = 0.041$) indicates marginal overall significance at the 5% level, which implies that, while individual components of the IM test are not significantly problematic, the combined test detects some deviation from ideal distributional assumptions. Table 6 presents the multicollinearity test for the variables using the Variance Inflation Factor (VIF) test.

Table 6. Variance Inflation Analysis

Variables	VIF	1/VIF
GD	1.578	0.634
ED	1.49	0.671
ND	1.081	0.925
PBD	1.24	0.718
Mean VIF	1.383	0.737

4.2.2. Multi-Collinearity Tests

The VIF test results indicate that all variables are within the acceptable threshold of five, which is commonly used as a benchmark for addressing concerns about multicollinearity. Therefore, it can be concluded that multicollinearity is not an issue for the reliability of the regression estimates in this analysis, and the model is sufficient for subsequent analysis. Table 7 presents the trend analysis results for CSR reporting.

Table 7. Time-Series Trend Analysis Results of CSR Disclosure (CSRD) Practices.

Variable	Coefficient	Standard Error	t-statistic	P-value	95% Confidence Interval
Year	0.017	0.001	13.45	0.000	[0.015, 0.020]
Constant (_cons)	-34.874	2.659	-13.12	0.000	[-40.128, -29.620]
Model Summary					
Number of Observations		150			
F-statistic		180.78		0.000	
R-squared		0.550			
Adjusted R-squared		0.547			
Root Mean Square Error		0.046			

4.3. Trend Analysis

The results indicate a positive and significant time trend in CSRD practices. The coefficient of the year variable (0.0177, $p < 0.001$) suggests that, on average, the level of CSR disclosure increases by approximately 1.8% per year. This highlights a consistent improvement in corporate transparency and the disclosure of CSR activities over the study period. The constant term is negative and significant (-34.8739, $p < 0.001$), implying that baseline CSR disclosures were very low in the earlier years of the period; however, the strong and positive slope over time offsets this, indicating steady growth in CSRD practices.

Furthermore, the F-statistic is positive and significant (180.78, $p < 0.001$), with an R-squared value of 0.55. This indicates that 55% of the variation in the dependent variable (CSRD) can be explained solely by the passage of time. This finding suggests that time is a key factor influencing CSRD, reflecting the evolving demands of stakeholders, reforms in the regulatory framework, institutional compliance, and convergence towards sustainability standards. Additionally, the trend analysis provides comprehensive evidence that CSR disclosures by firms have improved over time, aligning with global initiatives and national calls for enhanced accountability and sustainability reporting. This progression is further illustrated by the time series plot analysis presented below.

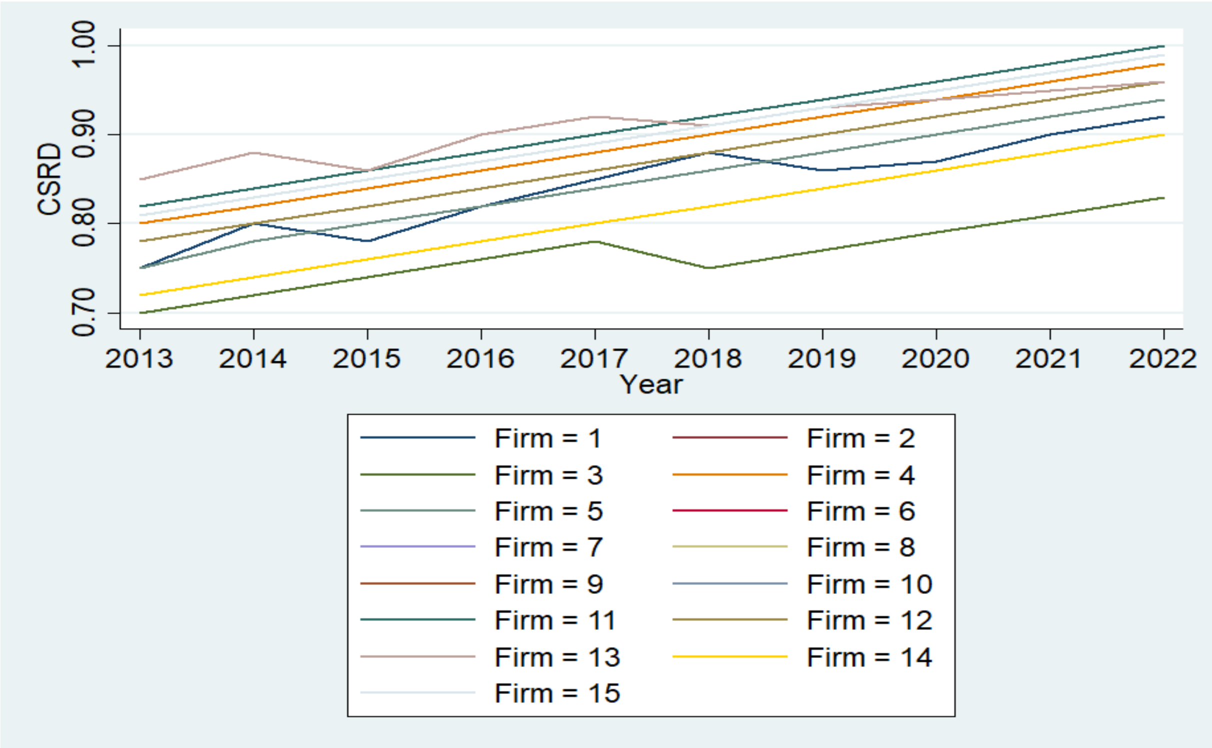

Figure 2. Trend of CSR disclosure (CSRD) practices among non-financial firms in Nigeria.

The time-series plot in Figure 2 illustrates the trends in CSR disclosure (CSRD) practices across 15 non-financial firms in Nigeria between 2013 and 2022. A distinct line represents each firm, tracking its CSRD performance over time. The vertical axis (y-axis) displays the CSRD scores, ranging from 0.70 to 1.00, and the horizontal axis (x-axis) represents the years from 2013 to 2022. The overall pattern in the graph indicates a positive upward trend in CSRD practices for most firms, signifying that these firms are increasingly embracing transparency in disclosing their social responsibility activities. The lines representing each firm generally slope upward, indicating that these firms have progressively improved their CSR disclosures over the years.

This outcome aligns with the findings from the regression analysis, wherein the coefficient for the year is positive (0.0177), indicating a consistent increase in CSRD with each passing year. Despite the positive trend, there are some variations within the dataset. For example, firm six demonstrates fluctuations, including a discernible decline in CSR disclosures in 2017 and a substantial recovery in subsequent years.

Moreover, in the early years (2013), the CSRD scores showed more dispersion, with some firms starting at relatively low levels (around 0.70), while others began with higher scores (closer to 0.80 or 0.90). However, by 2022, the lines appeared to converge, with most firms nearing CSRD scores of 1.00, indicating that the differences in CSR disclosure practices among these firms have become less pronounced over time. This convergence suggests that firms are gradually aligning in terms of their commitment to disclosing CSR activities, possibly due to regulatory changes, increased stakeholder pressure, or a shared understanding of the importance of CSR.

Table 8. Model summary.

Random-effects OLS regression	**Number of obs. = 150**
Group variable: Firm	Number of groups = 15
R-sq:	Obs per group:
within = 0.949	Min. = 10
between = 0.993	Avg = 10.0
overall = 0.968	Max. = 10
	Wald chi2(5) = 26334.74
corr(u_i, X) = 0 (assumed)	Prob > chi2 = 0.000
(Std. Err. adjusted for 15 clusters in Firm)	

4.4. Regression Results

Table 8 presents the findings of the model summary. A random-effects Ordinary Least Squares (OLS) regression analysis was conducted on a dataset comprising 150 observations across 15 companies. The model explains a significant portion of the variation in CSR disclosure, with an R-squared value of 0.968, indicating that approximately 96.78% of the variance in CSR disclosure is accounted for by the independent variables included in the model.

The within-group R-squared (0.95) indicates that the model explains a substantial portion of the variability in CSR disclosure among individual enterprises. The between-group R-squared (0.99) suggests significant differences in CSR disclosure across different enterprises. The Wald chi-squared test value (26,334.74) further supports this, demonstrating high statistical significance ($p < 0.001$), which confirms that the model is statistically valid. The model assumes zero correlation between the random effects and the independent variables ($corr(u_i, X) = 0$), indicating that there is no systematic bias in the estimation process due to unobserved heterogeneity.

4.4.1. Model Parameters

Table 9 presents the results of the Panel OLS regression analysis conducted with robust standard errors.

Table 9. Model parameters (Coefficients).

CSRD	**Coef.**	**Std. Err.**	**t-value**	**p-value**	**[95% Conf.**	
GD	-1.036	0.502	-2.07	0.039	-2.019	-0.053
ED	3.162	0.684	4.62	0.000	1.822	4.502
ND	2.148	0.754	2.85	0.019	0.443	3.853
PBD	-0.255	0.118	-2.16	0.031	-0.487	-0.023
FS	-2.10e	50.22e	-4.02	0.000	-3.12e	-1.07e
FA	-0.000	0.000	-1.97	0.049	-0.000	-5.36e
_cons	0.156	0.079	1.96	0.050	-0.000	0.312
sigma_u	0					
sigma_e	0.01245978					
Rho	0	(Fraction of variance due to u_i)				

4.5. Test of Hypotheses

The coefficient value for gender diversity (GD) is -1.036, with a standard error of 0.502, as shown in Table 9. The p-value is 0.039, indicating that we reject the null hypothesis (HO_1) and confirm that a significant negative correlation exists between GD on corporate boards and the level of CSR disclosure in Nigerian non-financial enterprises. This suggests that an increase in gender diversity levels on corporate boards is associated with a decrease in the degree of CSR disclosure.

The findings of the data analysis, as shown in Table 9, reveal that the coefficient for ethnic diversity (ED) is 3.162, accompanied by a standard error of 0.684. The p-value is less than 0.001. Consequently, we reject the null hypothesis (HO_2) and conclude that a statistically significant positive correlation exists between ethnic diversity among board members and the level of CSR disclosure in Nigerian non-financial enterprises. This suggests that an increase in ethnic diversity on corporate boards is associated with higher levels of CSR disclosure.

The outcome of the Panel OLS regression analysis, as shown in Table 9, indicates that the coefficient for nationality diversity (ND) is 2.148, with a standard error of 0.754. The p-value is 0.019, signifying statistical significance. Consequently, we reject the null hypothesis (HO_3) and conclude that a statistically significant positive correlation exists between the diversity of nationalities on boards and the level of CSR disclosure in Nigerian non-financial enterprises. This suggests that an increase in nationality diversity on company boards is associated with a rise in CSR disclosure levels.

The data in Table 9 reveal that the coefficient for varied professional backgrounds (PBD) is -0.255, accompanied by a standard error of 0.118. The p-value is 0.031, indicating statistical significance. Consequently, we reject the null hypothesis (HO_4) and conclude that there is a statistically significant negative correlation between the diversity of professional backgrounds among board members and the level of CSR in Nigerian non-financial enterprises. This suggests that an increase in the variety of professional backgrounds on corporate boards is associated with a decline in CSR disclosure levels.

4.6. Discussion of Findings

The study's findings demonstrate an upward trend (Figure 1) in CSR disclosure over time, indicating that Nigerian firms are increasingly recognizing the importance of corporate transparency and accountability. Furthermore, these results may be attributed to the rising demands of stakeholders (Buallay, Kukreja, Aldhaen, Al Mubarak, & Hamdan, 2020) and the long-term advantages associated with CSR disclosure.

According to the regression output, the findings reveal mixed dynamics regarding how corporate board diversity influences CSR disclosures. The negative association between gender diversity and CSR disclosures contradicts the global perspective and existing literature (Wiersema & Mors, 2023). In Nigeria, corporate board dynamics may limit the impact of female board participation on CSRD outcomes.

Therefore, this may indicate that female representation alone is insufficient; firms must also foster an inclusive board system that promotes female board participation in critical decision-making processes such as CSRD. These findings are consistent with those of (Halkos & Nomikos, 2021). Furthermore, the Nigerian business environment often operates within a patriarchal system, where female board participation is low and symbolic rather than indicative of sustainable female activism and empowerment. Consequently, female directors may be present on the board but marginalized, thereby reducing their expected impact on CSR actions and commitments. This underscores that gender effects are not universally positive or negative but are instead dependent on context and shaped by local and institutional dynamics.

Furthermore, ethnic diversity has a strong positive relationship with CSRD, supporting the idea that diverse perspectives broaden corporate boards' sensitivity to stakeholders' needs and demands. Therefore, ethnic diversity may enhance inclusivity, foster legitimacy, and improve corporate accountability within governance processes. These notions align with the findings of Hays-Thomas and Chrobot-Mason (2022). In addition, national diversity has a significant impact on CSR disclosures. This outcome suggests that directors from diverse cultural backgrounds can bring global perspectives, align with global sustainability standards, and highlight the role of multinational influence in transforming CSR practices in emerging markets (Ali et al., 2025).

Conversely, diversity in professional backgrounds has a negative effect on CSR disclosures. This indicates that while diversity in expertise can support sustainable decision-making, it may also lead to conflicting priorities and dilute focus on CSR. This outcome aligns with the findings of Kim et al. (2025), who discovered that educational diversity may create coordination issues and limit board innovation. This suggests that corporate organizations should balance board expertise to ensure that CSR remains a vital priority.

4.6.1. Theoretical Implications

The conclusions of this research provide critical insights for management theories. For example, the negative link between gender and professional background diversity with CSR disclosure indicates potential conflicts within corporate boards that limit the ability of diverse groups to influence CSR decisions. This aligns with the agency theory perspective, where management may not always act in the best interests of its shareholders. This highlights the need to ensure that competing interests do not overshadow CSRD priorities. Furthermore, the increasing CSRD by firms and the positive impact of ethnic and national diversity emphasize the assumptions of resource dependency theory, which suggests that firms utilize their resources to manage relationships with stakeholders.

Therefore, firms may be motivated to disclose CSR information not only for legitimacy reasons but also to meet global sustainability standards. This perspective aligns with the notion that stakeholders' expectations shape corporate behavior, lending credence to stakeholder theory. Additionally, the positive outcomes of board diversity and the CSRD support stewardship theory, which suggests that directors from various backgrounds can act as stewards, focusing on long-term corporate interests and stakeholder expectations. Furthermore, the findings support the UET postulations that corporate outcomes are determined by managerial and board characteristics. Therefore, board directors, as reflections of a firm's behavioral and demographic features, significantly impact CSRD.

4.6.2. Policy Implications

The research findings provide several critical and policy-oriented lessons.

i. Regulators in Nigeria and other emerging nations should avoid symbolic diversity reporting and instead foster systems that allow diversity to play a significant role in CSR-related decision-making.
ii. Corporations should be motivated through incentives or mandatory disclosure standards to incorporate stakeholder perspectives into CSR disclosures. Regarding sustainability, ethnic and nationality diversity on corporate boards can significantly contribute to building trust and establishing corporate legitimacy.
iii. Gender diversity agendas through capacity building should be upheld by mentorship, leadership training, and inclusive boardroom processes to ensure female participation in shaping CSR outcomes.
iv. Policymakers should ensure the adoption of sustainability frameworks such as the Global Reporting Initiatives, the TCFD framework, and IFRS S1 & S2 to improve CSR practices and enhance comparability among entities.

5. CONCLUSION AND RECOMMENDATIONS

This study affirms the multifaceted role of board diversity in transforming CSR disclosure practices in quoted non-financial firms in Nigeria. While ethnic and nationality diversity emerge as positive drivers of CSR disclosure practices, gender diversity and professional background diversity highlight negative associations. Based on these insights, the study recommends that:

i. Gender diversity inclusions should extend beyond quotas and representation. Firms should promote inclusive boardroom cultures that empower women and foster sustainable female board participation in shaping CSR agendas.
ii. Ethnic diversity should be encouraged through inclusive recruitment practices and organizational cultures that value diverse principles and perspectives.
iii. National diversity frameworks should be strategically capitalized, particularly in firms operating across borders, to align CSR practices with global standards and benchmarks.
iv. Professional background diversity should be strategically managed to strike a balance between diverse expertise and alignment with sustainability priorities.

5.1. Limitations of the Study

Despite key contributions made by this study, there exist some limitations, like any empirical study.

i. The analysis was limited to non-financial firms listed on the Nigerian Stock Exchange Group; therefore, its outcomes cannot be generalized to financial firms and other emerging markets.
ii. CSR disclosure was captured quantitatively in this study, but the study did not assess the depth or quality of disclosures, which may vary across firms.
iii. While the study provides significant outcomes, the panel nature of the dataset limits causal interpretations. Board diversity may impact CSR disclosures, but reverse causality cannot be ruled out.
iv. Other drivers, such as corporate culture and stakeholder activism, were not captured in the model, which may have influenced the diversity-CSRD outcomes.

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